American Contractors considers safety a top priority in our everyday office and business activities. It is our policy to provide and maintain a safe and healthy work environment and to follow operating practices that safeguard all employees and result in efficient operations. In all instances, safe work practices take precedence over shortcuts and expedient actions.

If any one management responsibility can be singled out as more important than the rest, it is the responsibility of our managers and supervisors to provide a safe working environment for all of our employees.

Each employee is responsible for keeping safety a priority in performing his or her work and interactions with others. This includes a safety-conscious attitude of understanding, following, and promoting established health and safety procedures.

A safe working environment can be established with everyone’s effort towards this goal.

Michael H. Overholt, CSP, ARM, CRIS
Vice President – Safety & Quality

Michael J. O’Neill, CPCU, ARM
President & CEO
PURPOSE

The purpose of this manual is to provide a guide to our shareholders in the area of Safety Management and loss prevention control.

This manual is designed as a reference book for the Safety Manager, Risk Manager or Safety Inspector. It will be helpful for those with limited experience and those with many years of experience, but is not intended to take the place of a comprehensive company safety program. The manual should be used as a reference guide of the minimum safety guidelines and procedures to supplement your safety program.

Emphasis throughout is on clearly defined procedures that can produce the best end product. Full attention is also given to ways to help the contractor manage the project in a safe manner.

This manual will be updated and revised as needed according to new regulations and standards. Please find below the latest revision detail.

Revision Detail

<table>
<thead>
<tr>
<th>Date</th>
<th>Change Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/01/05</td>
<td>Purpose Section Update</td>
</tr>
<tr>
<td>08/04/05</td>
<td>Section 28</td>
</tr>
<tr>
<td>11/02/10</td>
<td>Section 25</td>
</tr>
<tr>
<td>11/02/10</td>
<td>Table of Contents</td>
</tr>
<tr>
<td>09/12/11</td>
<td>Purpose Section Update</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>1</td>
<td>Introduction</td>
</tr>
<tr>
<td>2</td>
<td>Policy Statement</td>
</tr>
<tr>
<td>3</td>
<td>Functions and Responsibilities</td>
</tr>
<tr>
<td></td>
<td>Safety Department .......................................................................................... 3-1</td>
</tr>
<tr>
<td></td>
<td>Position Descriptions for:</td>
</tr>
<tr>
<td></td>
<td>Executive Management ........................................................................... 3-2</td>
</tr>
<tr>
<td></td>
<td>Project Manager/Supervisor ..................................................................... 3-3</td>
</tr>
<tr>
<td></td>
<td>Field Supervisor .................................................................................... 3-4</td>
</tr>
<tr>
<td></td>
<td>Office and Field Engineer ..................................................................... 3-6</td>
</tr>
<tr>
<td></td>
<td>General Craft Supervisor ..................................................................... 3-7</td>
</tr>
<tr>
<td></td>
<td>Craft Supervisor .................................................................................... 3-8</td>
</tr>
<tr>
<td></td>
<td>Senior Safety Supervisor ..................................................................... 3-10</td>
</tr>
<tr>
<td></td>
<td>Safety Supervisor .................................................................................. 3-12</td>
</tr>
<tr>
<td></td>
<td>Safety Inspector .................................................................................... 3-13</td>
</tr>
<tr>
<td></td>
<td>EMT/Paramedic ......................................................................................... 3-15</td>
</tr>
<tr>
<td></td>
<td>Project Nurse ......................................................................................... 3-17</td>
</tr>
<tr>
<td>4</td>
<td>First Aid and Medical Services</td>
</tr>
<tr>
<td></td>
<td>Responsibility ......................................................................................... 4-1</td>
</tr>
<tr>
<td></td>
<td>First Aid Facilities .................................................................................. 4-1</td>
</tr>
<tr>
<td></td>
<td>First Aid Personnel .................................................................................. 4-2</td>
</tr>
<tr>
<td></td>
<td>Routine Transportation of Employees to the Doctor .................................. 4-2</td>
</tr>
<tr>
<td></td>
<td>Emergency Transportation ......................................................................... 4-2</td>
</tr>
<tr>
<td></td>
<td>Medical Services ....................................................................................... 4-3</td>
</tr>
<tr>
<td></td>
<td>Consulting Physician ................................................................................ 4-3</td>
</tr>
<tr>
<td></td>
<td>Medical Panel ........................................................................................... 4-3</td>
</tr>
<tr>
<td></td>
<td>Medical Directives .................................................................................... 4-3</td>
</tr>
<tr>
<td></td>
<td>First Aid Facilities for Employees of Contractors and Subcontractors .... 4-4</td>
</tr>
<tr>
<td></td>
<td>(Construction Company) as Prime Contractor .......................................... 4-4</td>
</tr>
<tr>
<td></td>
<td>(Construction Company) as Construction Manager .................................... 4-4</td>
</tr>
<tr>
<td></td>
<td>Employee Injury and Illness .................................................................... 4-4</td>
</tr>
<tr>
<td></td>
<td>Restricted Work ........................................................................................ 4-4</td>
</tr>
<tr>
<td></td>
<td>Employee Visits to Physician ................................................................... 4-5</td>
</tr>
<tr>
<td></td>
<td>Medical Authorization Treatment/Return to Work Authorization ................. 4-5</td>
</tr>
<tr>
<td></td>
<td>First Aid Authorization ........................................................................... 4-5</td>
</tr>
<tr>
<td></td>
<td>Non-Occupational Injuries and Illnesses .................................................. 4-5</td>
</tr>
<tr>
<td></td>
<td>Reporting of Non-Referred Medical Treatment ......................................... 4-6</td>
</tr>
<tr>
<td></td>
<td>First Aid Equipment and Supplies ............................................................ 4-6</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td><strong>4 First Aid and Medical Services (continued)</strong></td>
<td></td>
</tr>
<tr>
<td>Figures and Attachments</td>
<td>4-7</td>
</tr>
<tr>
<td>Hold Harmless Agreement</td>
<td>4-8</td>
</tr>
<tr>
<td>Treatment/Medical Authorization Form</td>
<td>4-9</td>
</tr>
<tr>
<td>First Aid Authorization (Supervisors Injury Referral Slip)</td>
<td>4-10</td>
</tr>
<tr>
<td>Letter of Contest for Questionable Medical Claims</td>
<td>4-11</td>
</tr>
<tr>
<td>Attachment 4-A – First Aid Medical Directives</td>
<td>4-12</td>
</tr>
<tr>
<td>Bloodborne Pathogens</td>
<td>4-46</td>
</tr>
<tr>
<td>Model Exposure Control Plan</td>
<td>4-48</td>
</tr>
<tr>
<td><strong>5 Investigating and Reporting Serious Accidents, Fatalities, and Major Incidents</strong></td>
<td></td>
</tr>
<tr>
<td>Serious Accidents</td>
<td>5-1</td>
</tr>
<tr>
<td>Reporting Serious Accidents</td>
<td>5-1</td>
</tr>
<tr>
<td>Investigation</td>
<td>5-1</td>
</tr>
<tr>
<td>Figures and Attachments</td>
<td>5-3</td>
</tr>
<tr>
<td>Accident Investigation Report</td>
<td>5-4</td>
</tr>
<tr>
<td>Photo Information Sheet</td>
<td>5-5</td>
</tr>
<tr>
<td>Statement of Witness Form</td>
<td>5-6</td>
</tr>
<tr>
<td><strong>6 Recordkeeping and Reporting Procedures</strong></td>
<td></td>
</tr>
<tr>
<td>First Aid Log</td>
<td>6-1</td>
</tr>
<tr>
<td>Medical Authorization - Treatment/Return to Work Authorization</td>
<td>6-1</td>
</tr>
<tr>
<td>Employer’s First Report of Injury</td>
<td>6-1</td>
</tr>
<tr>
<td>Supervisor’s Accident Investigation Report</td>
<td>6-2</td>
</tr>
<tr>
<td>OSHA Occupational Injury and Illness Forms</td>
<td>6-3</td>
</tr>
<tr>
<td>MSHA Reporting and Recording</td>
<td>6-3</td>
</tr>
<tr>
<td>Record Retention</td>
<td>6-5</td>
</tr>
<tr>
<td>Retention Records – 7 Years</td>
<td>6-5</td>
</tr>
<tr>
<td>Retention Records – 30 Years</td>
<td>6-6</td>
</tr>
<tr>
<td>Figures and Attachments</td>
<td>6-7</td>
</tr>
<tr>
<td>First Aid Log Form</td>
<td>6-8</td>
</tr>
<tr>
<td>Treatment/Medical Authorization Form</td>
<td>6-9</td>
</tr>
<tr>
<td>Accident Investigation Report</td>
<td>6-10</td>
</tr>
<tr>
<td>OSHA 300 Log</td>
<td>6-10</td>
</tr>
<tr>
<td>MSHA Form 7000-1 (Mine Accident, Injury and Illness Report)</td>
<td>6-12</td>
</tr>
<tr>
<td>MSHA Form 7000-1 (Instructions for Completing)</td>
<td>6-13</td>
</tr>
<tr>
<td>MSHA Form 7000-1 (Definitions)</td>
<td>6-15</td>
</tr>
<tr>
<td>MSHA Form 7000-2 (Quarterly Mine Employment and Coal Production Report)</td>
<td>6-17</td>
</tr>
<tr>
<td><strong>7 Safety Rules</strong></td>
<td></td>
</tr>
<tr>
<td>Discipline and Enforcement</td>
<td>7-1</td>
</tr>
<tr>
<td>Safety &amp; Accident Prevention Rules (Sample)</td>
<td>7-2</td>
</tr>
<tr>
<td>Discipline Procedure</td>
<td>7-4</td>
</tr>
<tr>
<td>Employee Warning Notice</td>
<td>7-5</td>
</tr>
</tbody>
</table>
# Safety Education

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Safety Education</td>
<td>8-1</td>
</tr>
<tr>
<td>OSHA Safety Requirements</td>
<td>8-1</td>
</tr>
<tr>
<td>MSHA Safety Training Requirements</td>
<td>8-1</td>
</tr>
<tr>
<td>New Hire Orientation of Manual and Non-Manual Employees</td>
<td>8-1</td>
</tr>
<tr>
<td>Safe Practices Booklet</td>
<td>8-1</td>
</tr>
<tr>
<td>First Aid</td>
<td>8-1</td>
</tr>
<tr>
<td>Pregnant Women</td>
<td>8-2</td>
</tr>
<tr>
<td>Toolbox Safety Meetings</td>
<td>8-2</td>
</tr>
<tr>
<td>Personal Protective Equipment</td>
<td>8-2</td>
</tr>
<tr>
<td>Reporting Unsafe Acts or Conditions</td>
<td>8-2</td>
</tr>
<tr>
<td>New Hire Orientation and General Safety Regulations</td>
<td>8-3</td>
</tr>
<tr>
<td>Safety Orientation for General Foreman/Foremen</td>
<td>8-4</td>
</tr>
<tr>
<td>Safe Work Areas</td>
<td>8-4</td>
</tr>
<tr>
<td>Safe Work Practices</td>
<td>8-4</td>
</tr>
<tr>
<td>Emergency Procedures</td>
<td>8-5</td>
</tr>
<tr>
<td>Accident Investigations</td>
<td>8-5</td>
</tr>
<tr>
<td>Toolbox Safety Meetings</td>
<td>8-5</td>
</tr>
<tr>
<td>General Foreman and Foremen’s Safety Meetings</td>
<td>8-6</td>
</tr>
<tr>
<td>Superintendent’s Safety Meetings</td>
<td>8-7</td>
</tr>
<tr>
<td>Safety Committee</td>
<td>8-8</td>
</tr>
<tr>
<td>Figures and Attachments</td>
<td>8-9</td>
</tr>
<tr>
<td>Training Session Report</td>
<td>8-10</td>
</tr>
<tr>
<td>Toolbox Safety Meeting Report</td>
<td>8-11</td>
</tr>
<tr>
<td>Project Safety Committee Meeting Report</td>
<td>8-13</td>
</tr>
</tbody>
</table>

# Contractor/Subcontractor Safety Plan

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 Contractor/Subcontractor Safety Plan</td>
<td>9-1</td>
</tr>
<tr>
<td>(Construction Company’s) Role and Responsibilities</td>
<td>9-1</td>
</tr>
<tr>
<td>Contractor/Subcontractor Obligations</td>
<td>9-2</td>
</tr>
<tr>
<td>Safety Obligations</td>
<td>9-2</td>
</tr>
<tr>
<td>Safety Program</td>
<td>9-2</td>
</tr>
<tr>
<td>Designation of Safety Representative</td>
<td>9-3</td>
</tr>
<tr>
<td>Recordkeeping and Reporting</td>
<td>9-3</td>
</tr>
<tr>
<td>Compliance with Safety Program</td>
<td>9-3</td>
</tr>
<tr>
<td>Non-Compliance with Safety, Health, or Fire Requirements</td>
<td>9-3</td>
</tr>
<tr>
<td>Failure to Correct Non-Conformance</td>
<td>9-4</td>
</tr>
<tr>
<td>Technical Service Agreements</td>
<td>9-4</td>
</tr>
<tr>
<td>Contractor/Subcontractor Requirement</td>
<td>9-5</td>
</tr>
<tr>
<td>Project Safety Requirements</td>
<td>9-5</td>
</tr>
<tr>
<td>New-Hire Safety Orientation Program</td>
<td>9-5</td>
</tr>
<tr>
<td>Weekly Toolbox Safety Meetings</td>
<td>9-6</td>
</tr>
<tr>
<td>Supervisors’ Safety Orientation</td>
<td>9-6</td>
</tr>
<tr>
<td>Contractor’s Safety Program</td>
<td>9-6</td>
</tr>
<tr>
<td>Safety Work Areas</td>
<td>9-7</td>
</tr>
<tr>
<td>Safe Work Practices</td>
<td>9-7</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>9 Contractor/Subcontractor Safety Plan (continued)</td>
<td>9-7</td>
</tr>
<tr>
<td>Supervising for Safety</td>
<td>9-7</td>
</tr>
<tr>
<td>Toolbox Meetings</td>
<td>9-7</td>
</tr>
<tr>
<td>Supervisor’s Safety Meetings</td>
<td>9-7</td>
</tr>
<tr>
<td>Emergency Procedures</td>
<td>9-7</td>
</tr>
<tr>
<td>Accident Investigations</td>
<td>9-8</td>
</tr>
<tr>
<td>First Aid</td>
<td>9-8</td>
</tr>
<tr>
<td>Fire Protection and Prevention</td>
<td>9-8</td>
</tr>
<tr>
<td>Incident Reporting</td>
<td>9-8</td>
</tr>
<tr>
<td>Safety Meetings</td>
<td>9-8</td>
</tr>
<tr>
<td>Safety Inspection</td>
<td>9-8</td>
</tr>
<tr>
<td>Barricades</td>
<td>9-9</td>
</tr>
<tr>
<td>Safety Signs</td>
<td>9-9</td>
</tr>
<tr>
<td>Scaffolds</td>
<td>9-9</td>
</tr>
<tr>
<td>Confined Spaces</td>
<td>9-9</td>
</tr>
<tr>
<td>Floor and Roof Openings</td>
<td>9-9</td>
</tr>
<tr>
<td>Respiratory</td>
<td>9-9</td>
</tr>
<tr>
<td>Hearing Protection</td>
<td>9-10</td>
</tr>
<tr>
<td>Crane Safety and Material Handling Program</td>
<td>9-10</td>
</tr>
<tr>
<td>Radiography</td>
<td>9-10</td>
</tr>
<tr>
<td>Occupational Health</td>
<td>9-10</td>
</tr>
<tr>
<td>First Aid</td>
<td>9-10</td>
</tr>
<tr>
<td>Employee Sanctions</td>
<td>9-10</td>
</tr>
<tr>
<td>Reports</td>
<td>9-10</td>
</tr>
<tr>
<td>Recordkeeping</td>
<td>9-11</td>
</tr>
<tr>
<td>Fire Protection and Prevention</td>
<td>9-11</td>
</tr>
<tr>
<td>General and Special Conditions</td>
<td>9-11</td>
</tr>
<tr>
<td>Figures and Attachments</td>
<td>9-12</td>
</tr>
<tr>
<td>Contractors Safety Program Checklist</td>
<td>9-13</td>
</tr>
<tr>
<td>Contractors/Subcontractors Monthly Summary of Personnel Injuries and Illnesses</td>
<td>9-14</td>
</tr>
<tr>
<td>Attachment 9-A – Publicity and Advertising (Contractor Duties and Responsibilities)</td>
<td>9-15</td>
</tr>
<tr>
<td>Attachment 9-B – Publicity and Advertising (Subcontractor Duties and Responsibilities)</td>
<td>9-16</td>
</tr>
<tr>
<td>Attachment 9-C – Safety and Security Programs (Contractors Duties and Responsibilities)</td>
<td>9-17</td>
</tr>
<tr>
<td>Attachment 9-D – Safety and Security Programs (Subcontractor Duties and Responsibilities)</td>
<td>9-19</td>
</tr>
</tbody>
</table>
## 10 Industrial Hygiene

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognition of Chemical and Physical Hazards</td>
<td>10-1</td>
</tr>
<tr>
<td>Airborne Contaminants</td>
<td>10-2</td>
</tr>
<tr>
<td>Toxic Materials</td>
<td>10-2</td>
</tr>
<tr>
<td>Solvents</td>
<td>10-2</td>
</tr>
<tr>
<td>Sampling</td>
<td>10-2</td>
</tr>
<tr>
<td>Maintenance and Calibration Records</td>
<td>10-5</td>
</tr>
<tr>
<td>Sampling Devices for Environmental Measurement</td>
<td>10-5</td>
</tr>
<tr>
<td>Occupational Hearing Conversation Program</td>
<td>10-6</td>
</tr>
<tr>
<td>Controls</td>
<td>10-6</td>
</tr>
<tr>
<td>Hearing Protection</td>
<td>10-6</td>
</tr>
<tr>
<td>Education and Training</td>
<td>10-7</td>
</tr>
<tr>
<td>Respiratory Protection Program</td>
<td>10-7</td>
</tr>
<tr>
<td>Administration of Responsibilities</td>
<td>10-7</td>
</tr>
<tr>
<td>Definitions</td>
<td>10-8</td>
</tr>
<tr>
<td>Work Area Surveillance</td>
<td>10-10</td>
</tr>
<tr>
<td>Respirator Selection Process</td>
<td>10-11</td>
</tr>
<tr>
<td>Medical Evaluation</td>
<td>10-13</td>
</tr>
<tr>
<td>Medical Determination</td>
<td>10-14</td>
</tr>
<tr>
<td>Selecting and Using a Respirator</td>
<td>10-14</td>
</tr>
<tr>
<td>Mechanical Filter Respirators</td>
<td>10-15</td>
</tr>
<tr>
<td>Chemical Cartridge Respirators</td>
<td>10-15</td>
</tr>
<tr>
<td>Air-Line Respirators</td>
<td>10-16</td>
</tr>
<tr>
<td>Training</td>
<td>10-17</td>
</tr>
<tr>
<td>Supervisor Training</td>
<td>10-18</td>
</tr>
<tr>
<td>Employee Instruction and Training</td>
<td>10-18</td>
</tr>
<tr>
<td>Negative Pressure Test</td>
<td>10-19</td>
</tr>
<tr>
<td>Positive Pressure Test</td>
<td>10-19</td>
</tr>
<tr>
<td>Banana Oil, Sucrose Water, or Irritant Smoke Test</td>
<td>10-19</td>
</tr>
<tr>
<td>Self-Contained Breathing Apparatus</td>
<td>10-20</td>
</tr>
<tr>
<td>SCBA Checklist System</td>
<td>10-21</td>
</tr>
<tr>
<td>Emergency Storage</td>
<td>10-21</td>
</tr>
<tr>
<td>Training</td>
<td>10-21</td>
</tr>
<tr>
<td>Inspections</td>
<td>10-22</td>
</tr>
<tr>
<td>Special Use Problems</td>
<td>10-23</td>
</tr>
<tr>
<td>Cold Weather Use of Respirator</td>
<td>10-23</td>
</tr>
<tr>
<td>Voice Communication</td>
<td>10-24</td>
</tr>
<tr>
<td>Maintenance and Cleaning</td>
<td>10-24</td>
</tr>
<tr>
<td>Inspection Procedures and Repair</td>
<td>10-24</td>
</tr>
<tr>
<td>Cleaning and Disinfecting</td>
<td>10-25</td>
</tr>
<tr>
<td>Storage</td>
<td>10-25</td>
</tr>
<tr>
<td>Appendices</td>
<td>10-26</td>
</tr>
</tbody>
</table>
## Section 10  Industrial Hygiene (continued)

<table>
<thead>
<tr>
<th>Figures and Attachments</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely Hazardous Chemicals Table</td>
<td>10-28</td>
</tr>
<tr>
<td>Material Safety Data Sheet</td>
<td>10-29</td>
</tr>
<tr>
<td>Conversion Table STPD to BTPS</td>
<td>10-31</td>
</tr>
<tr>
<td>Industrial Hygiene Monitoring Data Sheet</td>
<td>10-32</td>
</tr>
<tr>
<td>Respirator Care and Maintenance Record</td>
<td>10-33</td>
</tr>
<tr>
<td>Emergency Equipment Inspection Sheet</td>
<td>10-34</td>
</tr>
<tr>
<td>Respiratory Protection Education and Fit Testing Form</td>
<td>10-35</td>
</tr>
<tr>
<td>Respirator Usage List</td>
<td>10-36</td>
</tr>
<tr>
<td>Report of Medical Examination</td>
<td>10-37</td>
</tr>
<tr>
<td>Sample Letter Advising Physician's Evaluation of Fitness for Respirator</td>
<td>10-42</td>
</tr>
<tr>
<td>OSHA Respirator Medical Evaluation Questionnaire</td>
<td>10-43</td>
</tr>
<tr>
<td>Sample Respirator Card</td>
<td>10-51</td>
</tr>
<tr>
<td>SCBA Inspection Form</td>
<td>10-52</td>
</tr>
<tr>
<td>Hazardous Material Site Inventory Sheet</td>
<td>10-53</td>
</tr>
<tr>
<td>Respiratory Protection Program</td>
<td>10-54</td>
</tr>
</tbody>
</table>

## Section 11  Hazard Communication

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsibility</td>
<td>11-1</td>
</tr>
<tr>
<td>Procedure</td>
<td>11-1</td>
</tr>
<tr>
<td>Hazard Determination</td>
<td>11-1</td>
</tr>
<tr>
<td>Material Safety Data Sheets (MSDS)</td>
<td>11-1</td>
</tr>
<tr>
<td>Hazardous Material List</td>
<td>11-2</td>
</tr>
<tr>
<td>Labels and Other Forms of Warning</td>
<td>11-3</td>
</tr>
<tr>
<td>On-Site Subcontractors</td>
<td>11-3</td>
</tr>
<tr>
<td>Employee Information and Training</td>
<td>11-4</td>
</tr>
<tr>
<td>Hazardous Non-Routine Tasks</td>
<td>11-5</td>
</tr>
<tr>
<td>Figures and Attachments</td>
<td>11-6</td>
</tr>
<tr>
<td>Material Safety Data Sheet</td>
<td>11-7</td>
</tr>
<tr>
<td>Model Written Hazard Communication Program</td>
<td>11-9</td>
</tr>
</tbody>
</table>

## Section 12  Disaster Planning Evacuation

<table>
<thead>
<tr>
<th>Supervisory Control – Organization Functions and Responsibilities</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilities</td>
<td>12-1</td>
</tr>
<tr>
<td>Alarms</td>
<td>12-3</td>
</tr>
<tr>
<td>Assembly Areas</td>
<td>12-4</td>
</tr>
<tr>
<td>Security</td>
<td>12-4</td>
</tr>
<tr>
<td>Client's Evacuation Control Headquarters</td>
<td>12-4</td>
</tr>
<tr>
<td>Training</td>
<td>12-5</td>
</tr>
<tr>
<td>Thunderstorm Safety Procedure</td>
<td>12-6</td>
</tr>
<tr>
<td>Bomb Threat Procedure</td>
<td>12-7</td>
</tr>
<tr>
<td>General</td>
<td>12-7</td>
</tr>
<tr>
<td>Preparation/Planning</td>
<td>12-8</td>
</tr>
</tbody>
</table>
## 12 Disaster Planning Evacuation (continued)

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management – Evacuation Considerations</td>
<td>12-9</td>
</tr>
<tr>
<td>Instructions to Telephone Operator(s)</td>
<td>12-10</td>
</tr>
<tr>
<td>Bomb Threat Incident Report</td>
<td>12-11</td>
</tr>
<tr>
<td>Voice Characteristics</td>
<td>12-11</td>
</tr>
<tr>
<td>Background Noise</td>
<td>12-12</td>
</tr>
<tr>
<td>Hurricane Safety Procedure</td>
<td>12-13</td>
</tr>
<tr>
<td>Tornado Safety Procedure</td>
<td>12-16</td>
</tr>
<tr>
<td>Radiation Emergency Procedure</td>
<td>12-17</td>
</tr>
</tbody>
</table>

## 13 General Safety Rules for Construction

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clothing and Personal Protective Equipment</td>
<td>13-1</td>
</tr>
<tr>
<td>General</td>
<td>13-1</td>
</tr>
<tr>
<td>Housekeeping</td>
<td>13-1</td>
</tr>
<tr>
<td>Ladders</td>
<td>13-2</td>
</tr>
<tr>
<td>Wood Side Rails</td>
<td>13-2</td>
</tr>
<tr>
<td>Welding and Burning</td>
<td>13-4</td>
</tr>
<tr>
<td>Arc Welding</td>
<td>13-4</td>
</tr>
<tr>
<td>Storage and Use of Cylinders</td>
<td>13-5</td>
</tr>
<tr>
<td>Pressure-Reducing Regulators</td>
<td>13-6</td>
</tr>
<tr>
<td>Hose and Hose Connections</td>
<td>13-7</td>
</tr>
<tr>
<td>Maintenance, Use, and Storage of Tools</td>
<td>13-7</td>
</tr>
<tr>
<td>Scaffolds</td>
<td>13-7</td>
</tr>
<tr>
<td>General Requirements</td>
<td>13-7</td>
</tr>
<tr>
<td>Scaffold Construction</td>
<td>13-8</td>
</tr>
<tr>
<td>Supported Scaffolds</td>
<td>13-9</td>
</tr>
<tr>
<td>Suspension Scaffolds</td>
<td>13-9</td>
</tr>
<tr>
<td>Mobile Scaffolds</td>
<td>13-10</td>
</tr>
<tr>
<td>Access</td>
<td>13-10</td>
</tr>
<tr>
<td>Use</td>
<td>13-11</td>
</tr>
<tr>
<td>Training Requirements</td>
<td>13-12</td>
</tr>
<tr>
<td>Storing and Handling Material</td>
<td>13-13</td>
</tr>
<tr>
<td>Temporary Floors, Stairs, Railings, and Toe Boards</td>
<td>13-14</td>
</tr>
<tr>
<td>Temporary Flooring</td>
<td>13-14</td>
</tr>
<tr>
<td>Stairs and Stairwells</td>
<td>13-14</td>
</tr>
<tr>
<td>Standard Railings</td>
<td>13-15</td>
</tr>
<tr>
<td>Wood Railings</td>
<td>13-15</td>
</tr>
<tr>
<td>Pipe Railings</td>
<td>13-16</td>
</tr>
<tr>
<td>Structural Metal Railings</td>
<td>13-16</td>
</tr>
<tr>
<td>Toe Boards</td>
<td>13-16</td>
</tr>
<tr>
<td>Floor and Wall Openings</td>
<td>13-16</td>
</tr>
<tr>
<td>Open-Sided Floors, Platforms, and Runways</td>
<td>13-17</td>
</tr>
<tr>
<td>Hoist and Elevators</td>
<td>13-17</td>
</tr>
<tr>
<td>Inside Material Hoist Shaftways</td>
<td>13-17</td>
</tr>
<tr>
<td>Material Hoist Platforms</td>
<td>13-18</td>
</tr>
</tbody>
</table>
13 General Safety Rules for Construction (continued)
   Excavation, Trenching, and Shoring ....................................................... 13-18
   General ..................................................................................................... 13-18
   Derricks ..................................................................................................... 13-19
   Slings ............................................................................................................ 13-19
   Manila and Synthetic Fiber Rope ............................................................. 13-19
   Wire Rope ................................................................................................... 13-20
   Blasting ....................................................................................................... 13-20
   Powder-Actuated Tools ............................................................................. 13-20
   Temporary Wiring, Lighting, and Heating ................................................... 13-21
   Vehicle, Crane, and Cherry Picker Operation ............................................ 13-22

14 Fire Protection Requirements, Inspection, Control, And Use of Fire Extinguishers
   Types of Fire Extinguishers To Be Used .................................................... 14-1
   Fire Protection Requirements ................................................................... 14-1
   Inspection ................................................................................................... 14-1
   Use ............................................................................................................. 14-2
   General ....................................................................................................... 14-3
   How To Report A Fire ................................................................................ 14-3
   End of Workday Inspection of Construction Facilities ............................ 14-3
   Fire Extinguishers Inspection Monthly Report ........................................ 14-4
   Fire Extinguisher Inspection and Maintenance Plan ................................... 14-5

15 Fall Prevention and Protection
   Responsibility ........................................................................................... 15-1
   Pre-Task Instructions ................................................................................ 15-1
   Engineered Fall Protection/Constructability Best Practices ..................... 15-1
   General ..................................................................................................... 15-1
   Civil Department ..................................................................................... 15-2
   Structural Iron ......................................................................................... 15-2
   Electrical .................................................................................................. 15-3
   Procedures ................................................................................................ 15-3
   Fall Protection Devices ............................................................................. 15-5
   Primary Fall Protection Systems .............................................................. 15-5
   Personal Fall Arrest Systems .................................................................... 15-5
   Lifelines ..................................................................................................... 15-6
   Other Devices ........................................................................................... 15-7
   Safety Nets ............................................................................................... 15-7
   Lifeline Placement/Installation ............................................................... 15-7
   Horizontal Lifelines ................................................................................ 15-7
   Vertical Lifelines/Retractable Lifelines .................................................... 15-8
   Retractable Reel Lifelines ...................................................................... 15-8
15 Fall Prevention and Protection (continued)
Other Applications .................................................................................. 15-9
Ladders ..................................................................................................... 15-9
Temporary Work Platforms/Walkways....................................................... 15-9
Aerial Lifts .............................................................................................. 15-9
Spyder/Sky Climbers and Boatswain Chairs ............................................. 15-9
Crane Hoisted Personnel Baskets .............................................................. 15-9
Elevators ................................................................................................... 15-9
Skeletal Steel/Open Structures ................................................................ . 15-10
Permanent Structures/Stairs/Caged Ladders ............................................ 15-10
Structural Steel Erection ........................................................................... 15-11
Reinforcement Steel/Concrete Form Work .............................................. 15-11
Training Requirements .............................................................................. 15-12
Definitions ....................................................................................................... 15-13

16 Ladders and Stairways – Use and Inspection
Purpose .......................................................................................................... 16-1
General ........................................................................................................... 16-1
Stairways ........................................................................................................ 16-2
Stairrails and Handrails ................................................................................... 16-2
Ladders........................................................................................................... 16-3
Use of All Ladders (Including Job-Made Ladders) ........................................... 16-5
Inspection ....................................................................................................... 16-6
Glossary ......................................................................................................... 16-7
Ladder Inspection Checklist ............................................................................ 16-8

17 Construction Equipment – Control and Inspection
Responsibilities ............................................................................................... 17-1
Control ........................................................................................................... 17-2
Figures and Attachments .............................................................................. 17-3
Major Equipment Inspection Form (Forklift) ............................................... 17-4
Major Equipment Inspection Form (Lifting Crane) ..................................... 17-5
Crane Suspended Work Platforms ............................................................ 17-6
Purpose .......................................................................................................... 17-6
Scope ........................................................................................................... 17-6
Authorization ............................................................................................... 17-6
Training ......................................................................................................... 17-6
Permitting ...................................................................................................... 17-7
Pre-Lift Meeting ....................................................................................... 17-7
Use of Basket .............................................................................................. 17-8
Crane Hoisted Personnel Platform Permit .................................................. 17-9
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>18 Solvents, Flammable and Combustible Liquids</strong></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>18-1</td>
</tr>
<tr>
<td>Precautionary Measures</td>
<td>18-1</td>
</tr>
<tr>
<td>Flammability</td>
<td>18-1</td>
</tr>
<tr>
<td>Toxicity</td>
<td>18-1</td>
</tr>
<tr>
<td>Control of Flammable and Combustible Liquids (under 200 degree flashpoint)</td>
<td>18-2</td>
</tr>
<tr>
<td>Bulk Storage</td>
<td>18-2</td>
</tr>
<tr>
<td>Small Quantity Handling</td>
<td>18-2</td>
</tr>
<tr>
<td>Re-fueling Vehicles and Equipment</td>
<td>18-2</td>
</tr>
</tbody>
</table>

| **19 Safety Inspection Techniques** | |
| The Audit Committee | 19-1 |
| The Audit System (4 elements) | 19-1 |
| Pre-Audit Preparation | 19-1 |
| Conducting the Audit | 19-2 |
| Preparing the Audit Report | 19-2 |
| Classification | 19-3 |
| Unsafe Acts | 19-3 |
| Unsafe Conditions | 19-3 |
| Rule or Procedure Violation | 19-3 |
| Unsafe Practice | 19-3 |

| **20 Excavation and Digging Procedure** | |
| Definitions | 20-1 |
| Procedure | 20-1 |
| Safety Regulations | 20-2 |
| Pre-Excavation | 20-2 |
| Supervisor’s Responsibilities | 20-3 |
| Competent Person Responsibilities | 20-4 |
| Excavation Requirements | 20-4 |
| Sloping Requirements | 20-6 |
| Shoring Requirements | 20-7 |
| Timber Shoring | 20-7 |
| Pneumatic Shoring | 20-8 |
| Hydraulic Shoring | 20-8 |
| Shielding Requirements | 20-9 |
| Figures and Attachments | 20-10 |
| Excavation Permit | 20-11 |
| Soil Condition Inspection Report | 20-12 |
| Attachment 20-A – Excavating in Type A Soil | 20-13 |
| Attachment 20-B – Excavating in Type B Soil | 20-15 |
| Attachment 20-C – Excavating in Type C Soil | 20-17 |
| Attachment 20-D – Timber Shore Problem Sheet | 20-18 |
| Attachment 20-E – Hydraulic Shoring | 20-19 |
| Attachment 20-F – Shielding | 20-21 |
## Section 21 Lead Coated Surfaces Safety Procedure

| Lead Removal (Training Program Outline) | 21-2 |
| Lead Removal Training (Sample Program)  | 21-4 |
| Training                                 | 21-4 |
| Hazard Communication                     | 21-4 |
| Medical Examination and Surveillance     | 21-5 |
| Blood Lead Screening                     | 21-5 |
| Medical Removal                          | 21-6 |
| Air Monitoring                           | 21-7 |
| Respiratory Protection                   | 21-7 |
| Personal Protective Equipment            | 21-8 |
| Hygiene Practices and Facilities         | 21-8 |
| Blood Lead Screening                     | 21-5 |
| Medical Removal                          | 21-6 |
| Air Monitoring                           | 21-7 |
| Respiratory Protection                   | 21-7 |
| Personal Protective Equipment            | 21-8 |
| Hygiene Practices and Facilities         | 21-8 |
| Housekeeping and Maintenance             | 21-9 |
| Blood Lead Screening                     | 21-5 |
| Medical Removal                          | 21-6 |
| Air Monitoring                           | 21-7 |
| Respiratory Protection                   | 21-7 |
| Personal Protective Equipment            | 21-8 |
| Hygiene Practices and Facilities         | 21-8 |
| Blood Lead Screening                     | 21-5 |
| Medical Removal                          | 21-6 |
| Work Procedures                          | 21-11 |
| Before Work Starts                       | 21-11 |
| Lunch/Breaks                             | 21-11 |
| End of Shift                             | 21-12 |
| Employee/Crew Responsibilities           | 21-12 |
| Pre-Job Safety Planning                  | 21-13 |
| Lead Removal Job Safety Action Plan      | 21-14 |

## Section 22 Asbestos Procedures and Handling

<p>| Terms and Definitions                      | 22-1 |
| Four Major Classes of Asbestos Work Activities | 22-2 |
| Class I                                    | 22-2 |
| Exposure Assessment                        | 22-2 |
| Engineering Controls and Work Practices     | 22-3 |
| Negative Pressure Enclosure                | 22-3 |
| Glove Bag System                           | 22-4 |
| Negative Pressure Glove Bags               | 22-4 |
| Negative Pressure Glove Box Systems        | 22-4 |
| Water Spray Process System                 | 22-4 |
| Mini-Enclosure                             | 22-5 |
| Alternative Control Methods                | 22-5 |
| Respiratory Protection                     | 22-5 |
| Protective Clothing                        | 22-6 |
| Hygiene Facilities and Practices           | 22-6 |
| Greater Than 25 Linear Feet or 10 Square Feet | 22-6 |
| Less Than 25 Linear Feet or 10 Square Feet | 22-6 |
| Employee Information and Training          | 22-6 |</p>
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>22</strong> Asbestos Procedures and Handling (Continued)</td>
<td></td>
</tr>
<tr>
<td>Class II</td>
<td>22-7</td>
</tr>
<tr>
<td>Exposure Assessment</td>
<td>22-7</td>
</tr>
<tr>
<td>Engineering Controls and Work Practices</td>
<td>22-7</td>
</tr>
<tr>
<td>Indoor Class II Removal</td>
<td>22-7</td>
</tr>
<tr>
<td>Removal of Vinyl and Asphalt Flooring Material</td>
<td>22-8</td>
</tr>
<tr>
<td>Removal of Roofing Material</td>
<td>22-8</td>
</tr>
<tr>
<td>Removal of Transit Siding, Shingles, and Panels</td>
<td>22-9</td>
</tr>
<tr>
<td>Removal of ACM Gaskets</td>
<td>22-9</td>
</tr>
<tr>
<td>Alternative Control Methods</td>
<td>22-9</td>
</tr>
<tr>
<td>Respiratory Protection</td>
<td>22-10</td>
</tr>
<tr>
<td>Protective Clothing</td>
<td>22-10</td>
</tr>
<tr>
<td>Hygiene Facilities and Practices</td>
<td>22-10</td>
</tr>
<tr>
<td>Employee Information and Training</td>
<td>22-11</td>
</tr>
<tr>
<td>Class III</td>
<td>22-11</td>
</tr>
<tr>
<td>Exposure Assessment</td>
<td>22-11</td>
</tr>
<tr>
<td>Engineering Controls and Work Practices</td>
<td>22-11</td>
</tr>
<tr>
<td>Respiratory Protection</td>
<td>22-12</td>
</tr>
<tr>
<td>Protective Clothing</td>
<td>22-12</td>
</tr>
<tr>
<td>Hygiene Facilities and Practices</td>
<td>22-12</td>
</tr>
<tr>
<td>Employee Information and Training</td>
<td>22-13</td>
</tr>
<tr>
<td>Class IV</td>
<td>22-13</td>
</tr>
<tr>
<td>Exposure Assessment</td>
<td>22-13</td>
</tr>
<tr>
<td>Engineering Controls and Work Practices</td>
<td>22-13</td>
</tr>
<tr>
<td>Protective Clothing</td>
<td>22-13</td>
</tr>
<tr>
<td>Hygiene Facilities and Practices</td>
<td>22-14</td>
</tr>
<tr>
<td>Employee Information and Training</td>
<td>22-14</td>
</tr>
<tr>
<td>Multi-Employer Work Site</td>
<td>22-14</td>
</tr>
<tr>
<td>Employers Working Adjacent to Regulated Areas</td>
<td>22-14</td>
</tr>
<tr>
<td>General Contractors</td>
<td>22-14</td>
</tr>
<tr>
<td><strong>23</strong> Entry into Vessels and Confined Spaces</td>
<td></td>
</tr>
<tr>
<td>Definitions</td>
<td>23-1</td>
</tr>
<tr>
<td>Responsibilities</td>
<td>23-1</td>
</tr>
<tr>
<td>Procedures</td>
<td>23-2</td>
</tr>
<tr>
<td>Vessel Entry</td>
<td>23-2</td>
</tr>
<tr>
<td>Confined Space Entry Other Than Vessels</td>
<td>23-4</td>
</tr>
<tr>
<td>Figures and Attachments</td>
<td>23-6</td>
</tr>
<tr>
<td>Confined Space Entry Permit</td>
<td>23-7</td>
</tr>
</tbody>
</table>
## 24 Substance Abuse Procedures

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>24-1</td>
<td>24-2</td>
<td>24-2</td>
<td>24-2</td>
<td>24-3</td>
<td>24-4</td>
<td>24-4</td>
<td>24-5</td>
<td>24-5</td>
<td>24-7</td>
<td>24-7</td>
<td>24-9</td>
<td>24-10</td>
<td>24-10</td>
<td>24-11</td>
</tr>
</tbody>
</table>

## 25 Control of Hazardous Energy

<table>
<thead>
<tr>
<th>Application</th>
<th>Responsibilities</th>
<th>Superintendent/Supervisor</th>
<th>Front-line Supervisor</th>
<th>Requestor (Any Engineer or Subcontractor Trade)</th>
<th>Project Superintendent</th>
<th>Danger Tag Description – Use</th>
<th>Padlocks – Must Be Accompanied By a Danger Tag</th>
<th>Sequence of Events for Placing Danger Tags and Locks</th>
<th>Supervisor or Trade Supervisor(s)</th>
<th>Project Superintendent/Designee</th>
<th>Exceptions</th>
</tr>
</thead>
</table>

## 26 Department of Transportation

<table>
<thead>
<tr>
<th>Positive Test Results</th>
<th>Education and Training</th>
<th>Training</th>
<th>Department of Transportation (DOT) Regulations (53FR47003)</th>
<th>Federal Highway Administration (FHWA)</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>26-1</td>
<td>26-1</td>
<td>26-2</td>
<td>26-2</td>
<td>26-2</td>
<td>26-3</td>
</tr>
</tbody>
</table>
### 26 Department of Transportation (continued)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testing</td>
<td>26-4</td>
</tr>
<tr>
<td>Pre-Employment Testing</td>
<td>26-4</td>
</tr>
<tr>
<td>Post-Accident Testing</td>
<td>26-5</td>
</tr>
<tr>
<td>Random Testing</td>
<td>26-5</td>
</tr>
<tr>
<td>Reasonable Suspicion Testing</td>
<td>26-5</td>
</tr>
<tr>
<td>Return-to-Duty Testing</td>
<td>26-5</td>
</tr>
<tr>
<td>Five Drugs Which Require Screening Per DOT</td>
<td>26-6</td>
</tr>
<tr>
<td>Search/Seizure Procedures</td>
<td>26-7</td>
</tr>
<tr>
<td>Search/Evidence (Discrepancy) Documentation Form</td>
<td>26-9</td>
</tr>
<tr>
<td>Conducting Tests for Reasonable Cause</td>
<td>26-10</td>
</tr>
<tr>
<td>Behavior/Incident Documentation Form</td>
<td>26-12</td>
</tr>
<tr>
<td>Signs and Symptoms of DOT Prohibited Drugs</td>
<td>26-13</td>
</tr>
<tr>
<td>Marijuana</td>
<td>26-13</td>
</tr>
<tr>
<td>- Possible Indicators</td>
<td>26-13</td>
</tr>
<tr>
<td>- Effects on Driving</td>
<td>26-14</td>
</tr>
<tr>
<td>Cocaine</td>
<td>26-15</td>
</tr>
<tr>
<td>- Possible Indicators</td>
<td>26-15</td>
</tr>
<tr>
<td>- Effects on Driving</td>
<td>26-15</td>
</tr>
<tr>
<td>Amphetamines/Stimulants</td>
<td>26-16</td>
</tr>
<tr>
<td>- Possible Indicators</td>
<td>26-16</td>
</tr>
<tr>
<td>- Effects on Driving</td>
<td>26-17</td>
</tr>
<tr>
<td>Opiates</td>
<td>26-17</td>
</tr>
<tr>
<td>- Possible Indicators</td>
<td>26-17</td>
</tr>
<tr>
<td>- Effects on Driving</td>
<td>26-18</td>
</tr>
<tr>
<td>Phencyclidine (PCP)</td>
<td>26-18</td>
</tr>
<tr>
<td>- Possible Indicators</td>
<td>26-19</td>
</tr>
<tr>
<td>- Effects on Driving</td>
<td>26-19</td>
</tr>
<tr>
<td>Signs and Symptoms of Other Substances</td>
<td>26-20</td>
</tr>
<tr>
<td>Alcohol</td>
<td>26-20</td>
</tr>
<tr>
<td>- Possible Indicators</td>
<td>26-20</td>
</tr>
<tr>
<td>Depressants</td>
<td>26-21</td>
</tr>
<tr>
<td>- Possible Indicators</td>
<td>26-21</td>
</tr>
<tr>
<td>Prescription Drugs</td>
<td>26-21</td>
</tr>
<tr>
<td>- Possible Indicators</td>
<td>26-21</td>
</tr>
</tbody>
</table>

### 27 Environmental Safety & Health

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Description</td>
<td>27-1</td>
</tr>
<tr>
<td>Pre-Assessment</td>
<td>27-2</td>
</tr>
<tr>
<td>Site Map</td>
<td>27-2</td>
</tr>
<tr>
<td>Work Zones</td>
<td>27-2</td>
</tr>
<tr>
<td>Engineering Controls</td>
<td>27-2</td>
</tr>
<tr>
<td>Training</td>
<td>27-3</td>
</tr>
<tr>
<td>Permits</td>
<td>27-3</td>
</tr>
<tr>
<td>Personal Protective Equipment</td>
<td>27-4</td>
</tr>
</tbody>
</table>
27 Environmental Safety & Health (continued)
   Medical History and Examinations ................................................................. 27-5
   Medical Surveillance ...................................................................................... 27-5
   Inspections .................................................................................................... 27-5
   Air Monitoring .............................................................................................. 27-8
   Spill Prevention Plan .................................................................................... 27-9
   Procedure ...................................................................................................... 27-11

28 Fleet Safety Program
   General ............................................................................................................ 28-1
   Purpose .......................................................................................................... 28-1
   Scope ............................................................................................................. 28-1
   Definitions ....................................................................................................... 28-1
   Program Description ....................................................................................... 28-4
   Procedures ..................................................................................................... 28-4
   Vehicle Maintenance ...................................................................................... 28-6
   Qualifications for Drivers of Commercial Motor Vehicles ......................... 28-7
   Qualifications for Drivers of Small Vehicles (Cars, Passenger Vehicles, and Pickup Trucks) .............................................................. 28-8
   Motor Vehicle Report (MVR) ........................................................................ 28-8
   Driver Records and Corrective Actions ........................................................ 28-10
   Report Accidents, Driver's License Revocation, Suspension, and Restrictions ......................................................................................... 28-10
   Federal Motor Carrier Safety Administration ............................................. 28-11
   Cell Phone Usage and Distractions ............................................................... 28-13
   Fatigue ........................................................................................................... 28-14
   Driver Training ............................................................................................... 28-15
   Audits ............................................................................................................. 28-15
   Management Commitment .......................................................................... 28-15
   Use of Vehicles ............................................................................................. 28-16
   Securing Loads ............................................................................................. 28-16
   Resources ...................................................................................................... 28-16
   Figures and Attachments ............................................................................. 28-17
      Appendix A – Personal Vehicle Program .................................................. 28-18
      Appendix B – Motor Vehicle Record Release Form ................................ 28-20
      Appendix C – Fleet Safety Policy Statement ............................................. 28-21
      Appendix D – Criteria for Evaluating Motor Vehicle Records of Candidate Drivers ............................................................. 28-22
      Appendix E – Criteria for Evaluating Motor Vehicle Records of Current Drivers ............................................................ 28-23
      Appendix F – Fleet Safety Orientation Acknowledgment Form ............ 28-24
      Appendix G – Sample Driving Training Outline ...................................... 28-25
      Appendix H – Vehicle Usage Agreement .................................................... 28-26
      Appendix I – Driver Evaluation Form ........................................................ 28-27
      Appendix J – Road Test-Driver Performance Evaluation ....................... 28-28
      Appendix K – Vehicle Agreement Form ..................................................... 28-30
      Appendix L – Vehicle Safety Checklist ....................................................... 28-31
      Appendix M – ACIG Accident Information Kit .......................................... 28-32
### Section 29 Healthcare

- Risk Management ........................................................................................................... 29-1
- Infection Control Risk Assessment .............................................................................. 29-2
  - Conclusion .................................................................................................................. 29-5
- Dust Containment ........................................................................................................... 29-5
  - Materials Storage and Handling .............................................................................. 29-5
  - Materials .................................................................................................................... 29-5
  - Equipment ................................................................................................................... 29-6
  - Execution ..................................................................................................................... 29-6
  - General Erection ........................................................................................................ 29-7
  - Dust Partitions ............................................................................................................. 29-7
- HEPA Systems .................................................................................................................. 29-8
- Removal of Debris .......................................................................................................... 29-8
- Dust Control .................................................................................................................... 29-9
  - Special Cleaning Requirements ................................................................................. 29-9
  - Special Ductwork Requirements ................................................................................. 29-10
  - Filter Changes ............................................................................................................ 29-10
  - Field Environmental Monitoring ................................................................................. 29-11
  - Protection, Maintenance, and Removal ................................................................. 29-11
- Training and Education .................................................................................................. 29-11
  - Post Construction and Cleanup ................................................................................ 29-11
  - Infection and Biohazard Control ................................................................................ 29-12
  - NFPA 101 .................................................................................................................. 29-13
- Definitions ....................................................................................................................... 29-13
- Forms, Schedules, and Attachments .............................................................................. 29-15
  - Daily Interim Life Safety IC Monitoring Form .......................................................... 29-16
  - Infection Control Construction Permit ........................................................................ 29-17
  - Notification Checklist Form ....................................................................................... 29-18
  - Infection Control Risk Assessment ............................................................................ 29-19
  - Infection Control Education to Construction Workers ............................................. 29-20
  - Infection Control Monitoring Tool ............................................................................. 29-21
  - Checklist and Notification for Construction Projects ................................................ 29-22
  - Environment and Air Contamination Reduction Checklist ........................................ 29-23
  - Site Assessment Tool ................................................................................................. 29-24

### Section 30 Mold

- Mold ................................................................................................................................. 30-1
- Health Effects .................................................................................................................. 30-1
  - Mold Allergy ............................................................................................................... 30-1
  - Mold-Related Disorders .............................................................................................. 30-2
  - Stachybotrys Chartarum .............................................................................................. 30-2
- Mold Allergy .................................................................................................................... 30-2
- Mold Growth ................................................................................................................... 30-2
- Steps to Minimize the Dangers of Mold ...................................................................... 30-3
- Mold Remediation Policy .............................................................................................. 30-4
- Appendix .......................................................................................................................... 30-6
  - Mold Awareness and Quality Control Checklist ....................................................... 30-7
This manual establishes the minimum procedures that provide a safe and healthy working environment for all employees. These procedures apply to all processes performed on any construction project or operating facility that is managed, constructed, or operated by any employee.

The objectives are as follows:

- To provide guidelines for implementing a safety process that will direct safety and health programs on construction projects or operating facilities to maintain compliance with (Construction Company) or client/owner procedures and federal, state and/or local statutory requirements or regulations.

- To minimize occupational injury and illnesses, reduce equipment and property damage, and eliminate recurrences.

- To establish responsibility and accountability for the safety process on each construction project and operating facility.
It is the policy of (Construction Company) to meet its safety and health responsibilities and to constantly strive to maintain a safe working environment on all construction and maintenance projects and in all offices. The goal of the safety and health process is the prevention of accidents and injuries, the preservation of equipment and capital, and the achievement of safe working practices. In order to accomplish these goals, it is the (Construction Company) policy to:

1. Avoid accidents and other unplanned occurrences that result in injury to employees, interruption of production, or damage to equipment or property.

2. Take all action necessary in engineering, planning, designing, assigning and supervising work operations to establish and maintain a safe and healthy working environment on projects and in all facilities.

The procedures and directives in this manual are an integral part to the development of cost effective and site sensitive safety processes. It is the responsibility of each (Construction Company) manager and supervisor to effectively implement these plans.

These safety procedures shall be considered as minimum guidelines. There will be times when the requirements can and should be exceeded. All employees must be fully aware of his or her responsibility regarding the safety process in order to achieve an accident-free work environment.
**Safety Department**

The safety Department will act as the technical resource for field activities involving safety, health, fire and first aid with all (Construction Company) disciplines, divisions, departments, and other entities. The Department is responsible for developing project safety processes that serve as the working safety process on each construction project and operating facility. Each project process incorporates applicable safety and health laws and regulations.

The Safety Department also reviews and interprets the Occupational Safety and Health Act of 1970 (OSHA), the Mine Safety and Health Act of 1978 (MSHA), and state, local or other governmental agency safety and health regulations. To do so it maintains a working relationship with government representatives. Procedures to comply with the appropriate safety and health laws and regulations are developed by the Safety Department and disseminated to the field and departmental management. The Safety Department monitors and assists in the following areas to ensure adherence to OSHA, MSHA, federal, state, and local laws.

The Safety Department develops, implements, and administers safety and health training programs and provides input for job site safety meetings. It conducts safety surveys and participates in pre-job planning for project safety activities. It also coordinates the safety programs with client requirements and provides liaison with outside medical and insurance personnel.
POSITION DESCRIPTION
As Related to Safety

TITLE: Executive Management, including Presidents, Vice Presidents and all top managers.

SUMMARY: Executive Management shall demonstrate a positive attitude toward the achievement of a strong and effective safety process, with the objective of preventing personal injury, incidents, and property damage through their direct and active support.

Primary Safety Responsibilities:

1. Know the safety records of all field managers; use their knowledge in evaluation for promotion and collective action.

2. Communicate safety on job visits, in the same way managers communicate cost and schedules.

3. Include the discussion of safety issues at staff meetings and at other appropriate occasions to ensure proper communication.

4. Require detailed work planning to ensure that equipment or materials needed to perform work safely are at hand when required.

5. Request status reports on safety activities and progress within the organization.

6. Require that all newly hired employees receive the appropriate safety training to perform their jobs safely.

7. Make the necessary appropriations to meet the requirements of an effective safety process.

8. Continually enforce the safety process and discharge any employee willfully disregarding it.
POSITION DESCRIPTION
As Related to Safety

TITLE: Project Manager/Supervisor

SUMMARY: The Project Manager/Supervisor is responsible for establishing the project safety process. This program shall be according to company policies with the recommendations and assistance of management and the corporate safety department. Accident prevention procedures will be included in all activities by the application of sound safety planning. Specifically, Project Manager/Supervisor shall set the pace for the project safety process and be held responsible and accountable.

Primary Safety Responsibilities:

1. Assume full responsibility for all safety activities on the project and maintain liaison with corporate office.

2. Establish and direct the Project Safety Process.

3. Direct the activities of the Project Safety Committee as chairman.

4. Promote full support of the safety process by enthusiastically advocating the program.

5. Delegate responsibilities for various safety functions and authority for department and craft safety promotion.

6. Review and approve the project safety committee members.

7. Require that all employees comply with all safety and health procedures.

8. Establish the project safety rules with special attention to unusual operations and safety requirements of the client.

9. Maintain the disciplinary actions necessary to develop a good functioning safety program.

10. Ensure the accident investigations are investigated in a timely manner and all reports are distributed to the appropriate levels of management.

11. Make plans to have the employees, tools, materials, and equipment that are needed to do the project safely on hand prior to start of work.
POSITION DESCRIPTION
As Related to Safety

TITLE: Field Supervisor

SUMMARY: Field Supervisors are directly responsible for the control and activities of craftspersons on construction projects. They are the key role in the implementation and maintenance of an effective project safety process.

The standards for a good safety process are established by the Project Supervisor and Safety Representative. The actual performance of the safety process is a line organization function within the responsibility of the Field Supervisor. Direct contact by the Project Supervisor and Safety Representative with craftspersons and their attitude toward safety is a direct reflection on the ability of the Supervisor.

Field Supervisors cover a wide range of activities. They must plan their safety activity with the same care and effort as they do other portions of their work program such as cost, employment, and scheduling.

Some specific facets of their responsibility are as follows:

**Primary Safety Responsibilities:**

1. All new work and all new personnel should be reviewed for safety needs. Complete familiarization with safety requirements is an integral part of total responsibility.

2. Field construction supervision must continually monitor the safety attitudes of the General Craft Supervisor and Craft Supervisor, their responsibilities toward the safety of their personnel, and their participation in the project safety effort.

3. Require total compliance with all safety procedures during all phases of work.

4. Perform daily safety inspections and make appropriate corrections.

5. Conduct craft Supervisor safety meetings and other activities to perpetuate safety consciousness and awareness.
POSITION DESCRIPTION
As Related to Safety

TITLE: Field Supervisor (continued)

6. Ensure that all craft disciplines are properly trained in the appropriate safety procedures.

7. Make plans to have the employees, tools, materials, and equipment that are needed to do the project safely on hand prior to start of work.

8. Assist with accident investigations to ensure proper reporting and documentation, and then follow-up on accidents with prompt corrections to eliminate recurrences.

9. Establish safety as an active part of all work and take the required corrective action immediately within the responsibility of their position.

10. Coordinate their planning and work activities with other supervisory personnel performing work within, or adjacent to, their assigned work areas.
POSITION DESCRIPTION
As Related to Safety

TITLE: Office and Field Engineer

SUMMARY: The Office and Field Engineer, while not directly responsible for craftspersons, must work in conjunction with supervision to ensure the best possible safety conditions. Their responsibility extends to the contractor working under their direction.

Primary Safety Responsibilities:

1. Confirm the policy that new personnel, subcontractors, or vendors are made aware of the safety process and the need for individual cooperative compliance with the program.

2. Coordinate the activities of contractors in their area of responsibility and monitor activities to ensure that construction proceeds in accordance with applicable safety and health regulations.

3. Set a good example by giving every indication of personal interest and participation in the safety process. Keep up to date with site procedures and all safety activities.
POSITION DESCRIPTION
As Related to Safety

TITLE: General Craft Supervisor

SUMMARY: The General Craft Supervisor is responsible for the actions of the individual craft supervisors under their direction and therefore shall be responsible for relating the specific requirements of the safety program to them.

Primary Safety Responsibilities:

1. Determine that craftspersons are receiving adequate instruction covering their operations and that they understand these instructions through craft gang box meetings, training programs, testing, and meetings.

2. Discuss potential hazards of any given operation with their appropriate supervisor; then assure that the craft supervisor and craftsperson understand these precautions prior to starting the work activity.

3. Discuss with the Craft Supervisor those recommendations reported by the safety inspection and follow-up on required action as needed.

4. Assist with accident investigations to ensure proper reporting and documentation, and then follow-up on accidents with prompt corrections to eliminate recurrences.

5. Make safety inspections and corrections on a daily basis.

6. Require compliance with all safety regulations during all phases of the work.

7. Assist with accident investigations and report and correct the cause immediately.

8. Assure that machinery, equipment, and tools are maintained in a safe working condition and operated properly. Require proper inspection by responsible employees.
POSITION DESCRIPTION
As Related to Safety

TITLE: Craft Supervisor

SUMMARY: The Craft Supervisor is a key employee on the job with respect to accident prevention efforts. The Craft Supervisor is on the front line in directing work activity and controls employees who are potential accident victims. The Craft Supervisor should keep this in mind when supervising any crew of employees.

Primary Safety Responsibilities:

1. Check employees at the start of each work shift to be sure they are ready to perform their assigned tasks. Ensure that all employees have the appropriate PPE, i.e. glasses, hard hats, boots, etc. Craft Supervisors should also know each person well enough to recognize unusual symptoms of a physical, mental, or emotional nature that could interfere with an employee performing his or her work safely.

2. Continually screen all employees under their supervision for craft knowledge, safety knowledge, physical limitations, and current job knowledge. Correct any deficiencies promptly.

3. Give specific safety instructions as part of the job instructions for each job assignment, based on their first-hand knowledge of the tasks and the task environment. Also, ensure the employees understand the appropriate safety precautions before starting work.

4. Continually follow-up with project inspections to be certain that safety instructions are being followed and that personal protective equipment is in proper use.

5. Ensure participation of each crew member by requiring compliance with all safety regulations. Maintain the discipline necessary for the control of safe work habits.

6. Inspect at least once a week the hand tools used by the crew and check the equipment used during daily field work.

7. Ensure that personnel have the proper tools and equipment for each job, that such tools and equipment are used correctly, and that they are in good condition. If not, replace as needed and “tag-out” defective tools and equipment.
POSITION DESCRIPTION
As Related to Safety

TITLE: Craft Supervisor (continued)

8. The Safety Department will interface with the craft disciplines for appropriate safety literature for “toolbox” talks.

9. Check each person in the crew personally at the end of the work shift to determine if any injuries or illnesses have occurred. If there are any injuries, the Craft Supervisor will confirm that first-aid has been given according to project procedures.

10. Coordinate activities with other Craft Supervisors working in the immediate area to ensure that the work proceeds in accordance with applicable safety regulations.

11. Inform the supervisor of any unsafe acts or conditions for which they are responsible.
POSITION DESCRIPTION
As Related to Safety

TITLE: Senior Safety Supervisor

SUMMARY: Reports To: Project Manager
Corporate Safety Manager
Supervises: Safety Supervisor
Safety Inspector(s)
Project Fire Marshals
Project Nurses/EMT/Paramedics

Coordinates the safety, health, first aid, and fire prevention/protection on a project.

Primary Responsibilities:

1. Implement and coordinate safety, health, fire prevention/protection, and first-aid programs on the project.

2. Direct safety, health, fire protection, and first aid personnel on project.

3. Maintain current knowledge of all applicable OSHA, state or other governmental safety and health standards and regulations; ascertain that all safety personnel are appropriately knowledgeable; coordinate application and administration of requirements at project site.

4. Review daily surveys of (Construction Company) and contractor/subcontractor operations to ensure compliance with project safety process, OSHA, and state safety violations and initiate corrective action by responsible supervision.

5. Recommend cessation of work in unsafe areas for action by job supervision; in imminent danger situations, may stop work on own volition; stipulates necessary compliance to permit resumption of such work.

6. Maintain working relationship with project superintendent, supervisors, contractors/subcontractors, insurance carrier representatives, local medical services, community fire departments, OSHA and state safety agencies; provide liaison with client personnel on related matters.
POSITION DESCRIPTION
As Related to Safety

TITLE: Senior Safety Supervisor (continued)

7. Conduct accident investigations; analyze causes and formulate recommendations for corrective and preventive action.

8. Prepare injury reports; maintain required inspections; provide adequate documentation on safety inspections and occupational health monitoring activities.

9. Conduct supervisory safety meetings; participate in weekly planning and scheduling meetings.

10. Prepare job safety topics and subject material for “toolbox” safety meetings; review and audit such meetings to ensure effectiveness and employee understanding.

11. Implement and train all newly hired employees in the project safety orientation.

12. Advise safety supervisor and/or managerial personnel in a timely manner on project safety program progress or unresolved safety issues.
POSITION DESCRIPTION
As Related to Safety

TITLE: Safety Supervisor

SUMMARY: Reports To: Project Manager
          Senior Safety Supervisor
          Corporate Safety Manager

Supervises: Safety Inspector(s)
            Project Nurses/EMT/Paramedics
            Project Fire Marshals

Coordinates the safety, health, first aid, and fire prevention/protection on a project.

Primary Responsibilities:

1. May be assigned to a project with primary responsibility for implementing the safety, health, fire prevention, and first-aid programs; or may be assigned to a project for performance of duties as directed by the senior safety supervisor.

2. Conduct daily surveys of (Construction Company) and contractor/subcontractor operations to ensure compliance with project safety process, OSHA, and state safety standards and regulations. Identify safety violations and initiate corrective action by responsible supervision with appropriate follow-up.

3. Maintain current knowledge of all applicable OSHA, state or other governmental safety and health standards and regulations; ascertain that all safety personnel are appropriately knowledgeable; coordinate application and administration of such requirements at the project site.

4. Maintain working relationship with project supervision, contractors/subcontractors, insurance carrier representatives, local medical services, community fire departments, OSHA, and state safety agencies; provide liaison with client personnel on safety related matters.

5. Recommend cessation for work in unsafe areas for action by job supervision; in imminent danger situations, may stop work on own volition; stipulate necessary compliance to permit resumption of such work.
POSITION DESCRIPTION
As Related to Safety

TITLE: Safety Inspector

SUMMARY: Reports To: Project Manager
Senior Safety Supervisor
Safety Supervisor
Corporate Safety Manager

Supervises: Project Nurses/EMT/Paramedics

Coordinates safety, health, and first-aid on a project.

Primary Responsibilities:

1. May be assigned to a project with primary responsibility for implementing the safety, health, fire prevention, and first-aid programs; or may be assigned to a project for performance of duties as directed by the project safety supervisor.

2. Conduct daily surveys of (Construction Company) and contractor/subcontractor operations to ensure compliance with OSHA and state safety standards and regulations. Identify safety defects and initiate corrective action by responsible supervisor.

3. Maintain current knowledge of all applicable OSHA standards and regulations; maintain current knowledge of all applicable state or other governmental safety and health standards and regulations; ascertain that all safety personnel are appropriately knowledgeable; coordinate application and administration of such requirements at the project site.

4. Obtain interpretations of safety regulations and procedures from immediate safety supervisor.

5. Maintain working relationship with project supervisors and contractors/subcontractors, client personnel, insurance carrier representatives, local medical services, community fire departments, OSHA, and state safety agencies.

6. Recommend cessation of work in unsafe areas for action by job supervision; in imminent danger situations, may stop work on own volition; stipulate necessary compliance to permit resumption of such work.
POSITION DESCRIPTION
As Related to Safety

TITLE: Safety Inspector (continued)

7. Perform first-aid duties when required.

8. Conduct accident investigations; analyze causes and formulate recommendations for corrective preventive action.

9. Prepare injury reports; maintain required records; provide adequate documentation on safety inspections and occupational health monitoring activities.

10. Conduct supervisory safety meetings; participate in weekly planning and scheduling meetings.

11. Prepare job safety topics and subject material for “toolbox” safety meetings; review and audit such meetings to ensure effectiveness.

12. Conduct and/or supervise safety orientation of new hires.

13. Keep area safety supervisor advised in a timely manner of project safety program progress or unresolved safety issues.
POSITION DESCRIPTION
As Related to Safety

TITLE: EMT/Paramedic

SUMMARY: Performs first-aid duties in accordance with written standing orders prepared and approved by the local physician selected by the insurance carrier and safety department.

Reports To: Project Manager
            Corporate Safety Manager
            Senior Safety Supervisor
            Safety Supervisor
            Safety Inspector

Primary Responsibilities:

1. Render emergency treatment for serious injuries or illnesses until the employee can be placed under the care of a physician.

2. Provide basic first-aid treatment for non-serious injuries or illnesses.

3. Administer follow-up care to occupational injuries and illnesses.

4. Evaluate severity of injuries and illnesses; refer those of a serious nature to project physician.

5. Keep on file required injury documentation pertaining to employees and non-injury accidents.

6. Perform other required safety duties as assigned by Safety Supervisor.

7. Refer non-occupational injuries and illnesses to the employee’s own physician as the need is indicated.
POSITION DESCRIPTION
As Related to Safety

TITLE: EMT/Paramedic (continued)

8. Participate in the project safety process by:
   - Keeping informed of existing and/or potential health and accident hazards, toxic hazards, and occupational disease exposures.
   - Rendering safety suggestions during employee visits to first-aid.
   - Advising management of medical aspects of any employee injury or illness.
   - Providing training for project first-aid team.

9. Maintain first-aid records, individual employee medical records; prepare insurance reports, state injury reports, and comply with OSHA recordkeeping requirements.

10. Work closely with insurance carrier to ensure prompt handling of bona fide claims and question and have the proper documentation of nonwork-related injuries or illnesses.
POSITION DESCRIPTION
As Related to Safety

TITLE: Project Nurse

SUMMARY: Reports To: Project Manager
Corporate Safety Manager
Senior Safety Representative

Supervises: Field Nurse/Paramedics/EMT

Performs nursing duties in accordance with written procedures prepared and approved by the local physician selected by the insurance carrier and safety department; ensure that safety personnel perform accordingly.

Primary Responsibilities:

1. Provide emergency treatment for serious injuries or illnesses until the employee can be placed under the care of a physician; basic first-aid treatment for non-serious injuries or illnesses, evaluate severity of injuries and illnesses, and refer those of a serious nature to project physician.

2. Administer follow-up care to occupational injuries and illnesses as directed.

3. Refer non-occupational injuries and illnesses to the employee’s own physician as the need is indicated.

4. Participate in the project safety process by maintaining current knowledge of existing and/or potential accident hazards, toxic hazards and occupational disease exposures; render safety suggestions during employee visits to first-aid; advise management of pre-existing medical aspects of any employee injury or illness.

5. Provide training for the project first-aid team.

6. Maintain first-aid records, individual employee medical records; provide adequate documentation; prepare (Construction Company) and state injury reports; comply with OSHA record keeping requirements.

7. Maintain liaison with insurance carrier to ensure prompt handling of bona fide claims and question and have the proper documentation of nonwork-related injuries and illnesses.
This section describes the first aid, medical services, and emergency transportation provided for employees who incur occupational injuries or illnesses on (Construction Company) construction projects and operating facilities.

**RESPONSIBILITY**

The Safety Manager evaluates the first aid and medical services required to meet the safety and health needs of the project. The evaluation should be completed before the pre-job conference and any field activities take place.

The following items are considered in the evaluation:

- Estimated manhours to be expended and number of employees at peak project workload.
- Estimated duration of project.
- Availability of local qualified physicians who will come to the job site either on regularly scheduled visits or in an emergency, or be able to perform treatment at his or her office.
- Community medical resources in the area of such as clinics, hospitals, ambulance services, etc., their distance from the project, and their transportation and communication facilities.
- Potential exposure to health and safety hazards on the project; i.e., toxic hazards and occupational disease exposures and potential for the occurrence of explosions, fires, or other catastrophes.

**FIRST AID FACILITIES**

On Projects where they are required, first aid facilities should be of adequate size and have finished interiors, covered floors, toilet facilities, hot and cold running water, refrigeration, heating and air conditioning, and adequate illumination.

There should be a telephone with provisions for an off-site line when the job site switchboard is closed. An emergency notification system should be installed so medical personnel can summon assistance.

The system should include, at a minimum, two-way radio communications between medical and safety personnel so that response and contingency procedures can be coordinated.
First Aid Personnel

OSHA Section 1926.50(c) requires that a person has a valid certificate in first-aid training from the U.S. Bureau of Mines, American Red Cross, or equivalent training, and shall be available at the worksite to render first aid.

The safety manager and the senior [Construction Company] field representative will determine if a project nurse/field nurse/emergency medical technician/paramedic should be employed at the start of the project. When the work operation dictates, additional field nurses may be required to assist on the day shift or to cover additional shifts.

Routine Transportation of Employees to the Doctor

A suitable vehicle, designated as first aid transportation from the job site to the doctor’s office, clinic, or hospital must be available during working hours.

If the project is located near a community, a taxi service could be used for employees with minor injuries and illnesses.

Employees should not be permitted to provide their own transportation for the initial visit to the doctor for a job-related injury or illness.

Emergency Transportation

The proper handling of seriously ill or injured employees at the job site and their prompt dispatch to the hospital will, to a great extent, minimize confusion and offset the negative reaction which often occurs after a serious incident has occurred.

Before the project begins, the safety manager and the senior [Construction Company] field representative will jointly determine the best method of providing transportation from the job site.

The following guidelines should be followed for emergency transportation:

- A job site emergency vehicle should be furnished on all [Construction Company] projects located more than 10 minutes driving time from the nearest ambulance service.

- Arrangements must also be made for backup coverage. The designated firms should be asked to visit the job site too familiarize themselves with the layout of the project.

- At least two employees should be designated and qualified as drivers. However, under no circumstances will an employee be assigned to the emergency vehicles on a full-time basis.
In an emergency, if the qualified driver is not immediately available, the safety representative or their designee may drive.

While in transit the injured employee will be attended by a qualified person(s).

The hospital emergency room will be notified when the vehicle is dispatched. All available information regarding the nature and extent of the injury or illness should be given to the emergency room staff.

MEDICAL SERVICES

Consulting Physician

On all projects where (Construction Company) provides first-aid coverage, a consulting physician must be retained. As part of the pre-job survey, the workers compensation insurance claims adjuster will, upon request, provide a list of physicians who treat industrial injuries and illnesses.

The consulting physician must be willing to oversee the first aid and medical service program at the job site. He or she is expected to provide the written medical directives and nursing procedures that enable the first aid personnel to perform their duties. The physician should also be willing to visit the job site periodically to inspect the first aid facility, revise the medical directives as required, and attend to employees’ occupational medical problems.

Medical Panel

When the list of suggested physicians provided by the claims adjuster has been reviewed, a list of designated physicians and specialists should be prepared and posted. If possible, the list should contain several physicians for each specialty who are available in emergencies. This increases the possibility that the employee will use a designated physician, thus cutting down on both paper work and cost. If the list covers a broad geographical area, it better serves the needs of the employees, and is advantageous to (Construction Company).

Medical Directives

Specific instructions in the form of medical directives are given by the consulting physician to identify those situations that are beyond first aid treatment and require a physician’s attention. These directives should state the limitations of each level of medical personnel, i.e., registered nurse, licensed practical nurse, paramedic, E.M.T., where applicable.

Only those medications specified in the medical directives are dispensed through first aid. Under no circumstances will any other medications be allowed on the project, unless approved by the physician.
First Aid Facilities for Employees of Contractors and Subcontractors

Federal and state OSHA/MSHA statutes require each employer to provide adequate first aid treatment for their employees. On multi-employer sites, it is usually impractical and uneconomical for each contractor to set up and maintain its own first aid facility and arrange for medical transportation. Therefore, at the client’s direction, a single integrated medical facility and transportation system may be established.

(Constructor Company) as Prime Contractor

Where (Constructor Company) is the prime contractor, it may elect to make the medical facility and transportation services it provides for (Constructor Company) personnel available to the employees of (Constructor Company) subcontractors. If subcontractors use this service, they must sign the Hold Harmless Agreement (Figure 4-1). First aid coverage outside of normal working hours may be provided upon the request of the subcontractor’s authorized representative. Such requests should be made in advance and are contingent upon the availability of qualified personnel. The requesting subcontractor may be backcharged for this service. The subcontractor must provide transportation for routine off-site medical treatment following referral by (Constructor Company) first aid.

(Constructor Company) as Construction Manager

On construction management projects, the owner may contract with (Constructor Company) or third-party medical service to provide first aid/medical treatment for project employees. Contact the safety manager for guidance regarding development of a medical services contract where (Constructor Company) is construction manager.

EMPLOYEE INJURY AND ILLNESS

Restricted Work

Employees with job-related injury or illness may return to work provided the attending physician approves in writing, and provided that a regularly scheduled job exists which meets their current physical restrictions or limitations. Employees who are encumbered with casts, braces, etc., or who require crutches to move about will not be permitted to return to work unless a review of each individual case has been made by:

- The nurse, supervising safety representative, attending physician and, if necessary, the consulting physician.
- The safety representative, safety manager, and senior (Constructor Company) field representative.
Employee Visits to Physician

If employees are referred to an off-site physician by first aid or project supervisor on the day they are injured, they will be paid in accordance with the applicable labor agreement and the state work laws.

Payment for revisits are only made according to the applicable labor agreements. These agreements are determined by the labor relations manager in liaison with the safety manager.

Medical Authorization Treatment/Return to Work Authorization

Before receiving off-site medical treatment the employee must have a Medical Authorization Form (Figure 4-2) properly filled out. When an employee returns from the physician, hospital, or clinic, he or she must have the Treatment/Return to Work Authorization form with them.

First Aid Authorization

Before going to first aid, the employee must ask the foreman for a supervisor’s injury referral slip (Figure 4-3). The first aid personnel then fills in the date and time the employee was sent to first aid and returned to the job. If the employee needs attention immediately and his or her foreman is not in the area, someone else in the crew should be notified, and the employee should proceed to the first aid station.

Non-Occupational Injuries and Illnesses

Medical personnel must be alerted to injuries and illnesses that are non-occupational in nature. All circumstances surrounding the injury or illness should be recorded for future reference in case the employee files for workers compensation. Figure 4-4 is a sample form letter for contesting questionable medical cases on your project.

Employees with non-emergency injuries and illnesses that are clearly non-occupational, by employee admission or otherwise, should be advised that they will have to call the employee’s personal physician.

The routine dispensing of items such as aspirin and cold remedies must be prohibited. It places an unnecessary burden on personnel, is costly, and disrupts productivity.
**Reporting of Non-Referred Medical Treatment**

Employees who obtain outside medical treatment for a work-related injury or illness without being referred by the project management or the first aid personnel must advise the project management or the first aid personnel during the first scheduled workday following treatment. Failure to advise the company may result in denial of any claim for workers compensation benefits and may be cause for discharge. A notice stating this policy must be posted on all bulletin boards, change rooms, and other conspicuous locations. This policy must be stated during new hire orientation and referenced frequently in tool box safety meetings. Employees seeking advice regarding non work-related medical problems must be advised to contact their family physician.

**First Aid Equipment and Supplies**

The consulting physician, in conjunction with the safety manager, will determine the type and amount of equipment, instruments, and medical supplies which will be used on the job.
FIGURES
ATTACHMENTS
HOLD HARMLESS AGREEMENT

“(Construction Company) Entity” (Construction Company) is willing to make available its medical dispensary and the services of the (Construction Company) nurse (or qualified attendant) for the treatment of employees of _____________________ (“Subcontractor”) who may be injured or become ill while engaged in the construction of _________________________.

In consideration for the use of these facilities and services, the subcontractor agrees to the following:

1. If any of the subcontractor’s employees are transported to a physician or hospital by ambulance, the subcontractor will promptly pay the company or hospital rendering the service.

2. If any of the subcontractor’s employees requires the services of a physician or hospitalization, the subcontractor will promptly pay all charges directly to the attending physician and the admitting hospital.

3. The subcontractor will defend and indemnify, ________________________________ (“Owner”) and (Construction Company) their authorized representatives, successors or assigns, and all of their officers and employees against all claims arising from the use of these services by the subcontractor’s employees.

4. The subcontractor will undertake the defense of any claim against (Construction Company). Owner or their authorized representatives, successors, or assigns, or any of their officers and employees and will make any necessary payments settling the claim.

Date: ___________________________ Subcontractor:

____________________________________

By _____________________________

Title _____________________________

Figure 4-2. Hold Harmless Agreement
MEDICAL AUTHORIZATION

To: (Physician, Hospital, Clinic, etc.)

Please refer immediate medical treatment to employee named below.

<table>
<thead>
<tr>
<th>INSURED EMPLOYEE (Type/Print)</th>
<th>DATE OF INJURY</th>
<th>TIME OF INJURY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Name</td>
<td>First</td>
<td>Initial</td>
</tr>
<tr>
<td>DATE INJURY REPORTED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mo.</td>
<td>Day</td>
<td>Yr.</td>
</tr>
</tbody>
</table>

Supervisor ____________________________

Give a brief description of injury:

__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________

Please send your report and bill directly to:
(Insurance Carrier’s Name) ____________________________
(Mailing Address) ____________________________
By: ____________________________

--- TREATMENT/RETURN TO WORK AUTHORIZATION ---

TO PHYSICIAN: For our information, we request that the following information be completed and this form given to the employee for return to us. If the employee is not to return immediately to work, please mail this form to us.

TREATMENT RENDERED ____________________________

RETURNED TO: REGULAR WORK ____________________________ LIGHT DUTY ____________________________ * SENT HOME.

ESTIMATED TIME OFF FROM WORK ____________________________

DATE OF NEXT TREATMENT ____________________________

THE INJURY APPEARS TO BE: OCCUPATIONAL __________ NON OCCUPATIONAL __________

__________________________________________________________________________________

PHYSICIAN’S SIGNATURE ____________________________

* If light duty status, what are the limitations of the duty?

DATE ____________________________

TO EMPLOYEE: This section must be returned to jobsite office prior to returning to work.

Figure 4-1. Treatment/Medical Authorization Form
1. Report all injuries immediately to your Supervisor and First Aid.

2. You must notify your Supervisor and First Aid prior to leaving the job site, to obtain medical treatment off-site, for a work-related or non-work related injury or illness.

3. If you do not notify First Aid and obtain outside medical treatment for a work-related injury or illness, you must notify First Aid at the start of the next scheduled work day, or if unable to return to work, report your treatment by phoning the First Aid Department. Failure to do so may result in denial of your claim and/or discharge.

4. If you are treated off-site you will not be allowed to return to work until you present a full duty medical clearance form from the physician to First Aid.

Figure 4-3. First Aid Authorization (Supervisors Injury Referral Slip)
Gentlemen:

Preliminary investigation has revealed discrepancies in the reporting of the claim for this employee. This claim should be investigated further for the following reason(s).

_____ 1. The injury was not reported to the First Aid facility or the Supervisor when it occurred.

_____ 2. The injury was never reported to the First Aid facility or the Supervisor.

_____ 3. The employee’s description of the accident lacks credibility.

_____ 4. Our information is contrary to that given by the employee.

_____ 5. The physician’s medical findings have been contested by the employee.

_____ 6. Other: ________________________________________________

_____________________________________________________________

_____ 7. Remarks: ______________________________________________

_____________________________________________________________

Please contact _________________________________, Project Safety Supervisor, if you need any further assistance.

Very truly yours,

Senior (Construction Company)
Field Representative

cc: Safety Manager
   Employee File
   Field Construction Manager

Figure 4-4. Letter Of Contest For Questionable Medical Claims
Attachment 4-A
FIRST AID MEDICAL DIRECTIVES

A.1 Medical Directives

This section has been prepared as a guide for the physician and first aid personnel to develop medical directives and nursing procedures for a specific employee health service. The physician can also use it for medical instructions to the nurse and staff. Any instructions must be signed by the physician.

A medical directive is a written procedure, approved and assigned by the physician designated by management as responsible for the medical direction of the employee health program. Medical directives authorize the certified first aid personnel to give emergency care to employees for occupational and non-occupational injuries and illnesses. These directives should be developed jointly by the physician and nurse. Annual review, updating, and re-approval is recommended.
A.2  **Physician’s Signed Authorization For Medical Directives and Nursing Procedures***

Name and address of company or institution where these are to be used:

________________________________________________________________________

Name and address of physician providing the medication direction:

________________________________________________________________________

Name of (Construction Company) project nurse:

________________________________________________________________________

Other first aid personnel: ____________________________________________

________________________________________________________________________

_____________________________  ________________________________  M.D.
Date  Signature

Reviewed and updated:

_____________________________  ________________________________  M.D.
Date  Signature

_____________________________  ________________________________  M.D.
Date  Signature

* The medical directives and nursing procedures found in the “Occupational Health Guide for Medical and Nursing Personnel” are approved along with the enclosed additional directives and comments including limitations for non-nursing personnel such as paramedics, EMTs, etc.
A.3. **Medical Directives and Nursing Procedures for Emergency Care of Occupational and Non-Occupational Injuries and Illnesses**

**NOTE:** Refer to the Bloodborne Pathogens guidelines at the end of this section for proper precautions regarding medical treatment.

These general procedures apply to the following emergency needs.

- Control bleeding.
- Restore breathing and maintain open airway.
- Prevent and treat for shock (see Shock).
- Prevent infection and further injury.
- Provide the physician with as much history and information as possible about the injury or illness, including temperature, pulse, blood pressure, etc. Arrange for follow-up care and record all pertinent data.

Additional medical directives and/or specific medications:

---

**Abdominal Injuries, Acute**

Trauma to the external abdominal wall may result in injury to underlying organs, even with little evidence of damage. Until seen by a physician, obviously severe or suspected internal abdominal injuries should be cared for as follows:

External Abdominal Injury:

1. Rapidly check vital signs (pupils, pulse, respirations, and blood pressure).
2. Keep employee flat and quiet.
3. Control bleeding and cover open wound.
4. If internal organs are exposed, cover with sterile bandage to avoid contamination.
5. Do not remove penetrating object.
6. Give nothing by mouth.
7. Treat for shock and avoid unnecessary handling.
8. Arrange for emergency transportation and for contact with the employee’s personal physician.
Possible Internal Abdominal Injury:

1. Keep employee flat and quiet.
2. Give nothing by mouth.
3. Treat for shock and avoid unnecessary handling.
4. Arrange for emergency transportation and for contact with the employee’s personal physician.

Additional medical directives and/or specific medications: ____________________________
____________________________________________________________________________
____________________________________________________________________________

Abdominal Pain (See Gastro-Intestinal Complaints)

Abrasions (See Wounds)

Amputations

1. In case of partial or complete amputation, make every effort to preserve the severed part. Keep clean and preferably place in sterile gauze.
2. Control bleeding and prevent shock.
3. Support with splint if indicated.
4. Arrange for medical care and transportation.

Additional medical directives and/or specific medications: ____________________________
____________________________________________________________________________
____________________________________________________________________________

Artificial Respiration (See Asphyxiation)

Asphyxiation

1. Remove from exposure.
2. Immediately attempt to restore breathing.

Additional medical directives and/or specific medications: ____________________________
____________________________________________________________________________
____________________________________________________________________________
Asthma

1. Obtain written orders from employee’s personal physician stating what care and treatment should be given if the individual has an acute attack at work.

Additional medical directives and/or specific medications: ________________________________
________________________________________________________________________________
________________________________________________________________________________

Back Injuries and Back Complaints

Back injuries or complaints may or may not be occupational in origin.

The major responsibilities of the nurse when caring for these are:

1. Obtain an accurate and detailed history at the time the complaint is first reported. Record as much as possible in the employee’s own words.

2. Refer to a physician for any substantial complaints.

3. When complaints do not indicate the need for immediate medical evaluation, provide the following care:

   (a) Give mild analgesic. ________________________________

   This may be repeated: ________________________________
________________________________________________________________________________

   (b) Cold packs within 48 hours of onset.

4. Make arrangements for follow-up care.

Additional medical directives and/or specific medications: ______________________________
________________________________________________________________________________
________________________________________________________________________________

Bite Wounds

Animal Bites (Also see Puncture Wounds):

1. Wash thoroughly with soap and water as soon as possible.

2. Determine tetanus immunization status (see Wounds).

3. Explain the need for the animal to be kept under observation.
4. Arrange for reporting to health department and, if indicated, refer to physician.

Additional medical directives and/or specific medications: ______________________________________
____________________________________________________________________________________
____________________________________________________________________________________

**Insect Bites**

1. If past history indicates or if there is evidence of generalized allergic response, arrange for immediate medical care. ______________________________________
____________________________________________________________________________________
____________________________________________________________________________________

2. If there is no indication of allergic reaction:
   
   (a) Remove stinger if in the wound.
   
   (b) Wash thoroughly with soap and water.
   
   (c) Apply cold packs.
   
   (d) If indicated, arrange for medical care.

Additional medical directives and/or specific medications: ______________________________________
____________________________________________________________________________________
____________________________________________________________________________________

**Blisters, Friction**

1. Clean area with antiseptic soap and water.

2. Apply a dry dressing.

3. Do not open routinely.

4. Seek cause and attempt to correct.

5. Arrange for follow-up care.

Additional medical directives and/or specific medications: ______________________________________
____________________________________________________________________________________
____________________________________________________________________________________

**Bruises** (See Contusions)
Burns

Burns encountered in industry may be classified from the standpoint of etiology as: thermal, chemical, electrical, radiation, and ultraviolet ray.

Thermal Burns

Minor (First Degree)

1. Immerse in cold or ice water or apply ice packs immediately, until burning sensation does not reoccur on exposure to air.
2. Wash gently with surgical soap and water.
3. If, after above care, burn appears to be minor and superficial, care for as follows:

________________________________________________________________________
________________________________________________________________________

4. Determine individual's tetanus immunization status and follow procedure as outlined under Wounds.
5. Arrange for follow-up care.
6. If blisters appear as the result of a minor thermal burn, they may be cared for by the nurse as follows:

________________________________________________________________________
________________________________________________________________________

Major (2nd or 3rd Degree)

1. Cover burned area with sterile or clean material so that entire burn area and surrounding skin area is enclosed. Use antiseptic technique.
2. Do not remove clothing which adheres to burned tissue.
4. Arrange for emergency transportation and medical care.
5. Notify physician of employee's tetanus immunization status.

Additional medical directives and/or specific medications: ______________________________________
________________________________________________________________________
________________________________________________________________________
Chemical Burns of the Skin (Also see Eye Care):

Acid and alkali burns can be very deceptive and often result in third degree burns due to continuing action of the chemical long after exposure. Chemical burns may be very deep and tend to heal slowly.

Emergency procedures and facilities should be planned and their use clearly understood by the employees who may be exposed to chemical burns.

1. Immediate and continuous irrigation with large quantities of water is the first and most important emergency treatment for minor and chemical burns. It may be necessary to have showers located so that only a few seconds are spent in getting a burned person under a shower. Large scissors should be provided for the rapid removal of clothing soaked with the chemical.

2. After copious irrigation, the area may be neutralized as follows:
   (a) For acid burns
   (b) For alkali burns

3. For major chemical burns of the skin, after copious irrigation and neutralization, cover with sterile dressing and arrange for employee to be treated by a physician immediately.

4. For minor chemical burns of the skin, if, after the above procedures have been carried out, the chemical burn on the skin appears to be small in area and superficial, care for as follows:

Additional medical directives and/or specific medications:
**Electrical Burns**

Electrical burns may follow contact with a charged electric wire or electric apparatus, or may result from lightning. Electrical burns vary tremendously on type; some are diffuse and shallow, whereas others are localized and deep. It is impossible to determine from the appearance of the burn just how serious it is. First aid treatment of the burned area is usually of secondary importance to treating possible serious damage to the heart and respiratory center (see Electric Shock). The burned area should be cared for in the same way as a thermal burn.

Additional medical directives and/or specific medications: ________________________________  

__________________________________

**Radiation Burns**

Atomic Radiation: Burns caused by exposure to atomic radiation are thermal burns and may be cared for in the same way except that decontamination (i.e., removal of clothing and washing the body free of irradiated particles with water, etc.) must be accomplished without delay to prevent a severe or fatal burn.

X-Ray Radiation: Radiation burns due to overexposure to x-ray are slow in developing. Prevention and control, rather than emergency care, are the important factors here.

**Ultraviolet Ray Burns**

1. If extensive and/or severe, advise the employee to see his or her physician.

2. If burn is minor, care for as follows: ________________________________  

__________________________________

Additional medical directives and/or specific medications: ________________________________  

__________________________________

**Cardiac Emergencies**

Emergencies which could be caused by cardiac disorders present a wide range of signs and symptoms. Many of these stimulate other conditions. Signs and symptoms of possible cardiac disorders may range from mild to severe, and may appear gradually or suddenly.
Signs and Symptoms Which May Indicate Cardiac Disorders:

1. Pain, originating in the chest, or behind the sternum, and radiating into the left shoulder, down the left arm, up the neck, or to the back. This pain is steady and is not changed by movement of the body, by breathing, breath holding, or swallowing. This pain is frequently described by the individual as “pressing,” “squeezing,” or “choking.”

2. Indigestion

3. Cyanosis or pallor

4. Difficulty in breathing, often aggravated by lying down

5. Palpitations or some indefinable complaint in the chest

6. Weak, rapid, unusually slow, or irregular pulse

7. Weakness, faintness, pallor, cold, clammy skin, or shock

Severe Cardiac Emergencies Requiring Immediate Action:

1. Cardiac arrest

2. Serious respiratory distress

3. Sudden severe and/or persistent chest pain

4. Shock and coma of possible cardiac origin

Preparation for Meeting Cardiac Emergencies in the Occupational Setting:

1. Care of employee with known cardiac disorders which could produce an emergency at work:
   
   (a) With employee’s permission, confer with his or her physician about care in an emergency and obtain specific written anticipatory orders.
   
   (b) Explain to the employee the facilities and resources available in case he or she becomes ill at work.
   
   (c) Offer assistance to the employee and his or her physician in carrying out the physician’s recommendations at all times, to prevent acute illness.
2. Maintain emergency equipment for use in cardiac emergencies which can be readily transported. This should include equipment for:

(a) Maintaining an open airway
(b) Aspirating mucous
(c) Administering oxygen
(d) Administering intravenous fluids if medical facilities are distant

**Care of Cardiac Emergencies**

1. Cardiac arrest*

*See item 11, Joint Position Statement of Wisconsin Nurses Association and State Medical Society of Wisconsin Regarding Closed Chest Cardiac Resuscitation.

(a) Arrange for contact with a physician and rescue squad.
(b) Maintain open airway

Additional medical directives and/or specific medications:

2. Sudden, severe, or persistent pain; respiratory distress; shock and coma:

(a) Allow the person to assume the most comfortable position and provide as much fresh air as possible.

(b) Maintain open airway and breathing.

(c) Perform CPR, aspirate mucous, and administer oxygen.

(d) Contact, or arrange for contact with, the employee’s physician. If employee’s physician is not available and the situation indicates the need for immediate medical care, contact:
(e) Be prepared to provide the physician with a concise report of the patient’s condition, including the type of breathing; if pain is present, the site, intensity, radiation, and duration; and the pulse rate and blood pressure.

(f) See that there is a minimum amount of handling and moving.

(g) Reassure the patient and protect him or her as much as possible from the bustle and excitement which tend to converge in this type of critical situation.

Additional medical directives and/or specific medications:

Mild or Suspected Cardiac Disorders:

1. Obtain a careful history.
2. Check pulse, respiration, and blood pressure.
3. Arrange for immediate medical care and transportation if indicated. If immediate medical care is not indicated, counsel employee on the need for prompt medical evaluation.
4. Arrange for follow-up care.

Additional medical directives and/or specific medications:

Cerebral Vascular Incidents

1. Keep the employee quiet.
2. Move as little as possible.
3. Elevate the head and shoulders.
4. Maintain open airway, aspirate mucous, if necessary.

Additional medical directives and/or specific medications:
**Chest Wall Injuries**

Blow and compression injuries to the chest wall can result in conditions such as rib fractures, traumatic asphyxia hemothorax, massive atelectasis, and traumatic pneumothorax, as well as trauma to the heart muscle itself. The nurse should obtain an accurate history of how the injury occurred in order to aid the physician in determining the treatment.

1. Arrange for employee who has sustained a chest wall injury to be seen by a physician immediately.
2. See that the individual is handled with extra care to prevent further injury.
3. Prevent and treat shock.
4. Give oxygen if indicated. (Mask should be held in place with hand, rather than strapped on, to allow for quick removal, if necessary).
5. Cover open or sucking chest wounds immediately and make as air tight as possible with dressings and strappings. Place individual on injured side in either a prone or semi-prone position.

Additional medical directives and/or specific medications: ________________________________
______________________________
______________________________

**Common Cold** (See Respiratory Irritation or Infection)

**Communicable Diseases**

1. Be alert for signs and symptoms.
2. Prevent exposure to other personnel.
3. If suspicious, refer to a physician.

Additional medical directives and/or specific medications: ________________________________
______________________________
______________________________

**Contusions**

Minor Contusions:

1. Apply cold compresses or ice packs immediately and advise employee to apply periodically during the first 48 hours or until swelling is relieved.
2. Place the injured part at rest. Pressure bandages may assist in minimizing the swelling.
3. If soreness or disability persists, arrange for the employee to be seen by a physician.

Additional medical directives and/or specific medications: ______________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Major Contusions:
1. Apply cold compresses or ice packs immediately.
2. Arrange to have employee seen by a physician.

Additional medical directives and/or specific medications: ______________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Convulsive Disorders (Epileptic Seizures)
1. Employees with a history of convulsive seizures must bring a statement regarding their emergency care from a physician.
2. Encourage and help the employee with convulsive disorders to explain to his or her family and co-workers what to do if a convulsion occurs.
3. Explain that emergency care consists essentially of protecting the person from self-injury. Attempts should be made to gently restrain the individual.
4. Provide a safe object, i.e., a padded tongue depressor, to place between the teeth to prevent tongue injury.
5. Arrange for follow-up care.

Additional medical directives and/or specific medications: ______________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Cough (See Respiratory Irritation or Infection)
**Critical Illness or Death**

In case of critical illness or apparent death while on the premises of the employer, the following steps are suggested:

1. If indicated, call the rescue squad immediately.

2. Call the individual's personal physician; if this is not possible, use the company medical director, physician on call, or hospital emergency call list.

3. In the event of apparent death, or critical injury which may indicate impending death, extreme care must be taken in the method used to notify the family. This should be done by the highest ranking manager on site.

4. If death appears certain:
   
   (a) Leave the body as it was found if there is absolutely no possibility of resuscitation during transport.
   
   (b) Notify the appropriate law enforcement agency and the coroner’s office following consultation with the attending physician.
   
   (c) Take statements from co-workers or others present at the time of death and have these signed and dated while witnessed.
   
   (d) If it is necessary to make arrangements for the removal of the body, remove personal belongings in the presence of witnesses and make a list of all items. Sign the list in the presence of witnesses and have the witnesses also sign or initial this list.

Additional medical directives and/or specific medications: ____________________________

______________________________

______________________________

**Dermatitis**

Dermatitis related to occupational exposure is usually caused by:

Primary chemical irritants-including acids; alkalies; solvents, such as turpentine, gasoline, and kerosene; and certain oils and mineral greases, all of which may cause dermatitis in any individual and after only one or a few contacts.

Sensitizing agents – including various dyes, fabrics, rubber, insecticides, cosmetics, oils, resins, plants, woods, and sunlight, which may cause dermatitis in a few susceptible individuals following repeated contacts over a period of time.

1. Remove from source of irritation.
2. Obtain an accurate history of exposure; treatment, if any has been given; previous skin trouble; hobbies and work other than present employment.

3. Care for mild acute cases as follows:

4. Refer acute, severe, and persistent mild cases to a physician for diagnosis and treatment and determination of cause. Send a detailed history to the physician.

5. In collaboration with the employee’s physician and appropriate plant personnel, take steps to eliminate or reduce the exposure to irritants or sensitizing agents through:

   (a) Engineering controls.

   (b) Using personal protective equipment (PPE).

   (c) Stressing the importance of good personal hygiene in the prevention of dermatitis.

   (d) Scheduling follow-up examination as recommended by employee’s physician.

6. Confer with the employee’s physician and appropriate plant personnel about the employee’s return to work. Some employees may have to be relocated for their protection against possible exposure to irritants.

   Additional medical directives and/or specific medications:

   ____________________________

   ____________________________

**Diabetic Emergencies**

1. Help diabetic employees follow physician’s orders and recommendations.

2. Obtain written orders from the employee’s personal physician for giving emergency care.

Insulin Reaction:

Symptoms include headache, irritableness, hunger, cold, cold wet skin, trembling, blurring of vision, nervousness and fear, rapid pulse, and pallor.

1. Call employee’s physician immediately for orders.

2. Give orange juice, instant glucose, or other quick source of CHO.
3. Make arrangements for transportation to hospital, if indicated.

Additional medical directives and/or specific medications: __________________________
__________________________________________________________________________
__________________________________________________________________________

Impending Diabetic Coma:

Early symptoms include sugar in the urine, excessive thirst, urinary frequency, and craving food.

Late symptoms include digestion, vomiting, abdominal pain, extreme weakness, dry flushed skin, shortness of breath, sweet breath, rapid feeble pulse, and drowsiness to unconsciousness.

1. Call employees' physician.
2. Transport employee to hospital at once.

Additional medical directives and/or specific medications: __________________________
__________________________________________________________________________
__________________________________________________________________________

Diarrhea (See Gastro-Intestinal Complaints)

Dysmenorrhea

Simple dysmenorrhea not associated with unusual symptoms may be cared for as follows:

1. Encourage bed rest.
2. Apply heat to lower abdomen.
3. Give analgesic. __________________________
   This may be repeated. __________________________

If there is no relief, or if other signs and symptoms present themselves, refer employee to family physician.

Additional medical directives and/or specific medications: __________________________
__________________________________________________________________________
__________________________________________________________________________


**Earache**

1. Obtain history of duration, symptoms, temperature, etc.

2. If earache appears mild and uncomplicated:
   
   (a) Give analgesic. ..............................................................

   (b) Analgesic may be repeated. ....................................................

3. If earache persists, even though mild, encourage the employee to see a physician.

4. If there is any drainage from either ear canal, with or without associated pain, refer to a physician immediately.

Additional medical directives and/or specific medications: ..............................................................

**Ear Injuries** (Also see Head Injuries)

Bleeding from One or Both Ears Following Injury:

1. Consider as serious and see that individual is carefully handled.

2. Arrange for immediate medical care and transportation.

Additional medical directives and/or specific medications: ..............................................................

Foreign Bodies in Ear Canal:

Care for as follows: ..............................................................

Injury to External Ear:

Care for as any other part of body (see Wounds).

Additional medical directives and/or specific medications: ..............................................................
**Electric Shock**

Do not touch victim until he or she has first been removed from contact with the electric current. Shut off the current, if possible, or use a dry stick, rope, belt, or other nonmetallic dry object to free the victim from contact. As soon as victim is free from contact with current:

1. Identify where the current entered and exited the body. This will give some idea of the organs involved.
2. Maintain open airway and initiate artificial respiration if required.
3. Position for CPR.
4. Arrange for follow-up medical care and transport immediately.

Additional medical directives and/or specific medications: _______________________
____________________________________________________
____________________________________________________

**Epileptic Seizures** – (See Convulsive Disorders)

**Eye Emergencies**

Skill, precision, and extreme caution are essential in caring for eye injuries and eye conditions. Many eye injuries, irritations, and infections, which appear minor, may prove serious if not properly managed. Consult an eye specialist immediately.

Contact Lenses:

Wearing contact lenses on the jobsite is discouraged because of the susceptibility to injury from ultraviolet rays, chemicals, foreign bodies, etc. If a person is required to wear contact lenses, a release should be obtained from the employee’s personal physician, and the employee should be directed to wear additional eye protection at all times. Check state laws since some states prohibit wearing contact lenses on construction sites.

Basic Principles of Safe Nursing Care of Eyes:

1. Always try to obtain a history of an injury to an eye (with exception of chemical burns), before touching the eye(s). (See Perforating or Intraocular Foreign Body).
2. Use aseptic technique throughout all nursing procedures. Since viruses are often latent in tears and can be carried from one person to another via medicine droppers, medications, or hands, aseptic technique is absolutely essential. Even antibiotic drops may carry serious infection since no single antibiotic is effective against all strains of bacteria. (Refer to the end of this section for bloodborne precautions).
3. Keep all equipment for eye care separate from that used for other emergencies. Basic facilities, equipment, and supplies consist of:

(a) an area or small room, separate from that used for other emergency care (A small room in which the illumination can be controlled is desirable).

(b) Equipment and supplies should include:

- At least (1) one treatment table.
- An adjustable light on a stand.
- A magnifying lens on a binocular loupe, a lens on an adjustable fixture, or a hand lens (A binocular loupe is preferable).
- Flash light.
- A table or dressing tray large enough to hold the following:
  - A sterile lifter forceps in forceps container (If kept in antiseptic solution it should be relatively dry before using)
  - 1 sterile eye irrigation bulb and bottle
  - 1 kidney basin
  - Sterile cotton balls
  - Sterile applicators
  - Sterile 3 x 3 dressings and eye pads individually wrapped
  - Sterile medicine glasses and medicine droppers for individual use
  - Small dressing towels
  - Scotch tape and white adhesive tape, 2 inch

Drugs and solutions should be used only as provided for in written medical directives unless ordered specifically for an individual employee. Keep all solutions and medicines in glass-stoppered bottles without medicine droppers. All medications should be clearly labeled and dated, to provide for their systematic renewal replacement. Never use dropper bottles. Pour solution to be used into a separate sterile medicine glass, and discard any unused portion; never return to supply bottle. Medications ordered for individual employees should be marked with the employee’s name and kept on a separate tray.
4. If the situation permits, test and record the visual acuity before any treatment is started. Test both eyes separately. Always check and record visual acuity after care is completed.

5. Assemble materials, and adjust light before touching the employee’s eyes.

6. Wash hands thoroughly before touching the employee’s affected eye(s), immediately after completion of treatment, and during treatment if aseptic technique is broken.

**Eye Injuries and Eye Conditions**

Foreign Bodies – Corneal and Conjunctival Foreign Bodies:

1. Obtain an accurate history of the injury, including the type of work being performed and the tools being used. Save broken objects from which the offending particles may have come.

2. If history and symptoms do not indicate the need for immediate medical care, proceed as follows:

   (See Perforating or Intraocular Foreign Body)

   (a) If the situation permits, test the visual acuity before any treatment is given.

   (b) If there is foreign material on lids or around the eye, cleanse gently with warm sterile water. Do not re-wipe with soiled cotton, because of the danger of abrasive particles causing injury.

   (c) Attempt to locate the foreign body by inspecting the eye with the aid of a magnifying lens. (When opening the eyelids to inspect or irrigate an eye, manipulate the eyelids with fingers placed over the bony rim of the orbit. Never exert pressure on the eyeball.)

   (d) If the foreign body is on the cornea proceed as follows: __________________________

   __________________________

   (e) If the foreign body appears to be superficially lodged in the eye, attempt to remove by either one or both of the following methods:

   - Irrigate the eye with sterile water or sterile normal saline. Direct the stream to one side of the foreign body.

   - If irrigation is not successful do not attempt to remove, by any other method, unless specifically authorized by the sponsoring physician.
(f) Following removal inspect for “rust ring,” or injury to the cornea.

(g) If an eye anesthetic was used, before allowing the employee to return to work, make sure the employee is wearing safety glasses. Explain to the employee that the eye may be insensitive for a period of time, until the anesthetic is worn off.

(h) Arrange for follow-up care.

Additional medical directives and/or specific medications:

1. Do not attempt to pull the foreign body out.

2. Have the employee lie flat and quietly and avoid any movement of the face, head, or body.

3. Telephone physician immediately for treatment and/or transportation protocol.

4. Prevent pressure against the foreign body by supporting lids. If possible apply a loose dressing over the affected eye taking care not to disturb the object. The second eye should also be covered or closed to prevent movement.

5. Transport immediately.

Additional medical directives and/or specific medications:

Perforating or Intraocular Foreign Bodies (If history or symptoms indicate any of the following, care for as a possible perforating or intraocular foreign body.)

1. Employee reports that he or she:
   - Felt something hit the eye
   - Had a sudden impairment of vision
   - Had a sudden gush of tears

2. Change in the shape of the pupil

3. Conjunctival hemorrhage
Emergency Care

1. Do not attempt to handle the eye in any way, and especially do not avert the upper lid.

2. Lightly patch both eyes to keep the lids closed and arrange for immediate care by an ophthalmologist. Delay can be exceedingly serious.

Additional medical directives and/or specific medications:


Burns to the Eye

Chemical Eye Burns:

Chemicals may be acid, alkali, irritant, detergent, or radioactive in nature. While acid burns are usually instantaneous, alkaline burns are always progressive and, therefore, require more diligent treatment. Irritants and detergents do not produce burns, but can damage the eyes by inflammation or drawing water from the tissues. Chemicals may be in the form of vapor, dust particles, or liquid. The following immediate care is essential:

1. Arrange for immediate irrigations of the eye with copious amounts of water at the scene of the accident. (Start within seconds, if possible, and continue for 15 minutes).

2. Following thorough irrigation at the scene of the accident, arrange for employee to be brought to the health service and proceed as follows:
   (a) Instill topical anesthetic. _________________________________
   _________________________________
   _________________________________

   (b) Irrigate again with water for 20 minutes by the clock, making sure that all parts of the eye have been thoroughly irrigated.

3. Arrange for medical care immediately.

Additional medical directives and/or specific medications:


Flesh Burns (Actinic Conjunctivitis):

The symptoms are acute pain, photophobia, inflammation, swelling, and marked tearing. Involvement of only one eye is extremely infrequent.

1. Anesthetize by instilling. 
2. Apply ice compresses.
3. Inspect eye for a foreign body.
4. Refer to physician if needed.
5. See that employees wear adequate eye protective equipment.
6. Arrange for follow-up care.

Additional medical directives and/or specific medications:

Contusions to the Eye

A variety of non-penetrating ocular injuries can result from a blow directly to the eye, indirectly to the bony orbit, or from an air blast or explosion. A contusion can produce an insignificant subconjunctival hemorrhage, a simple “black eye,” or a serious disruption of intraocular contents with a resulting loss of vision.

1. Obtain a history of injury.
2. Apply cold compresses immediately.
3. If indicated, arrange for immediate medical care.
4. Arrange for follow-up care.

Additional medical directives and/or specific medications:
**Laceration of Eyelids**

1. Obtain a history of injury.

2. Apply ____________________________

3. Carefully save all tags of skin. Place them in a moist sterile gauze. Place in plastic bags, and cover with protected cold pack to prevent freezing of the tissue. (Because of the rich blood supply to the eye, it may be possible for the physician to use the tags in repairing the eyelid).


5. Transport immediately.

Additional medical directives and/or specific medications:

**Inflammation or Infection of Eyes**

1. Obtain a history of the eye complaint.

2. Explain to employee the danger of spreading the infection.


4. Arrange for follow-up care.

Additional medical directives and/or specific medications:

**Fainting**

1. Have employee lie down with the head even with or lower than the body.

2. Provide as much fresh air as possible.

3. Loosen clothing.

4. Allow patient to inhale aromatic spirits of ammonia.

5. Check pulse and blood pressure.
6. If employee is unconscious longer than a few minutes or exhibits unusual symptoms, arrange for immediate medical care.

Additional medical directives and/or specific medications:

________________________________________________________________________

**Fractures and Dislocations**

1. Immobilize the part before moving the employee.

2. If a compound fracture, control the bleeding and prevent contamination.

3. Treat any shock.

4. Apply cold or ice packs to the area.

5. Arrange for immediate medical care.

Additional medical directives and/or specific medications:

________________________________________________________________________

________________________________________________________________________

**Frostbite**

1. Restore circulation and temperature of the frozen part gradually by immersing it in water which is close to body temperature. (Do not apply direct heat, such as hot water bottle, heat lamps, or direct cold, such as snow or ice). Do not massage or rub vigorously.

2. When the part is rewarmed the person may be encouraged to exercise it.

3. Following the above, care for as follows: ________________________________

   ____________________________________________________________

   ____________________________________________________________

Additional medical directives and/or specific medications:

________________________________________________________________________

________________________________________________________________________

**Gastrointestinal Complaints**

Gastrointestinal upsets and complaints can be an indication of serious illness. For example, indigestion could be related to cardiac disorder. Carefully evaluate each case. Employees who have recurring gastrointestinal symptoms should not be given repeated medication; they should be encouraged to see their personal physician.
Recognition should also be given to the fact that gastrointestinal complaints could be related to exposure to toxic substances.

1. Obtain a careful history.

2. If history and symptoms indicate that this is a simple gastrointestinal upset, for which a physician would not ordinarily be consulted, the following medication may be given to enable the employee to complete the day’s work:

   (a) Indigestion: Give ________________________________________________
       ________________________________________________
       This may be repeated _________________________________________
       ________________________________________________

   (b) Diarrhea: Give ________________________________________________
       ________________________________________________
       This may be repeated _________________________________________
       ________________________________________________

Headache

In industrial workers, headache may be caused by exposure to toxic substances on the job.

Listed below are substances which can cause headache:

_______________________________________________

1. Obtain careful history.

2. If indicated, take T.P.R. If temperature is ___ or more, worker should be urged to go home and to consult his or her personal physician. ________________________________
   ________________________________________________

3. When history or symptoms indicate, take blood pressure. Compare with previous blood pressure readings on employee’s health record and if indicated, counsel employee to check with his or her personal physician.

4. When history and symptoms indicate that headache, as far as nurse can determine, is uncomplicated, give _________________________________________
   ________________________________________________
   This may be repeated _________________________________________
   ________________________________________________
5. The employee who frequently complains of headache and comes to the nurse for palliative treatment should be encouraged to talk out his or her problems. When medical care is indicated, he or she should be encouraged to see a personal physician.

Additional medical directives and/or specific medications:

Head Injuries

If unconsciousness occurs, even momentarily, consider the person to have suffered a possible head injury.

1. Call or arrange to have a physician called.

2. See that the person is at absolute rest. Usually it is best to keep him or her lying down with the head slightly elevated.

3. Maintain an open airway.

4. Observe whether or not there is bleeding from the ears, nose, or mouth; the degree of consciousness; the color; the pulse, respiration, blood pressure; and the size, dilation, and symmetry of pupils.

5. Control bleeding by direct pressure to wounds. Use caution when applying pressure over a possible skull fracture site.

6. Apply ice cap or cold compresses to the head.

7. Give no stimulants or sedatives.

8. Give oxygen if indicated.

9. Give physician as complete a history of injury as possible.

Additional medical directives and/or specific medications:

Heart Emergencies (See Cardiac Emergencies)
Heat Emergencies (Heat Exhaustion, Heat Stroke, and Heat Cramps)

Heat Exhaustion:

The symptoms are pale clammy skin, rapid weak pulse, weakness, headache, nausea, dizziness, and possibly severe cramps in abdomen and legs.

1. Move to cool place, but protect from chilling.
2. Keep lying down.
3. Give fluids, as indicated.
4. Arrange for follow-up care.

Additional medical directives and/or specific medications:

Heat Stroke:

The symptoms are flushed, hot skin, strong rapid pulse, and unconsciousness.

1. Move to a cool place.
2. Keep lying down with head elevated.
3. Apply cold packs to head.
4. Cool body by sponging with cool water.
5. Arrange for follow-up care.

Additional medical directives and/or specific medications:

Hernia Emergencies

Symptoms which would indicate a possible traumatic or strangulated hernia are:

1. Most hernias appear as a swelling in the groin.
2. The pain may be severe.
3. The swelling may disappear when the individual lies on his or her back.
Emergency Care

1. Lay the individual on his or her back.
2. Apply cold compresses on the hernia area.
3. Contact physician for orders.
4. Record details regarding the exact muscular effort the employee was performing when he or she first felt subjective symptoms. Record this in the employee's own words in quotation marks.

Additional medical directives and/or specific medications:

Lacerations (See Wounds)

Nosebleed

1. Spontaneous nosebleed may be cared for by the application of cold packs and pinching the sides of the nose against the septum, to apply pressure to the vessel.
2. Keep the person sitting erect and loosen the collar if it tends to constrict the neck.
3. Advise the person not to breathe or blow through the nose for an hour or two after bleeding has stopped.
4. Bear in mind that certain occupational exposures are manifested by nasal damage and bleeding.
5. If the bleeding does not stop within 10 to 15 minutes, arrange for medical care.
6. Under no circumstances have the employee tilt his or her head back, as this will result in blood going down into the stomach.

Additional medical directives and/or specific medications:

Puncture Wounds (See Wounds)

Respiratory Irritation or Infection

1. Obtain history.
2. Take T.P.R.
3. Check into the possibility of occupational exposure to substances which produce respiratory irritation.

4. If indicated, refer for immediate medical care.

5. If condition, as far as nurse can determine, is mild, the following medication may be given:
   
   (a) Common cold symptoms
   
   This may be repeated

   (b) Cough

   This may be repeated

6. Advise employee on how to avoid spreading infection to co-workers and family.

7. Counsel employee regarding rest, diet, and fluids.

8. Arrange for follow-up care.

Additional medical directives and/or specific medications:

Resuscitation (See Asphyxiation)

Shock

Some degree of shock is present with every injury of any consequence and may follow even minor accidents. The same emergency measures apply to both prevention and treatment.

The symptoms are:

1. Weakness and faintness

2. Pale, moist, and cool skin

3. Rapid and weak pulse

4. Low blood pressure

5. Nausea and vomiting
Prevention and emergency care is as follows:

1. Give emergency care for the underlying cause and maintain an open airway.

2. Keep the person lying down with feet elevated and head low. Do not lower head and elevate feet (a) in cases of head injury, (b) if breathing difficult is thereby increased, or (c) if person complains of pain when it is attempted.

3. Maintain body warmth without overheating.

4. Give oxygen if indicated.

5. Offer fluids only if patient is fully conscious.

6. Arrange for medical care and transportation.

7. Be ready to inform physician of blood pressure readings, pulse, etc.

Additional medical directives and/or specific medications:

---

**Sore Throat** (See Respiratory Irritation or Infection)

**Splinters and Slivers**

1. Cleanse area with surgical soap and water.

2. Inspect carefully to evaluate the depth imbedded, and size.

3. Determine tetanus immunization status in all cases of splinters and slivers, the same as for puncture wounds (see Puncture Wounds).

   (a) Small, Superficial Splinters and Slivers:

   - If careful inspection indicates that sliver or splinter is small and lodged superficially under the skin, attempt to remove aseptically.

   (b) Large, or Imbedded Splinters or Slivers:

   - If sliver or splinter appears to be other than superficially lodged under the skin, refer to physician.

4. Arrange for follow-up care.

Additional medical directives and/or specific medications:

---
Sprains and Strains

1. Obtain careful history of injury.
2. Rest and/or elevate the injured part, and apply cold.
3. Arrange for medical evaluation.

Additional medical directives and/or specific medications:

Toothache

1. If there is a cavity, pack with oil of cloves.
2. Give ___________________________ for temporary relief of pain.
3. Advise employee to see his or her dentist.

Additional medical directives and/or specific medications:

Wounds

Wounds seen by the occupational health nurse can usually be classified as severe, moderately severe, or superficial. Any break in the skin involves the risk of infection and contamination with tetanus organisms. In caring for wounds always give consideration to the employee's immunization status against tetanus (see the section immunization, below.)

Severe or Moderately Severe Wounds:

1. If there is obvious or suspected involvement of deep structures (nerves, tendons, and muscles), imbedded foreign material, wounds with jagged or torn edges, persistent bleeding, contaminated wounds, or wounds about the head and face, immediately refer the person to a physician.
2. If bleeding is severe, activate measures to control bleeding.
3. Apply sterile dressing, and protect the wound.
4. Arrange for immediate medical care and transportation.
5. Immobilize the damaged area, if indicated.

Additional medical directives and/or specific medications:

______________________________________________________________

**Tetanus Immunization Status in Relation to Care of Superficial Wounds:**

In caring for superficial wounds, determine individual's tetanus immunization status and proceed as follows:

1. **No Active Immunization Against Tetanus**
   
   Refer to physician for evaluation all individuals with superficial wounds, who have never received basic tetanus immunization. ______________________________________
   
2. **Previously Immunized Individuals:**
   
   (a) Refer to, or consult with physician regarding all individuals with superficial wounds who have received basic tetanus immunization but have not had a tetanus toxoid booster during the past ___ years.
   
   ______________________________________
   
   (b) Individuals with superficial wounds who have received basic immunization against tetanus and have had a tetanus toxoid booster within the past ___ years generally need no booster shot as a part of the immediate handling of the wound.
   
   ______________________________________
**BLOODBORNE PATHOGENS**

Occupational Exposures to Blood or Other Potentially Infectious Materials

**Definitions:**

**Blood** – human blood, human blood components, and products from human blood.

**Bloodborne Pathogens** - pathogenic microorganisms present in human blood which can cause disease in humans. These pathogens include, but are not limited to: hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

**Contaminated** - the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

**Engineering Controls** - controls (i.e., sharps disposal containers, self-sheathing needles) that isolate or remove the bloodborne pathogens hazard from the workplace.

**Occupational Exposure** - reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee’s duties.

**Parenteral** - piercing mucous membranes or the skin barrier through such events as needlesticks, human bites, cuts, and abrasions.

**Exposure Control Plan:**

Each employer having employee(s) with occupational exposure shall establish a written Exposure Control Plan to eliminate or minimize employee exposure.

Engineering and work practice controls shall be used to eliminate or minimize employee exposure.

Employers shall provide hand washing facilities which are readily accessible to employees.

Contaminated needles and other contaminated sharps shall not be bent, recapped, or removed. Shearing or breaking of contaminated needles is prohibited.

Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure.
Personal Protective Equipment:

Employers shall provide at no cost to employees gloves, gowns, coats, face shields, masks, eye protection, mouthpieces, and all appropriate PPE to perform first-aid treatment.

All PPE shall be removed by medical personnel prior to leaving the work area. After it is removed it shall be placed in an appropriately designated area or container for storage, washing, decontamination, or disposal.

Housekeeping:

All equipment and environmental working surfaces shall be cleaned and decontaminated after contact with blood or other potentially infectious materials. Contaminated sharps shall be discarded immediately or as soon as is feasible in containers that are: closable, puncture resistant, leakproof, labeled, or color-coded.

Hepatitis B Vaccination:

Hepatitis B vaccination shall be made available after the employee has received the required training and within 10 working days of initial assignment. Employees who decline the vaccination must sign and date the declination acknowledgement form.

Information and Training:

Training of all employees who can be exposed to bloodborne pathogens shall be provided at the time of initial assignment to tasks where occupational exposure may take place. Annual training for all employees shall be provided within one year of their previous training.

Recordkeeping:

All medical records shall be maintained at least the duration of employment plus 30 years. All medical records are strictly confidential information and should be treated as such.
MODEL EXPOSURE CONTROL PLAN

The Model Exposure Control Plan is intended to serve as an employer guide to the OSHA Bloodborne Pathogens standard. A central component of the requirements of the standard is the development of an exposure control plan (ECP).

The intent of this model is to provide employers with an easy-to-use format for developing a written exposure control plan. Employers will need to adjust or adapt the model for their specific use.

The information contained in this publication is not considered a substitute for the Act or any provisions of OSHA standards. It provides general guidance on a particular standard-related topic, but for specific compliance requirements.

POLICY

The (Facility Name) is committed to providing a safe and healthful work environment for our entire staff. In pursuit of this endeavor, the following exposure control plan (ECP) is provided to eliminate or minimize occupational exposure to bloodborne pathogens in accordance with OSHA standard 29 CFR 1910.1030, "Occupational Exposure to Bloodborne Pathogens."

The ECP is a key document to assist our firm in implementing and ensuring compliance with the standard, thereby protecting our employees. This ECP includes:

- Determination of employee exposure
- Implementation of various methods of exposure control, including:
  - Universal precautions
  - Engineering and work practice controls
  - Personal protective equipment
  - Housekeeping
- Hepatitis B vaccination
- Post-exposure evaluation and follow-up
- Communication of hazards to employees and training
- Recordkeeping
- Procedures for evaluating circumstances surrounding an exposure incident

The methods of implementation of these elements of the standard are discussed in the subsequent pages of this ECP.
PROGRAM ADMINISTRATION

- 

(Name of responsible person or department) ____________________________ is (are) responsible for the implementation of the ECP. __________ (Name of responsible person or department) ____________________________ will maintain, review, and update the ECP at least annually, and whenever necessary to include new or modified tasks and procedures. Contact location/phone number: ____________________________

Those employees who are determined to have occupational exposure to blood or other potentially infectious materials (OPIM) must comply with the procedures and work practices outlined in this ECP.

- 

(Name of responsible person or department) ____________________________ will maintain and provide all necessary personal protective equipment (PPE), engineering controls (e.g., sharps containers), labels, and red bags as required by the standard. __________ (Name of responsible person or department) ____________________________ will ensure that adequate supplies of the aforementioned equipment are available in the appropriate sizes. Contact location/phone number: ____________________________

- 

(Name of responsible person or department) ____________________________ will be responsible for ensuring that all medical actions required are performed and that appropriate employee health and OSHA records are maintained. Contact location/phone number: ____________________________

- 

(Name of responsible person or department) ____________________________ will be responsible for training, documentation of training, and making the written ECP available to employees, OSHA, and NIOSH representatives. Contact location/phone number: ____________________________

EMPLOYEE EXPOSURE DETERMINATION

The following is a list of all job classifications at our establishment in which all employees have occupational exposure:

<table>
<thead>
<tr>
<th>JOB TITLE</th>
<th>DEPARTMENT/LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Example: Phlebotomists)</td>
<td>(Clinical Lab)</td>
</tr>
</tbody>
</table>

The following is a list of job classifications in which some employees at our establishment have occupational exposure. Included is a list of tasks and procedures, or groups of closely related tasks and procedures, in which occupational exposure may occur for these individuals:

<table>
<thead>
<tr>
<th>JOB TITLE</th>
<th>DEPARTMENT/LOCATION</th>
<th>TASK/PROCEDURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: Housekeeper</td>
<td>Environmental Services</td>
<td>Handling Regulated Waste</td>
</tr>
</tbody>
</table>
Part-time, temporary, contract and per diem employees are covered by the standard. How the provisions of the standard will be met for these employees should be described in the ECP.

METHODS OF IMPLEMENTATION AND CONTROL

Universal Precautions

All employees will utilize universal precautions.

Exposure Control Plan

Employees covered by the bloodborne pathogens standard receive an explanation of this ECP during their initial training session. It will also be reviewed in their annual refresher training. All employees have an opportunity to review this plan at any time during their work shifts by contacting (Name of responsible person or department). If requested, we will provide an employee with a copy of the ECP free of charge and within 15 days of the request.

(Name of responsible person or department) is responsible for reviewing and updating the ECP annually or more frequently if necessary to reflect any new or modified tasks and procedures, which affect occupational exposure, and to reflect new or revised employee positions with occupational exposure.

Engineering Controls and Work Practices

Engineering controls and work practice controls will be used to prevent or minimize exposure to bloodborne pathogens. The specific engineering controls and work practice controls used are listed below:

- (For example: glass capillary tubes in the clinical laboratory, outpatient clinics, and pediatric units)

- Sharps disposal containers are inspected and maintained or replaced by (Name of responsible person or department) every (list frequency) or whenever necessary to prevent overfilling.

This facility identifies the need for changes in engineering control and work practices through (Examples: Review of OSHA records, employee interviews, committee activities, etc.)

We evaluate needed procedures or new products by (Describe the process)

The following staff is involved in this process: (Describe how employees will be involved)
(Name of responsible person or department) will ensure effective implementation of these recommendations.

Personal Protective Equipment (PPE)

PPE is provided to our employees at no cost to them. Training is provided by (Name of responsible person or department) in the use of the appropriate PPE for the tasks or procedures employees will perform.

The types of PPE available to employees are as follows:

(Ex., gloves, eye protection, etc.)

PPE is located (List location) and may be obtained through (Name of responsible person or department) (Specify how employees are to obtain PPE, and who is responsible for ensuring that it is available.)

All employees using PPE must observe the following precautions:

- Wash hands immediately or as soon as feasible after removal of gloves or other PPE.
- Remove PPE after it becomes contaminated, and before leaving the work area.
- Used PPE may be disposed of in (List appropriate containers for storage, laundering, decontamination, or disposal.)
- Wear appropriate gloves when it can be reasonably anticipated that there may be hand contact with blood or OPIM, and when handling or touching contaminated items or surfaces; replace gloves if torn, punctured, contaminated, or if their ability to function as a barrier is compromised.
- Utility gloves may be decontaminated for reuse if their integrity is not compromised; discard utility gloves if they show signs of cracking, peeling, tearing, puncturing, or deterioration.
- Never wash or decontaminate disposable gloves for reuse.
- Wear appropriate face and eye protection when splashes, sprays, spatters, or droplets of blood or OPIM pose a hazard to the eye, nose, or mouth.
- Remove immediately or as soon as feasible any garment contaminated by blood or OPIM, in such a way as to avoid contact with the outer surface.
The procedure for handling used PPE is as follows: *(may refer to specific agency procedure by title or number and last date of review)*

(For example, how and where to decontaminate face shields, eye protection, resuscitation equipment)

**Housekeeping**

*Regulated waste* is placed in containers which are closable, constructed to contain all contents and prevent leakage, appropriately labeled or color-coded (see *Labels*), and closed prior to removal to prevent spillage or protrusion of contents during handling.

The procedure for handling *sharps disposal containers* is: *(may refer to specific agency procedure by title or number and last date of review)*

The procedure for handling *other regulated waste* is: *(may refer to specific agency procedure by title or number and last date of review)*

*Contaminated sharps* are discarded immediately or as soon as possible in containers that are closable, puncture-resistant, leak proof on sides and bottoms, and labeled or color-coded appropriately. Sharps disposal containers are available at ____________(*must be easily accessible and as close as feasible to the immediate area where sharps are used*).

*Bins and pails* (e.g., wash or emesis basins) are cleaned and decontaminated as soon as feasible after visible contamination.

*Broken glassware*, which may be contaminated, is picked up using mechanical means, such as a brush and dustpan.

**Laundry**

This company will launder the following contaminated articles:

_________________________________________  _______________________________________

_________________________________________  _______________________________________

*Laundering will be performed by*  *(Name of responsible person or department)*

_________________________________________  at *(time and/or location)*.
The following laundering requirements must be met:

- handle contaminated laundry as little as possible, with minimal agitation
- place wet contaminated laundry in leak-proof, labeled or color-coded containers before transport. Use (red or yellow biohazard bags.)
- wear the following PPE when handling and/or sorting contaminated laundry: (List appropriate PPE)

Labels

The following labeling method(s) is used in this facility:

<table>
<thead>
<tr>
<th>EQUIPMENT TO BE LABELED</th>
<th>LABEL TYPE (size, color, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(e.g., specimens, contaminated laundry, etc.)</td>
<td>(red bag, biohazard label, etc.)</td>
</tr>
</tbody>
</table>

(Name of responsible person or department) will ensure warning labels are affixed or red bags are used as required if regulated waste or contaminated equipment is brought into the facility. Employees are to notify ______________________ if they discover regulated waste containers, refrigerators containing blood or OPIM, contaminated equipment, etc. without proper labels.

HEPATITIS B VACCINATION

(Name of responsible person or department) will provide training to employees on hepatitis B vaccinations, addressing the safety, benefits, efficacy, methods of administration, and availability.

The hepatitis B vaccination series is available at no cost after training and within 10 days of initial assignment to employees identified in the exposure determination section of this plan. Vaccination is encouraged unless: 1) documentation exists that the employee has previously received the series, 2) antibody testing reveals that the employee is immune, or 3) medical evaluation shows that vaccination is contraindicated.

However, if an employee chooses to decline vaccination, the employee must sign a declination form. Employees who decline may request and obtain the vaccination at a later date at no cost. Documentation of refusal of the vaccination is kept at (List location or person responsible for this recordkeeping).

Vaccination will be provided by (List Health care Professional who is responsible for this part of the plan) at (location).

Following hepatitis B vaccinations, the health care professional's Written Opinion will be limited to whether the employee requires the hepatitis vaccine, and whether the vaccine was administered.
POST-EXPOSURE EVALUATION AND FOLLOW-UP

Should an exposure incident occur, contact ___(Name of responsible person)___ at the following number:_____________________________.

An immediately available confidential medical evaluation and follow-up will be conducted by (Licensed health care professional). Following the initial first aid (clean the wound, flush eyes or other mucous membrane, etc.), the following activities will be performed:

- Document the routes of exposure and how the exposure occurred.
- Identify and document the source individual (unless the employer can establish that identification is infeasible or prohibited by state or local law).
- Obtain consent and make arrangements to have the source individual tested as soon as possible to determine HIV, HCV, and HBV infectivity; document that the source individual's test results were conveyed to the employee's health care provider.
- If the source individual is already known to be HIV, HCV and/or HBV positive, new testing need not be performed.
- Assure that the exposed employee is provided with the source individual's test results and with information about applicable disclosure laws and regulations concerning the identity and infectious status of the source individual (e.g., laws protecting confidentiality).
- After obtaining consent, collect exposed employee's blood as soon as feasible after exposure incident, and test blood for HBV and HIV serological status.
- If the employee does not give consent for HIV serological testing during collection of blood for baseline testing, preserve the baseline blood sample for at least 90 days; if the exposed employee elects to have the baseline sample tested during this waiting period, perform testing as soon as feasible.

ADMINISTRATION OF POST-EXPOSURE EVALUATION AND FOLLOW-UP

(Name of responsible person or department)________________________ ensures that health care professional(s) responsible for employee's hepatitis B vaccination and post-exposure evaluation and follow-up are given a copy of OSHA's bloodborne pathogens standard.

(Name of responsible person or department)_____________________ ensures that the health care professional evaluating an employee after an exposure incident receives the following:

- a description of the employee's job duties relevant to the exposure incident
- route(s) of exposure
- circumstances of exposure
- if possible, results of the source individual's blood test
- relevant employee medical records, including vaccination status
(Name of responsible person or department) provides the employee with a copy of the evaluating health care professional's written opinion within 15 days after completion of the evaluation.

PROCEDURES FOR EVALUATING THE CIRCUMSTANCES SURROUNDING AN EXPOSURE INCIDENT

(Name of responsible person or department) will review the circumstances of all exposure incidents to determine:

- engineering controls in use at the time
- work practices followed
- a description of the device being used
- protective equipment or clothing that was used at the time of the exposure incident (gloves, eye shields, etc.)
- location of the incident (O.R., E.R., patient room, etc.)
- procedure being performed when the incident occurred
- employee's training

If it is determined that revisions need to be made, (Responsible person or department) will ensure that appropriate changes are made to this ECP. (Changes may include an evaluation of safer devices, adding employees to the exposure determination list, etc.)

EMPLOYEE TRAINING

All employees who have occupational exposure to bloodborne pathogens receive training conducted by (Name of responsible person or department). (Attach a brief description of their qualifications.)

All employees who have occupational exposure to bloodborne pathogens receive training on the epidemiology, symptoms, and transmission of bloodborne pathogen diseases. In addition, the training program covers, at a minimum, the following elements:

- a copy and explanation of the standard
- an explanation of our ECP and how to obtain a copy
- an explanation of methods to recognize tasks and other activities that may involve exposure to blood and OPIM, including what constitutes an exposure incident
- an explanation of the use and limitations of engineering controls, work practices, and PPE
- an explanation of the types, uses, location, removal, handling, decontamination, and disposal of PPE
- an explanation of the basis for PPE selection
- information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine will be offered free of charge

- information on the appropriate actions to take and persons to contact in an emergency involving blood or OPIM

- an explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available

- information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident

- an explanation of the signs and labels and/or color coding required by the standard and used at this facility

- an opportunity for interactive questions and answers with the person conducting the training session

Training materials for this facility are available at ___________________________.

**RECORDKEEPING**

**Training Records**

Training records are completed for each employee upon completion of training. These documents will be kept for at least three years at ____(Name of responsible person or location of records)_____________________.

The training records include:

- the dates of the training sessions

- the contents or a summary of the training sessions

- the names and qualifications of persons conducting the training

- the names and job titles of all persons attending the training sessions

Employee training records are provided upon request to the employee or the employee's authorized representative within 15 working days. Such requests should be addressed to (Name of Responsible person or department)________________________________________.

**Medical Records**

Medical records are maintained for each employee with occupational exposure in accordance with 29 CFR 1910.20, "Access to Employee Exposure and Medical Records."
(Name of Responsible person or department) is responsible for maintenance of the required medical records. These confidential records are kept at ___(List location)__________ for at least the duration of employment plus 30 years.

Employee medical records are provided upon request of the employee or to anyone having written consent of the employee within 15 working days. Such requests should be sent to (Name of responsible person or department and address)______________________.

OSHA Recordkeeping

An exposure incident is evaluated to determine if the case meets OSHA’s Recordkeeping Requirements (29 CFR 1904). This determination and the recording activities are done by (Name of responsible person or department)______________.

HEPATITIS B VACCINE DECLINATION (MANDATORY)

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Signed: (Employee Name)______________________________________________

Date: __________________________________________________________
Serious Accidents

If an employee is involved in a serious accident, or a major loss to equipment or property occurs, the Project Supervisor shall notify designated personnel and affected organizations so that an investigation can be initiated.

Reporting Serious Accidents

Upon learning of a serious incident or fatal accident on the project, notification must be made immediately to the following:

- The (Construction Company) Safety Department
- Insurance carrier claims adjuster
- Insurance carrier technical services
- Appropriate law enforcement
- State safety agency and/or Federal OSHA/MSHA area office
- Owner’s designated representative(s)

Investigation

The investigation must be fact finding, not fault finding. The purpose is to learn the true cause so that similar accidents/incidents can be prevented, and to determine facts bearing on legal liability.

From the investigation, a written report (Figure 5-1) must be completed for all serious accidents. The report should be completed by the person(s) who investigated the accident and must be completed as soon as possible after the investigation is completed. The report should contain the following:

1. Detailed description of the accident including answers to the following:
   a. What happened?
   b. Who (individuals and companies) was involved?
   c. When did the accident occur?
   d. What injuries/property damage resulted?
2. List of who was notified - owner, insurance company, OSHA, etc., and when they were notified.
3. List of who investigated the accident-owner, insurance company, OSHA, etc.
4. Photographs taken. (Figure 5-2)

5. Diagrams made.

6. Witnesses’ statements. (Figure 5-3)

7. Contract documents involved - rental agreement, hold harmless clause, etc.

8. Conclusions should be developed regarding the physical cause of the accident, but should not deal with the placement of legal liability upon any party.

9. Any actions that will prevent reoccurrence of the accident or incident.

10. Any procedural violations by any of the parties involved.

11. Disciplinary Action (if any)
   a. Employee (written or verbal)
   b. Supervision (written or verbal)

The original of the accident report should be sent to the (Construction Company) Safety Department and a copy should be kept for the job site.
FIGURES
ATTACHMENTS
ACCIDENT INVESTIGATION REPORT

Location ____________________________ Date of Investigation ______________________
Bldg. No. ____________________________
Investigator __________________________ Incident report filed. Yes _____ No _____

SECTION A - INCIDENT REPORT DATA
Date of Incident __________ Time _______ Date of Report __________ Time _______

Injured _______________ _______________

Parties _______________ _______________

Name _______________ SSN _______________ Employer ______________ _Supervisor _______________

Witnesses _______________ _______________

Name _______________ SSN _______________ Employer ______________ _Supervisor _______________

Exact Location __________________________ Pictures Taken __________________________

of Incident __________________________ Sketches Made __________________________

Bldg/Fir/Rm No. __________________________

Injuries __________________________ Treated by Doctor __________________________

Time Lost __________________________

Materials, Tools, __________________________ Toxic Material __________________________

Substances __________________________ Training Provided __________________________

Involved __________________________

Activity Injured __________________________ Personal Protection __________________________

Was Engaged In __________________________ Equipment Provided Yes ____ No ____

Before Incident __________________________ Used Yes ____ No ____

What unplanned __________________________ What Contributing __________________________

Event occurred __________________________ Condition Existed __________________________

SECTION B - INCIDENT ANALYSIS
Safety Coordinator __________________________ Name __________________________ Title __________________________ Date __________________________

Incident Evaluation __________________________

Direct Causes, Condition, Acts __________________________

Procedural Deficiencies __________________________

SECTION C - CORRECTIVE ACTION
Conditions, Behaviors, __________________________ Action Taken __________________________

Policies, Procedures, __________________________ Date __________________________

To Be Corrected __________________________

Figure 5-1. Accident Investigation Report
Figure 5-2. Photo Information Sheet
STATEMENT OF WITNESS

Name: ________________________________  Date: ________________
Job No.: ______________________________
Craft: ________________________________
Employee No.: _________________________

This interview will try to determine the facts about the accident that occurred at or about ______________________ on ______________________.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Figure 5-3. Statement of Witness
(Front of Form)
I have read the __________ pages of this statement and initialed each page. This statement is true and correct to the best of my knowledge.

______________________________
Signature

______________________________
Badge No. Social Security No.

Witnesses to Signature:

______________________________  ______________________________
Signature Address

______________________________  ______________________________
______________________________  ______________________________

______________________________  ______________________________
Signature Address

Figure 5-3. Statement of Witness
(Back of Form)
This section discusses the recordkeeping that should be maintained by the project.

**First Aid Log**

This is a chronological listing of all visits for first aid performed on the project. Every injury or illness reported, no matter how minor, should be recorded. Entries should be made promptly following treatment. An example of an approved project First Aid Log (Figure 6-1) is included in this section.

Accurate recordkeeping provides protection for the employees, the first aid personnel, the owner, and company. If there are any doubts about recording the information, record it.

**Medical Authorization - Treatment/Return to Work Authorization**

A sample of a Medical Authorization form (Figure 6-2) is included in this section. This form should be used when an employee is to receive medical treatment from a physician, hospital, or clinic off the job site. The medical authorization form should be completed each time an employee receives treatment.

The Project Manager or Superintendent is responsible for ensuring the form is properly filled out. When an employee returns from the physician, hospital, or clinic, he or she must have the Treatment/Return to Work Authorization form with them.

This form must be filed with the proper First Report of Injury form. A copy must be sent to the safety department.

**Employers First Report of Injury**

A designated person on the project will be responsible for filling out insurance claim forms. (This is normally the safety department’s responsibility.)

Workers’ compensation regulations require that an employer’s First Report of Injury form be prepared and submitted immediately after an employee reports a work-related injury or illness which requires attention by a physician. (These forms vary from state to state. Check with your insurance carrier or your appropriate state funded systems.)

The Project Manager or Superintendent should obtain the necessary information to complete this report. They should investigate the accident and verify the employee’s statement or submit an attached statement of facts developed during the investigation.
Supervisor's Accident Investigation Report

The Supervisor's Accident Investigation Report (Figure 6-3) shall be prepared and submitted immediately to the Corporate Safety Department after an employee reports a work-related injury or illness which requires attention by a physician.

The Project Manager or Supervisor and the employee’s supervisor shall investigate the accident, and any other individuals that witnessed the accident or had any involvement.

The following investigative procedures should be used when completing the form. It is important that an accurate description of the circumstances leading to the accident be provided. The following questions should be asked of each person involved and of each witness:

- Where were you when the accident took place?
- What activity was being performed prior to the accident?
- What materials, equipment, or conditions were involved? Include all contributing factors.
- How did the accident occur?
- Why did the accident occur? Include all unsafe conditions and/or unsafe acts.
- What type of pre-task safety instructions were given?
- To the best of the witnesses' knowledge, was there a previously known and/or reported problem or condition associated with the accident?
- What specific corrective action, if any, was taken? If corrective action is not applicable, or the accident can be verified as job-related, indicate this on the report. (Instructed employee to be more careful, etc., is not acceptable as corrective action.) Explanations such as “foreign body in the eye”, “strained back while lifting pipe,” and “employee does not know how injury occurred” are not satisfactory. If the situation was complex, finish the explanation on a separate sheet and attach it to the report.
OSHA Occupational Injury and Illness Forms

The purposes of the OSHA recordkeeping requirements are four-fold:

- Assist compliance offers in the determination of the contractor's injury experience.
- Ensure that uniform statistical information is gathered.
- Inform employees of their employer's injury/illness experience by posting the information.
- Assist the employer in identifying trends of occupational injuries and illnesses, and determining corrective actions.

Regulations issued under OSHA require all contractors with ten or more employees at any time during the previous calendar year to maintain records of occupational injuries and illnesses. The OSHA 300 Summary (Figure 6-3) must be used for this purpose.

Each employer must keep injury and illness records for each establishment. An establishment is defined as a "single physical location where business is conducted or where services are performed." This means each separate location such as construction site, plant, office, shop, lab, warehouse, etc.

- Obtain the OSHA Log sheets from the Safety Department. (Normally the safety department is responsible for the log).
- Record all occupational injuries and illnesses within 7 calendar days of your knowledge of the occurrence (sooner if possible).
- Keep the Log in the file with your First Reports of Injury. The OSHA 300 Summary shall be completed and posted no later than February 1 of the year following the calendar year covered and shall remain in place until January 31 of the following year.

MSHA Reporting and Recording

Each independent contractor working on mine property, along with the mine owner, lessee or other person who operates, controls or supervises the mine, must file the following information. (The Safety Manager should coordinate the filing requirements with the approved MSHA offices):

- The independent contractor's trade name, business address, and business telephone number.
Section 6: Recordkeeping and Reporting Procedures

- A description of the nature of the work to be performed by the independent contractor and where at the mine the work is to be done.

- The independent contractor's MSHA identification number (contact the District Manager of MSHA for I.D. number).

- The independent contractor's address of record for service of citations or other documents involving the independent contractor. This shall be done in accordance with Regulation 30 CFR Part 45, Independent Contractor.

Projects under the jurisdiction of MSHA should also complete and submit an OSHA 300 Summary.

Each employer must file within ten days of occurrence a report of each accident, occupational injury, and occupational illness on Form 7000-1 (Figure 6-4). A separate form is prepared for each employee affected.

MSHA's definition of an “occupational injury” is one which results in:

- Death
- Loss of consciousness
- Administration of medical treatment other than first aid
- Transfer to another job
- Inability to perform all duties on any day after the injury

"Occupational Illness" is an illness or disease which:

- May have resulted from work at a mine
- Resulted in a compensation award

Each employer must submit a Quarterly Employment and production Report on Form 7000-2 (Figure 6-6). Completion of forms 7000-1 and 7000-2 should be in accordance with Regulation 30CFR 50: Notification, Investigation, Reports and Records of Accidents, Injuries, Illnesses, Employment and Local Production in Mines. After the (Construction Company) complete form is reviewed, it is mailed to the following address with a copy retained by the Safety Department:

Mine Safety and Health Administration
Health and Safety Analysis Center
P.O. Box 25367, Federal Center
Denver, Colorado  80225
Record Retention

Record retention is an integral part of the (Construction Company) responsibilities. Project safety records are often used to reconstruct an accident, incident, or fatality. They are also used as supporting documentation in any legal dispute. For uniformity and continuity among projects, each project should use a retention system as described in this section.

Retired project records should be boxed in standard storage containers and sent to a central (Construction Company) storage area for microfiche and retention.

The 7 year retention records should be separated from the 30 year retention records.

Retention Records - 7 Years

The following documents should be included in the 7 year retention records:

- Confined space procedure
- Equipment testing
- Fire brigade training records
- Fire incident reports
- Job related correspondence
  - To and from client
  - From (Construction Company) office
- Lock out - tag out procedure
- New hire orientation (manual/nonmanual)
- OSHA inspection (dated)
- OSHA 300 Summary (This only has to be retained 5 years)
- Safety plans
- Shift turn over reports
Section 6: Recordkeeping and Reporting Procedures

- Supervisor safety meetings
- Tool box safety meetings
- Weekly safety reports

Retention Records - 30 years

The following should be included in the 30 year retention records:

- Accident and incident reports (dated)
- All industrial hygiene sampling records
- Doctor case correspondence
- Insurance company and worker’s compensation department correspondence
- Material safety data sheets
- Personnel medical cards
- Project first aid log
- Subcontractor medical files
FIGURES

ATTACHMENTS
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Name</th>
<th>Age</th>
<th>Craft</th>
<th>SS Number</th>
<th>Immediate Supervisor</th>
<th>Injury/Illness</th>
<th>Description of Accident</th>
<th>Treatment Given By</th>
<th>FAV</th>
<th>RTW</th>
<th>DV</th>
<th>LTA</th>
<th>LTA - Lost Time Accident</th>
</tr>
</thead>
</table>

**LEGEND**

- **FAV** - First Aid Visit
- **RTW** - Return to Work
- **DV** - Doctor Visit
- **LTA** - Lost Time Accident

*Figure 6-1. First Aid Log*
MEDICAL AUTHORIZATION

To: (Physician, Hospital, Clinic, etc.)

Please render immediate medical treatment to employee named below.

<table>
<thead>
<tr>
<th>INSURED EMPLOYEE (Type/Print)</th>
<th>DATE OF INJURY</th>
<th>TIME OF INJURY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Name</td>
<td>First Initial</td>
<td>Mo.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DATE INJURY REPORTED

<table>
<thead>
<tr>
<th>Mo.</th>
<th>Day</th>
<th>Yr.</th>
<th>Social Security #</th>
<th>Employee Badge #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Supervisor ________________________________

Give a brief description of injury:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Please send your report and bill directly to:

(Insurance Carrier's Name)

(Mailing Address)

By: ________________________________

TREATMENT/RETURN TO WORK AUTHORIZATION

TO PHYSICIAN: For our information, we request that the following information be completed and this form given to the employee for return to us. If the employee is not to return immediately to work, please mail this form to us.

TREATMENT RENDERED ________________________________
________________________________________________________________________

RETURNED TO: REGULAR WORK _____ LIGHT DUTY _____ * SENT HOME _____
ESTIMATED TIME OFF FROM WORK ___________
DATE OF NEXT TREATMENT ___________

THE INJURY APPEARS TO BE: OCCUPATIONAL _____ NON OCCUPATIONAL _____

PHYSICIAN'S SIGNATURE ________________________________

DATE ___________
________________________________________________________________________

* If light duty status, what are the limitations of the duty?

TO EMPLOYEE: This section must be returned to jobsite office prior to returning to work.

Figure 6-2. Treatment/Medical Authorization Form
### ACCIDENT INVESTIGATION REPORT

<table>
<thead>
<tr>
<th>Location</th>
<th>Date of Investigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bldg. No.</td>
<td>Incident report filed. Yes ____ No ____</td>
</tr>
<tr>
<td>Investigator</td>
<td></td>
</tr>
</tbody>
</table>

### SECTION A - INCIDENT REPORT DATA

<table>
<thead>
<tr>
<th>Date of Incident</th>
<th>Time</th>
<th>Date of Report</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injured</td>
<td>Name</td>
<td>SSN</td>
<td>Employer</td>
</tr>
<tr>
<td>Parties</td>
<td>Name</td>
<td>SSN</td>
<td>Employer</td>
</tr>
<tr>
<td>Witnesses</td>
<td>Name</td>
<td>SSN</td>
<td>Employer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exact Location</th>
<th>Pictures Taken</th>
<th>Sketches Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>of Incident</td>
<td>Bldg/Fir/Rm No.</td>
<td></td>
</tr>
<tr>
<td>Injuries</td>
<td>Treated by Doctor</td>
<td></td>
</tr>
<tr>
<td>Time Lost</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Materials, Tools, Substances</th>
<th>Toxic Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involved</td>
<td>Training Provided</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity Involved</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was Engaged In</td>
<td>Equipment Provided</td>
</tr>
<tr>
<td>Before Incident</td>
<td>Used</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What unplanned Event occurred</th>
<th>What Contributing Condition Existed</th>
</tr>
</thead>
</table>

### SECTION B - INCIDENT ANALYSIS

<table>
<thead>
<tr>
<th>Safety Coordinator</th>
<th>Name</th>
<th>Title</th>
<th>Date</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Incident Evaluation</th>
<th>Direct Causes, Condition, Acts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedural Deficiencies</td>
<td></td>
</tr>
</tbody>
</table>

### SECTION C - CORRECTIVE ACTION

<table>
<thead>
<tr>
<th>Conditions, Behaviors</th>
<th>Action Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policies, Procedures</td>
<td>To Be Corrected</td>
</tr>
</tbody>
</table>

Figure 6-3. Accident Investigation Report
### OSHA's Form 300
**Log of Work-Related Injuries and Illnesses**

You must maintain records of every work-related injury or illness that involves loss of consciousness, restricted work activity, or job transfer, days away from work, or medical treatment beyond first aid. You must also record any work-related injury or illness that results in restricted work activity or days away from work, even if it involves_WS
treatment by a health care provider. You must also record any related fatalities and illnesses documented by a physician or other licensed health care practitioner.

#### Identify the person

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Employee's Name</th>
<th>Job Title (e.g., W/ID)</th>
<th>Date of injury or onset of illness (mm/dd/yyyy)</th>
<th>Where the event occurred (the event location (if not at work) or workplace)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Describe the case

Describe every injury, other than injury, and illness that directly resulted in a lost workday or fatality. Include the date the injury or illness was first diagnosed or first treated by a health care provider. Include any job-related injuries or illnesses that resulted in a restricted work activity or days away from work. Include any job-related injuries or illnesses that resulted in a fatality. Include any job-related injuries or illnesses that resulted in a restricted work activity or days away from work.

#### Classify the case

Using these categories, check ONLY the most serious result for each case:

<table>
<thead>
<tr>
<th>Death</th>
<th>Days away from work</th>
<th>Total temporary</th>
<th>Total permanent</th>
<th>Total other than temporary</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
</tbody>
</table>

#### Be sure to transfer totals to the Summary Page (Form 300A) before you post it

Public reporting burden for the collection of information is estimated to average 14 minutes per response, including the time to review the instructions, search the facts needed, and complete and submit the collection of information. If you have any comments about this burden estimate or about how to improve this form, please write to the Department of Labor, DOL Office of Information and Regulatory Affairs, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.
Mine Accident, Injury and Illness Report
U.S. Department of Labor
Mine Safety and Health Administration

* Section A - Identification Data

MSHA ID Number
Contractor ID
Report Category

* Metal/Nonmetal Mining
* Coal Mining

* Check here if report pertains to contractor

Mine Name
Company Name

* Section B - Completes for Each Reportable Accident Immediately Reported to MSHA

1. Accident Code (circle applicable code - see instructions)
   01 - Death
   02 - Serious Injury
   03 - Entrapment
   04 - Inundation
   05 - Gas or Dust Ignition
   06 - Mine Fire
   07 - Explosives
   08 - Roof Fall
   09 - Outburst
   10 - Impounding Dam
   11 - Hoisting
   12 - Offsite injury

2. Name of Investigator

3. Date Investigation Started

4. Steps Taken to Prevent Recurrence of Accident

* Section C - Completes for Each Reportable Accident, Injury or Illness

5. Circle the Codes Which Best Describe Where Accident/Injury/Illness Occurred (see instructions)

(a) Surface Location:
   02 Surface at Underground Mine
   30 Mill, Preparation Plant, etc.
   03 Strip/Owen Plt Mine
   04 Surface Auger Operation
   05 Cut/Rake/Rein Mine
   06 Dragee Mining
   12 Other Surface Mining
   17 Independent Shops (with own MSHA ID)
   99 Other Facilities

(b) Underground Location:
   01 Vertical Shaft
   02 Subvertical Shaft
   03 Fence
   04 Intersection
   05 Underground Shop/Orc
   06 Other

(c) Underground Mining Method:
   01 Longwall
   02 Shortwall
   03 Conventional Stopping
   06 Continuous Mining
   09 Hand
   04 Drilling

6. Date of Accident
   Month
   Day
   Year

7. Time of Accident
   AM
   AM

8. Time Shift Started
   AM
   AM

9. Describe Fully the Conditions Contributing to the Accident/Injury/Illness, and Quantify the Damage or Impairment


10. Equipment Involved
    Type
    Manufacturer
    Model Number

11. Name of Witness to Accident/Injury/Illness
    12. Number of Reportable Injuries or Illnesses Resulting from This Occurrence

13. Name of Injured/Employee
    Sex
    * Male
    * Female

14. Last Four Digits of Social Security Number

15. Regular Job Title

16. Check if this Injury/Illness resulted in death:
   10. Check if Injury/Illness resulted in permanent disability
       (include amputation, loss of use, & permanent total disability)

17. Date of Birth
   Month
   Day
   Year

18. Nature of Injury or Illness

20. What Directly Inflicted Injury or Illness?

21. Nature of Injury or Illness

22. Part of Body Injured or Affected

23. Occupational Injuries (circle applicable code - see instructions)

24. Employee's Work Activity When Injury or Illness Occurred

25. Experience in This Job Title

26. Experience at This Mine

27. Total Mine Experience

28. Accident/Injury/Illness Occurred

29. Date Returned to Regular Job at Full Capacity (or Item 28)

30. Number of Days Away from Work (if none, enter 0)

31. Number of Days Restricted Work Activity (if none, enter 0)

* Section D - Return to Duty Information

Person Completing Form (Name)
Title

Date This Report Prepared (month, day, year)
Area Code and Telephone Number

MSHA Form 7000-1, July 91 (revised)

Figure 6-5. MSHA Form 7000-1
MINE ACCIDENT, INJURY, AND ILLNESS REPORT – MSHA FORM 7000-1

Section 50.20 of Part 50, Title 30, Code of Federal Regulations, requires a report to be prepared and filed with MSHA of each accident, occupational injury, or occupational illness occurring at your operation. The requirement includes all accidents, injuries, and illnesses as defined in Part 50 whether your employees or a contractor’s employees are involved. A Form 7000-1 shall be completed and mailed within ten working days after an accident or occupational injury occurs, or an occupational illness is diagnosed.

This report is required by law (30 U.S.C. §813; 30 C.F.R. Part 50). Failure to report can result in the institution of a civil action for relief under 30 U.S.C. 9818 respecting an operator of a coal or other mine, and assessment of a civil penalty against an operator of a coal or other mine under 30 U.S.C. 9820(a). An individual who, being subject to the Federal Mine Safety and Health Act of 1977 (30 U.S.C. 9801 et seq.) knowingly makes a false statement in any report can be punished by a fine of not more than $10,000 or by imprisonment for not more than 5 years, or both, under 30 U.S.C. §820(f). Any individual who knowingly and willfully makes any false, fictitious, or fraudulent statements, conceals a material fact, or makes a false, fictitious, or fraudulent entry, with respect to any matter within the jurisdiction of any agency of the United States can be punished by a fine of not more than $10,000, or imprisoned for not more than 5 years, or both, under 18 U.S.C. §91001.

REPORTING INSTRUCTIONS

Form 7000-1 consists of four sheets, an original (page 1) and three copies. The original will be mailed to MSHA, Denver Safety and Health Technology Center. The first copy (page 2) will be mailed to the appropriate local MSHA District or Subdistrict Office. Envelopes are included with the forms for mailing to those offices. If the mailed forms do not show return to duty information on an injured employee, complete and mail the second copy (page 3) to MSHA, Denver Safety and Health Technology Center, when the employee returns to regular job at full capacity or a final disposition is made on the injury or illness. The third copy (page 4) is to be retained at the mine for a period of five years. It is important to remember that a Form 7000-1 is required on each accident as defined in 30 CFR Part 50 whether any person was injured or not. A form is required on each individual becoming injured or ill, even when several were injured or made ill in a single occurrence. The principal officer in charge of health and safety at the mine or the supervisor of the mine area in which the accident, injury, or illness occurred shall be responsible for completing the Form 7000-1. Note: First aid cases (those for which no medical treatment was received, no time was lost, and no restriction of work, motion, or loss of consciousness occurred) need not be reported.

SPECIFIC INSTRUCTIONS

Detailed instructions for completing Form 7000-1 are contained in Part 50. A copy of Part 50 was sent to every active and intermittently active mine and independent mining contractor. If you do not have a copy, you may obtain one from your local MSHA Mine Safety and Health District or Subdistrict Office.

Section A- IDENTIFICATION DATA

Check the report category indicating whether your operation is in the metal/nonmetal mining industry or the coal mining industry. MSHA ID Number is the number assigned to the operation by MSHA. If you are unsure of your number assignment, contact the nearest MSHA Mine Safety and Health District or Subdistrict Office. Reports on contractor activities at mines must include an MSHA-assigned contractor ID Number as well as the 7-digit operation ID.

Show mine name and company name. Independent contractors should provide the mine name and show the contractor name under “company name.”

Section B- COMPLETE FOR EACH ACCIDENT IMMEDIATELY REPORTABLE TO MSHA

Section B is to be completed only when your operation has an accident that must be reported immediately to MSHA. Circle code 02 “Serious Injury” only if the injury has a reasonable potential to cause death. For additional detail on those specific kinds of accidents see Section 50.10 of Part 50. When it is necessary to complete Section B, circle the applicable accident code; give the name of the investigator (the person heading the investigating team on the accident); show the date the investigation was started; and describe briefly the steps taken to prevent a recurrence of such an accident.

Section C- COMPLETE FOR EACH REPORTABLE ACCIDENT, INJURY, OR ILLNESS

Section C must be completed on each form submitted to MSHA.

Item 5. If you are reporting an occurrence at a surface mine or other surface activity, circle the code which best describes the accident location in (a). Surface Location; do not mark any codes in (b) or (c). If you are reporting an occurrence in an underground mine, circle the code which best describes the underground location in (b) Underground Location and in (c) Underground Mining Method.

Items 6, 7, and 8. Show the date and time of the occurrence and the time the shift started in which the accident/incident occurred or was observed.

Item 9. Describe fully the conditions contributing to the occurrence. Detailed descriptions of the conditions provide the basis for accident and injury analyses which are intended to assist the mining industry in preventing future occurrences. Please see Part 50 for detail on what your narrative should include.

Item 10. If equipment was involved in the occurrence, name the type of equipment, the manufacturer, and the model number of the equipment.

Item 11. If there was a witness to the occurrence, give the name of the witness.

Item 12. If the occurrence resulted in one or more injuries, report the number. A separate report must be made on each injured person.

Item 13. Show the name of the injured person. [Note: In these instructions, “injured person” means a person either injured or ill.]

Item 14. Indicate the sex of the injured person.

Item 15. Show the date of birth of the injured person.
MINE ACCIDENT, INJURY, AND ILLNESS REPORT – MSHA FORM 7000-1 (cont.)

Item 16. Show the last four digits of the injured person's Social Security Number.

Item 17. Give the regular job title of the injured person at the time he was injured.

Item 18. Check this box if the injury or illness resulted in death.

Item 19. Check this box if the injury or illness resulted in a permanent disability. A permanent disability is any injury or occupational illness other than death which results in the loss or complete loss of use of any member (or part of a member) of the body, or a permanent impairment of functions of the body, or which permanently and totally incapacitates the injured person from following any gainful occupation.

Item 20. Name the object or substance that directly caused the injury or illness.

Item 21. Report the nature of injury or illness by naming the illness; or for injuries, by using common medical terms such as puncture wound, third degree burn, fracture, etc. For multiple injuries, enter the injury which was the most serious. Avoid general terms such as hurt, sore, sick, etc.

Item 22. Name the part of body with the most serious injury.

Item 23. Occupational illness is any abnormal condition or disorder, other than one resulting from an occupational injury, which falls into the following categories:

Code 21 - Occupational Skin Diseases or Disorders. Examples: Contact dermatitis, eczema, or rash caused by primary irritants and sensitizers or poisonous plants; oil acne; chemical burns or inflammations; etc.


Code 23 - Respiratory Conditions Due to Toxic Agents. Examples: Pneumonitis, pharyngitis, rhinitis, or acute congestion due to chemicals, dusts, gases, or fumes; etc.

Code 24 - Poisoning (Systemic Effects of Toxic Materials). Examples: Poisoning by lead, mercury, cadmium, arsenic, or other metals, poisoning by carbon monoxide, hydrogen sulfide, or other gases; poisoning by benzol, carbon tetrachloride, or other organic solvents; poisoning by insecticide sprays such as parathion, lead arsenate; poisoning by other chemicals such as formaldehyde, plastics, and resins; etc.

Code 25 - Disorders Due to Physical Agents (Other than Toxic Materials). Examples: Heatstroke, sunstroke, heat exhaustion and other effects of environmental heat; freezing, frostbite and effects of exposure to low temperatures; caisson disease; effects of ionizing radiation (isotopes, X-rays, radium); effects of nonionizing radiation (welding flash, ultraviolet rays, microwaves, sunburn); etc.

Code 26 - Disorders Associated with Repeated Trauma.

Examples: Noise-induced hearing loss; synovitis, tenosynovitis, and bursitis; Raynaud's phenomena; and other conditions due to repeated motion, vibration, or pressure.

Code 29 - All Other Occupational Illnesses. Examples: Infectious hepatitis, malignant and benign tumors, all forms of cancer, kidney diseases, food poisoning, histoplasmosis; etc.

Item 24. Describe what the employee was doing when he or she became injured or ill.

Items 25, 26, and 27. Show the number of weeks (or years and weeks) of experience of the injured person at the job title (indicated in Item 17), at your operation, and his/her total mining experience.

Section D - RETURN TO DUTY INFORMATION

Section D is to be completed in full when all return-to-duty information is available. If the information is not available within ten working days after a reportable occurrence, then the first two pages are sent to MSHA without Section D being completed; PAGE 3 is then mailed to DSHTC-DMIS with full information when the data are available. Until all the items are answered and the report sent to DSHTC-DMIS, the occurrence remains an open case.

Item 28. If the injured person was transferred or terminated as a result of the injury or illness, check the box and answer items 29, 30, and 31.

Item 29. Show the date that the injured person returned to his regular job at full capacity or was transferred or terminated. This date should indicate when the count of days away from work and/or days of restricted work activity have stopped.

Item 30. Show the number of workdays the injured person did not report to his place of employment, i.e., number of days away from work.

Item 31. Show the number of workdays the injured person was on restricted work activity; do not include days away from work reported in Item 30.

At the bottom of the form, show the name of the person who completed the form; the date the report was prepared; and the telephone number where the person who completed the form may be reached.

1/ Note: The number of lost workdays should not include the day of injury or onset of illness, or any days on which the employee was not previously scheduled to work even though able to work, such as holidays or plant closures.

Figure 6-6. Instructions for Completing MSHA Form 7000-1
DEFINITIONS

(1) "Coal or other mine" means (a) an area of land from which minerals are extracted in nonliquid form or, if in liquid form, are extracted with workers underground, (b) private ways and roads appurtenant to such area, and (c) lands, excavations, underground passageways, shafts, slopes, tunnels and workings, structures, facilities, equipment, machines, tools, or other property including impoundments, retention dams, and tailings ponds, on the surface or underground, used in, or to be used in, or resulting from, the work of extracting such minerals from their natural deposits in nonliquid form, or if in liquid form, with workers underground, or used in, or to be used in, the milling of such minerals, or the work of preparing coal or other minerals, and includes custom coal preparation facilities. In making a determination of what constitutes mineral milling for purposes of this Act, the Secretary shall give due consideration to the convenience of administration resulting from the delegation to one Assistant Secretary of all authority with respect to the health and safety of miners employed at one physical establishment.

(2) "Operator" means any owner, lessee, or other person who operates, controls, or supervises a coal or other mine or any designated independent contractor performing services or construction at such mine.

(3) "Occupational injury" means any injury to a worker which occurs at a mine for which medical treatment is administered, or which results in death, loss of consciousness, inability to perform all job duties on any day after an injury, or transfer to another job.

(4) "Occupational illness" means an illness or disease of a worker which may have resulted from work at a mine or for which an award of compensation is made.

(5) "Medical treatment" means treatment, other than first aid, administered by a physician or by a registered medical professional acting under the orders of a physician.

DIFFERENCES BETWEEN MEDICAL TREATMENT AND FIRST AID

Medical treatment includes, but is not limited to, the suturing of any wound, treatment of fractures, application of a cast or other professional means of immobilizing an injured part of the body, treatment of infection arising out of an injury, treatment of bruise by the drainage of blood, surgical removal of dead or damaged skin (debridement), amputation or permanent loss of use of any part of the body, treatment of second and third degree burns. Procedures which are diagnostic in nature are not considered by themselves to constitute medical treatment. Visits to a physician, physical examinations, x-ray examinations, and brief hospitalization for observations, where no evidence of injury or illness is found and no medical treatment given, do not in themselves constitute medical treatment. However, if scheduled workdays are lost because of hospitalization, the case must be reported. Procedures which are preventative in nature also are not considered by themselves to constitute medical treatment. Tetanus and flu shots are considered preventative in nature. First aid includes any one-time treatment and follow-up visit for the purpose of observation of minor scratches, cuts, burns, splinters, etc. Ointments, salves, antiseptics, and dressings to minor injuries are considered to be first aid.

(1) Abrasions

(i) First aid treatment is limited to cleaning a wound, soaking, applying antiseptic and nonprescription medication, and bandages on the first visit and follow-up visits limited to observation including changing dressing and bandages. Additional cleaning and application of antiseptic constitutes first aid where it is required by work duties that soil the bandage.

(ii) Medical treatment includes examination for removal of imbedded foreign material, multiple soakings, whirlpool treatment, treatment of infection, or other professional treatments and any treatment involving more than a minor spot-type injury. Treatment of abrasions occurring to greater than full skin depth is considered medical treatment.

(2) Bruises

(i) First aid treatment is limited to a single soaking or application of cold compresses, and follow-up visits if they are limited only to observation.

(ii) Medical treatment includes multiple soakings, draining of collected blood, or other treatment beyond observation.

(3) Burns, Thermal and Chemical (resulting in destruction of tissue by direct contact).

(i) First aid treatment is limited to cleaning or flushing the surface, soaking, applying cold compresses, antiseptics or nonprescription medications, and bandaging on the first visit, and follow-up visits restricted to observation, changing bandages, or additional cleaning. Most first degree burns are amenable to first aid treatment.

(ii) Medical treatment includes a series of treatments including soaks, whirlpool, skin grafts, and surgical debridement (cutting away dead skin). Most second and third degree burns require medical treatment.

(4) Cuts and Lacerations

(i) First aid treatment is the same as for abrasions except the application of butterfly closures for cosmetic purposes only can be considered first aid.

(ii) Medical treatment includes the application of butterfly closures for noncosmetic purposes, sutures (stitches), surgical debridement, treatment of infection, or other professional treatment.

(5) Eye Injuries

(i) First aid treatment is limited to irrigation, removal of foreign material not imbedded in eye, and application of nonprescription medications. A precautionary visit (special examination) to a physician is considered as first aid if treatment is limited to above items, and follow-up visits if they are limited to observation only.
(ii) Medical treatment cases involve removal of imbedded foreign objects, use of prescription medications, or other professional treatment.

(6) Inhalation of Toxic or Corrosive Gases

(i) First aid treatment is limited to removal of the worker to fresh air or the one-time administration of oxygen for several minutes.

(ii) Medical treatment consists of any professional treatment beyond that mentioned under first aid and all cases involving loss of consciousness.

(7) Splinters and Puncture Wounds

(i) First aid treatment is limited to cleaning the wound, removal of foreign object(s) by tweezers or other simple techniques, application of antiseptics and nonprescription medications, and bandaging on the first visit. Follow-up visits are limited to observation including changing of bandages. Additional cleaning and applications of antiseptic constitute first aid where it is required by work duties that soil the bandage.

(ii) Medical treatment consists of removal of foreign objects) by physician due to depth of imbedment, size or shape of object(s), or location of wound. Treatment for infection, treatment of a reaction to tetanus booster, or other professional treatment, is considered medical treatment.

(8) Sprains and Strains

(i) First aid treatment is limited to soaking, application of cold compresses, and use of elastic bandages on the first visit. Follow-up visits for observation, including re-applying bandage, are first aid.

(ii) Medical treatment includes a series of hot and cold soaks, use of whirlpools, diathermy treatment, or other professional treatment.
Figure 6-7. MSHA Form 7000-2 (cont.)
**Discipline and Enforcement**

This procedure is established to provide a mechanism for the discipline of employees who violate safety rules. Safety rules are written and enforced to protect the employee from injury and to provide for a "safe and healthful place of employment."

Project Managers, Superintendents, and front line supervisors are responsible for the enforcement of the safety and health process. In order to accomplish this, they must ensure that each employee is properly instructed in the use of safety equipment and safe work practices, warn employees when they violate a safety rule, and discharge any employee who refuses to comply with the procedures.

When an employee is observed violating a safety rule the following procedure can be implemented if warranted:

1. First offense - verbal or written warning.
2. Second offense - written warning.
3. Third offense - within any 12 month period of time is grounds for immediate termination.

Each written warning shall advise the employee of the nature of the violation and the correct safe practice and procedure. The written warning shall be used as a working tool to re-instruct employees on the proper use and instructions for the safety procedures.

A copy of the violation shall be provided to the employee, the employee's supervisor, and the project file. The project manager or superintendent shall notate the project file copy prior to its filing.

The employee's termination papers shall be noted that he or she has been terminated for violation of safety rules and is not eligible for rehire by the project during its remaining time (if applicable to your project).

A letter describing the violation, the dates of the first and second written warnings and the termination shall be forwarded to the corporate office. The letter shall state the ineligibility of the offending employee to be rehired by the project during its remaining time.
Basic Company Policy

(The Construction Company) is committed to safety and providing an injury free work place. These rules have been designed with your safety in mind. Following these rules and safety procedures is a condition of employment. It is essential that you read and understand these rules so that we can achieve an accident free work place.

1. Hard hats will be worn at all times in construction areas.

2. Safety glasses with side shields that are ANSI Z87 approved will be worn at all times when eye hazards are present. Unless prescription glasses are safety glasses with side shields, they must be supplemented with approved safety glasses. Additional eye and face protection (goggles, face shield, etc.) will be worn when needed.

3. When lifting and handling materials, use good judgment and ask for help if an object is too heavy. Wear proper footwear and gloves. Bend your legs and not your back. Keep the load close to your body. Be careful when twisting and turning. Use material handling machinery as much as possible when it is readily available.

4. Good housekeeping will be maintained at all times. Arrange cords and hoses to minimize tripping hazards. Pickup trash around your work area.

5. When riding in the bed of a pickup truck, sit down inside against the cab. Do not ride on the tailgate. When driving or riding in the cab, seat belts must be worn.

6. Harness and shock absorbing lanyard must be worn when working at heights above 6' and free fall hazard exists. The anchor point must be substantial and designed to withstand a 5000 lbs. force. Ladder work normally does not require fall protection, unless special hazards are present.

7. Do not use extension or stepladders that appear unsafe or have broken rungs, rails, burns, etc. Extension ladders must have safety feet, extend at least 3' above landings and be tied off.

8. Stepladders should be spread wide open. Do not stand on the top landing. Do not use stepladders as extension ladders.

9. Scaffolding must be erected by qualified persons and inspected by a competent person. All working levels must be properly decked, have top and mid rails and have toe boards if necessary. If this is not possible, fall protection equipment must be worn.
10. Aerial lift devices must be inspected prior to use. Fall protection must be worn when operating JLG type and Bucket truck lifting devices.

11. Only qualified electricians will work on High Voltage equipment. High Voltage is 600 volts nominal and above. Whenever work of a “non-routine” nature is performed on energized 480-volt equipment, written procedures should be formulated and reviewed by the electrician and the project manager. Wear the appropriate safety equipment, follow grounding procedures and follow the (The Construction Company) High Voltage policy.

12. Whenever working around or raising equipment in the vicinity of overhead transmission lines, observe the 10’ safety rule as outlined in the (The Construction Company) High Voltage policy.

13. Inspect all hand and power tools before use. Check for defects, poor wiring and missing ground plugs. All electric power tools used from temporary power must be protected with a Ground Fault Circuit Interrupter (GFCI).

14. Lock and Tagout all energy sources (electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy) before working on equipment and systems. Make sure that ALL energy is at a Zero energy state.

15. Procedures must be followed for all Confined Space Entry. A confined space can be any place not normally inhabited by people and has the potential to contain a hazardous environment. Example: underground vaults, tanks, storage bins, pits, diked areas, vessels and silos.

16. Trenches and Excavations greater than 5’ deep will be shored or sloped to eliminate possible cave-in situations. Spoil will remain at minimum 2’ from sidewalls. An access ladder will be placed every 25’. Inspect all open trenches and excavations for changing conditions.

17. The Haz-Com And Right to Know program is for your safety. It is available on all job sites. Review the MSDs for chemicals before use. Follow the manufacturer’s directions and obey warning labels.

18. All Accidents must be reported to your Foreman. For minor accidents, a First Aid kit is available for your use. Clinics and Doctors have been established for all other First Aid care. You and your Foreman must fill out all accident reports.


20. In cases where a customer has more stringent safety rules than those of the (Construction Company), the customer’s rules are to be followed.
DISCIPLINE PROCEDURE

Violation of these Safety Rules and other rules may result in discipline and or termination of employment.

These actions may include the following:

1. FIRST OFFENSE: VERBAL WARNING
2. SECOND OFFENSE: VERBAL AND WRITTEN WARNING
3. THIRD OFFENSE: DISMISSAL

A flagrant rule violation, which puts you or fellow workers in a dangerous situation, may result in immediate discharge regardless of whether steps one and two have been previously implemented.

I the undersigned acknowledge having read or will read the Safety & Accident Prevention Rules for the (Construction Company). In reading this material, I hereby state I understand my rights as an employee for safety and accident prevention on the jobsite, along with the obligation for same from the employer, with any breach of these standards leading to my possible dismissal.

______________________________  ________________
Employee signature                      Date

______________________________  ________________
Employee signature                      Date
EMPLOYEE WARNING NOTICE

Employee Name:_____________________________ Date of Warning: ____________

Employee/Payroll# _______ Dept/Area ______________ Location _______________________

TYPE OF VIOLATION

<table>
<thead>
<tr>
<th>Attendance</th>
<th>Violation of Safety Rules</th>
<th>Insubordination</th>
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</thead>
<tbody>
<tr>
<td>Failure to Follow Instructions</td>
<td>Willful Damage to Material/Equipment</td>
<td>Violation of Company Policies or Procedures</td>
</tr>
<tr>
<td>Unsatisfactory Work Quality</td>
<td>Working on Personal Matters</td>
<td>Rudeness to Employees/Customers</td>
</tr>
<tr>
<td>Carelessness</td>
<td>Lateness/Early Quit</td>
<td>Other</td>
</tr>
</tbody>
</table>

PREVIOUS

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<th>WRITTEN</th>
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<th>BY WHOM</th>
</tr>
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<tbody>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Warning</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Employer Statement

Date of Incident: / / Time: am/pm

Employee Statement

I Agree with the Employer’s Statement. I Disagree with the Employer’s description of violation. The reasons are:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Action to be taken:

_____ Warning _____ Probation _____ Suspension _____ Dismissal _____ Other

Consequence should incident occur again ________________________________

________________________________________________________________________

I have read this Employee Warning Notice and understand it.

Signature of Employee Date Signature of Supervisor who issued Warning Date
(Construction Company) gives instructions about the project safety process through the new hire orientation program, the craft general foreman/foremen orientation program, the weekly "tool box" safety meetings and specialized safety training in safety, fire, and health as required (See Figure 8-1 for Training Session Report).

On each project, the time, place, and format of the safety meetings will be jointly agreed upon by the senior (Construction Company) field representative and the supervising safety representative.

OSHA Safety Requirements

OSHA Part 1926.21 (b) (2) requires employers to "instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury."

The specific training requirements contained in the OSHA/MSHA Construction Standards are available from the project safety representative and the respective regional safety manager.

MSHA Safety Training Requirements

MSHA 30 CFR Section 116 requires extensive safety and health training in some instances. Contact the respective regional safety manager or the (Construction Company) Safety Department for specifics.

New Hire Orientation of Manual and Non-Manual Employees

On each project, sufficient time must be allotted for the safety orientation of all new hires (manual and non-manual employees). Supervisory participation in this orientation program should be encouraged.

The items discussed below must be reviewed with each new employee.

Safe Practices Booklet

Each employee must be given a copy of the Safe Practices Booklet. The contents should be reviewed and the employee must sign the tear-out sheet, acknowledging receipt of the booklet. This tear-out sheet will be kept in the employee's personnel file. This booklet is normally a "pocket guide" and must be kept on his or her person for easy reference for general safety practices.

First Aid

The project first aid reporting requirements will be reviewed. All injuries, no matter how minor, must be reported to the first aid office or front line supervisor immediately.
Pregnant Women

(Construction Company) is concerned with the safety and health of pregnant women. This is discussed in Section 10 - Industrial Hygiene.

Tool Box Safety Meetings

Employees must be informed that their attendance is mandatory at the scheduled weekly "toolbox" safety meetings conducted by their supervisor. At this time, questions should be asked and suggestions made regarding the project safety process. All employees will then sign their name with employee numbers on the Safety Meeting Record Sheet. This sheet will be retained in the safety office.

Personal Protective Equipment

Every employee is required to wear a (Construction Company) hard hat while on the project. Employees must be informed that all other items of personal protective equipment, such as eye and face protection, respiratory protection, safety belts and life lines, hearing protection, hand and foot protection, etc., are available at no cost to the employee. When such equipment is specified for a work assignment, its use is mandatory. Welders will be issued a hard hat hood combination. The use of soft hoods is prohibited unless prior approval is obtained from the Safety Department.

Reporting Unsafe Acts or Conditions

Employees will be informed that (Construction Company) expects them to report all observed unsafe acts or conditions to their supervisor, who will either resolve the problem or refer it to the general foreman. Unresolved problems must be reported to Senior Management. Situations which involve "imminent danger" must be reported to the first (Construction Company) supervisor an employee can find, and then a follow-up can be done with the Safety Department.
New Hire Orientation and General Safety Regulations

- Employer/employee responsibilities under the Federal and State OSHA Acts
- Jobsite disciplinary action program
- Jobsite workers
- Scaffolding
- Perimeter guarding and floor coverings
- Housekeeping
- Fire protection
- First aid facilities and emergency procedures
- Toxic substances
- Special project requirements and procedures (Signs, barricades, flagging, permits, and tagging)
- Trenching and excavations
- Material storage and handling
- Electrical safety
- Rigging and crane safety
- Confined space
Safety Orientation For General Foreman/Foremen

Each general foreman/foreman, upon promotion or hire, receives a "Supervising For Safety" orientation from the Project Manager/Safety Representative. This orientation outlines his or her duties for safety in daily work activities. Each foreman must know how to conduct a tool box meeting. The following guidelines shall apply:

- Conducting weekly safety tool box meetings is the responsibility of each craft foreman.
- The meeting must be conducted by each foreman with his or her crew on a designated day at the start of the shift using the material furnished by the (Construction Company) Safety Department.
- If no work is performed on the project on the above referenced designated day, then the weekly safety meeting must be conducted on the next scheduled working day. (No exceptions).
- The meetings must provide employees with the opportunity to ask questions regarding safety.
- Each foreman who conducts a tool box safety meeting must have all in attendance sign and date the back of the safety meeting report during the meeting.
- The completed tool box safety report must first be given to the general foreman for review and action and then to the Safety Department for filing purposes.

Safe Work Areas

Each foreman must be familiar with the conditions in each area of the project where members of his or her crew are assigned. Unsafe conditions that exist in the work area must be corrected before work starts when possible, otherwise, the problem must be brought to the attention of the general foreman or the responsible superintendent who will initiate corrective action. The supervisor shall seek the assistance of the Safety Department on complex problems.

Safe Work Practices

When making work assignments, the foreman must inform his or her crew of the safe practices, work methods, and personal protective equipment required. He or she is responsible for ensuring that the crew uses the proper protective equipment and suitable tools for the job. The following specific areas should be continually monitored by each foreman.

- In following the progress of the work assigned, must constantly review the safety procedures and practices of the crew and must initiate corrective action when necessary.
In all operations, especially those that are not routine, make sure that safety precautions and preparations are outlined and followed. The Safety Department should be contacted prior to starting non-routine jobs for assistance.

Talk and impress safety to the crew; set good examples for the crew and follow-up as needed.

Instruct the crew on how to work safely, using all types of personal protective equipment.

Watch for unsafe or inexperienced workers in the crew.

Instruct the crew in the proper handling of hazardous materials.

Keep the crew informed on the job site safety process.

Emergency Procedures

Each foreman must become familiar with the emergency procedures developed for the project so that he or she may provide the leadership required to handle serious injuries, fires, evacuations, etc.

Accident Investigations

Foremen are required to participate actively in the investigation of any incident. Supervisor accident reports are required for the following:

- Personal injury to a crew member.
- Equipment or property damage in the foreman's area of responsibility.
- Near misses that had a potential for serious injury or loss.

The foreman must ensure that all employees under his or her supervision are aware of their obligation to immediately report all injuries, however minor, to first aid or designated person.

Toolbox Safety Meetings

Toolbox safety meetings must conform to the following guidelines:

- The subject material developed by the Safety Department will be typed, reproduced, and distributed to each project, for use by each foreman.
- The subject material should be pertinent to the work being performed.
The meetings must be conducted by each foreman with his crew at the time designated, using the subject material furnished.

The meeting will provide employees with the opportunity to ask questions regarding safety and health.

All attendees must sign and date the safety meeting sheet.

The Safety Department personnel, superintendents, general foremen, and other supervisory personnel must attend these meetings. Non-manual employees will participate in a departmental weekly toolbox meeting. The toolbox safety meetings must be in compliance with OSHA/MSHA requirements. Therefore the following are required:

- Each foreman who conducts a toolbox safety meeting must ensure that all attendees sign and date the back of the form.

- Each foreman will list all safety suggestions and/or question developed during the meeting.

The completed toolbox safety meeting report (Figure 8-2) must be signed by the general foreman, foreman, and superintendent. Required corrective action will be completed prior to returning the sheet to the safety office for filing.

**General Foreman and Foremen's Safety Meetings**

These safety meetings should conform to the following guidelines:

- The subject material should be typed and reproduced for distribution at the meeting, which will be conducted by the Safety Department in conjunction with the senior field representative.

- The following items should be covered at each meeting:
  
  - Review of doctor cases since the previous meetings, identifying principal accident causes, crafts involved, etc., including accident prevention methods to be initiated by responsible individuals.

  - Review of the most frequently noted serious, nonserious, and repeated safety violations, including corrective action required by the responsible individuals.

- The (Construction Company) representative will encourage group discussion on methods of correction, improvement, etc.
The general foreman and foremen's safety meetings, and superintendent's safety meetings must be in compliance with OSHA/MSHA requirements. Therefore, the following are required:

- An attendance list will be passed around for each attendee to sign and date.
- The Project Manager/Superintendent or safety representative will prepare the agenda.
- The Project Manager/Superintendent or safety representative will prepare a written summary of each meeting, highlighting the major items of discussion, unresolved issues, etc.

A copy of the weekly toolbox safety meeting and the written summaries of the general foreman and foremen's meeting and the superintendent's safety meeting, will be kept in the project safety files for review and retention upon completion of project. Each group will be scheduled for a monthly meeting. Attendance at these meetings is mandatory.

**Superintendent's Safety Meeting**

These safety meetings will conform to the following guidelines:

- The subject materials will be typed and reproduced for distribution at the meeting.
- The following items must be covered at each meeting:
  - Review of doctor cases since the previous meeting, identifying principle accident causes, crafts involved, etc., including accident prevention methods to be initiated by responsible individuals.
  - Review of the most frequently noted serious, nonserious and repeated safety violations, including corrective action required by the responsible individuals.
  - Discuss work plant safety procedures for upcoming work.

The supervising safety representative will encourage group discussion on methods of correction, improvements, etc. This meeting may be held in conjunction with other project meetings where superintendent attendance at these meetings is mandatory.
Safety Committees

The jobsite Safety Committee will assist the jobsite in the recognition and elimination of unsafe acts and conditions which may lead to injury or property loss. The Safety Department Senior Field Representative coordinates the organization and structure of the Safety Committee on individual jobsites, as follows:

- The committee should be comprised of a representative group of personnel, both manual and non-manual. The membership should rotate on a periodic basis to allow for maximum participation by jobsite personnel.

- The chairman of the committee must be a representative of jobsite management, with authority to act on pertinent committee recommendations and to report the status of management activity concerning the recommendations. It is recommended that the field superintendent be selected to chair the committee.

- The frequency of meetings should be determined by the amount of constructive activities involving the committee. The subjects of the meetings will be limited to safety problems which impact the jobsite.

- The function of the safety committee should include periodic inspections, assisting management in formulating solutions to major safety problems, recommending subjects for safety meetings, assisting the Safety Department in jobsite monitoring, and initiating corrective action for unsafe acts and conditions.

- Minutes of the safety committee meetings will be documented (Figure 8-3) and sent to the senior (Construction Company) field representative and a copy sent to the (Construction Company) safety manager.
TRAINING SESSION REPORT

Job No. ________________

1. Craft: ________________  
2. Instructor: ________________
3. Date: ________________  
   Hours: ________________
4. Training Course Description: ______________________________________
   ______________________________________
   ______________________________________
   ______________________________________
   ______________________________________
5. Objective: ______________________________________
   ______________________________________
   ______________________________________
   ______________________________________
6. Attendee’s Name (Print)  Badge No.  Attendee’s Name (Print)  Badge No.
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   ______________________________________  __________  ______________________________________  __________

Figure 8-1. Training Session Report
TOOLBOX SAFETY MEETING REPORT

Job No. ______________________

I certify that the attached "safely speaking" material was read and explained to the personnel whose signatures are on the back of this form.

Craft: ________________  Foreman: ________________  Date: ________________

Where meeting held: ______________________  Time meeting held: ______________________

Names and craft numbers of personnel absent: ______________________

__________________________________________

__________________________________________

Topics discussed: ______________________

__________________________________________

Safety questions and/or recommendations developed during meeting: ______________________

__________________________________________

General foreman's signature: ______________________  Date: ________________

Action taken on above suggestions or questions: ______________________

__________________________________________

Superintendent's signature: ______________________  Date: ________________

Action taken on above suggestion or questions: ______________________

__________________________________________

All personnel attending this meeting must sign the back of this report.

Route the report in the following order:


Figure 8-2. Toolbox Safety Meeting Report
(Front of form)
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Comments or suggestions for safety:

Figure 8-2. Toolbox Safety Meeting Report (Cont'd.)
(Back of form)
PROJECT SAFETY COMMITTEE MEETING REPORT

Job No. __________________________

Chairman of meeting: __________________________ Date: __________________

Meeting held at: __________________________ Time of meeting: ______________

Names and badge numbers of personnel absent: __________________________

________________________________________

(1) Review of recent accidents: __________________________

________________________________________

(2) Trends in first aid or medical cases: __________________________

________________________________________

(3) Current project safety and health issues: __________________________

________________________________________

(4) Fire safety, emergency procedures, etc.: __________________________

________________________________________

Action taken on above suggestion or questions: __________________________

________________________________________

All personnel attending this meeting must sign the back of this report.

Figure 8-3. Project Safety Committee Meeting Report
(Front of form)
Foreman's name: ____________________  Craft: ____________________
Location: ________________________  Date: _______________________

<table>
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</table>

Comments or suggestions for safety:

Figure 8-3. Project Safety Committee Meeting Report (Cont’d.)
(Back of form)
This Project Safety Plan outlines the **(Construction Company entity)** (referred to as **(Construction Company)**) recommendations regarding the safety-related obligations and responsibilities of the various entities performing services for **(Client Name)** (referred to as the "owner") at which **(Construction Company)** is acting as the owner’s construction manager, prime contractor, or a combination of the two.

**(CONSTRUCTION COMPANY’S) ROLE AND RESPONSIBILITIES**

This Project Safety Plan is to be used where **(Construction Company)** is acting as (a) the owner's construction manager, managing the construction activities of the numerous contractors with whom the owner has contracted, either directly or through **(Construction Company)** as its procurement agent, or (b) as the owner's prime contractor, with segments of construction being provided by subcontractors. A combination Safety Plan can be developed for projects on which **(Construction Company)** is acting in a "hybrid" role, i.e., constructing certain segments of a project while managing the balance of the construction being performed by third-party contractors.

**(Construction Company)**, when acting as a construction manager or a prime contractor, recognizes its direct responsibility for the safety of its employees, and its responsibility in this regard is defined in its contract with the owner. However, as a construction manager, **(Construction Company)** employs a team of highly trained supervisory non-manual personnel. Also, as a prime contractor, **(Construction Company)** could be involved on a project site with a large number of subcontractor employees. The primary focus of the Project Safety Plan is the safety of the large number of craft workers employed by the various third-party contractors and subcontractors performing construction on the project site.

Thus, an important benefit to the owner of the Project Safety Plan is the application of **(Construction Company)** expertise in the area of safety to the activities of third-party contractors and subcontractors performing construction at the project site.

**(Construction Company)** expertise in this regard is made available to the owner in two major aspects. First, **(Construction Company)** provides recommendations regarding the contractual provisions which obligate each contractor or subcontractor to perform its construction activities with due regard for safety and impose meaningful sanctions in the event of a contractor's or subcontractor's non-compliance with its safety obligations. Second, **(Construction Company)** notifies each contractor or subcontractor of non-compliance and enforces the available contractual sanctions, either as the owner's construction manager or as the prime contractor.
In the formation of the construction contracts between the owner and each third-party contractor, or (Construction Company) and its subcontractors, (Construction Company) recommends the inclusion of general conditions entitled "Safety" and "Termination for Default," plus appropriate indemnification and insurance requirements. The general condition entitled "Safety" places upon each contractor or subcontractor the sole and complete obligation to provide a safe working environment for both its employees and the employees of the other entities at the job site, and to comply with the "Contractor's/Subcontractor's Safety Obligations" section of the Safety Plan. The general condition entitled "Termination for Default" provides (Construction Company) acting as the owner's construction manager or as the prime contractor, the contractual sanctions by which to enforce those obligations. The Safety Plan describes the Contractor/Sub-contractor safety obligations and how (Construction Company) uses the appropriate contract/subcontract language to facilitate compliance.

The Safety Plan contains (Construction Company) recommendations regarding the project safety requirements to which each third party contractor's or subcontractor's safety program must comply, as required by the general condition entitled "Safety." Notice of (Construction Company) authority to monitor that safety program plus the contractor's or subcontractor's general obligations regarding safety will be given to each contractor or subcontractor in the appropriate general condition.

CONTRACTOR/SUBCONTRACTOR OBLIGATIONS

Safety Obligations

Each contractor/subcontractor working on a (Construction Company) project shall be contractually obligated to comply with all statutory safety requirements, and the Project Safety Plan. These combined safety requirements constitute the minimum safety performance acceptable from them. Sample general contractor conditions applicable to safety are shown in Attachment 9-A for contractors, and 9-B for subcontractors. Sample special conditions applicable to safety are shown in Attachment 9-C for contractors and 9-D for subcontractors.

Safety Program

Each contractor/subcontractor will be notified in the bid documents of the requirement to include in their proposal a written safety program which includes detail commensurate with the work to be performed. The contractors/subcontractors project safety requirements will be reviewed during the pre-bid conference and again at the pre-award meeting. The (Construction Company) safety representative should participate in the pre-award meetings for all contracts awarded at the job site. (See Figure 9-1 for the contractor's safety program checklist.)
Designation of Safety Representative

Each contractor/subcontractor shall appoint a qualified safety representative (within 5 days of mobilization) acceptable to (Construction Company) and the client, and hold regularly scheduled meetings to instruct its personnel on safety practices and the requirements of the Project Safety Plan.

Recordkeeping and Reporting

Each contractor/subcontractor shall maintain accurate accident and injury reports and furnish to (Construction Company) a monthly summary of its work related injuries/illnesses and man hours worked on the form shown in Figure 9-2. All fatal or serious injuries must be reported immediately to (Construction Company). The contractor/subcontractor shall conduct a comprehensive accident investigation and submit a complete report to the senior field representative within five working days, or as specified by (Construction Company) after the incident.

Compliance with Safety Program

Each contractor/subcontract, plus any of its subcontractors are required to comply with all of the safety, health, and fire provisions of the contract/subcontract.

Non-Compliance with Safety, Health, or Fire Requirements

(Construction Company) must monitor the safety performance of contractors/sub-contractors working on the project. If violations of the statutory safety requirements, Project Safety Plan, or the client's safety regulations are observed, the responsible contractor/subcontractor must be informed verbally, if possible, and a written notice must be delivered using standard project contract/subcontract procedures (Notice to Contractors). Violations observed must be identified, and a brief description of the violation and the exact location must be given. A reasonable amount of time to evaluate and correct the conditions will be allowed. However, the response time should reflect the seriousness of the violation and must not exceed three (3) days.

If the contractor/subcontractor fails to correct the conditions within the time specified, a meeting should be scheduled with the contractor's/subcontractor's superintendent, the (Construction Company) management representative, the field contract administrator, and the responsible safety representative. This meeting should result in a documented agreement detailing the intended corrective action and abatement.

Failure to reach agreement, or failure to correct the violation, must be documented, and the matter referred to the appropriate (Construction Company) construction manager/project manager for resolution with the contractor's/subcontractor's senior management. At this time the (Construction Company) Procurement Department will be informed regarding the matter.
Failure to Correct Non-Conformance

If the contractor/subcontractor fails to correct the unsafe conditions, *(Construction Company)* may take, depending on the wording of the contract/subcontract, a number of courses of action, such as:

1. **Backcharging:** *(Construction Company)* corrects the unsafe condition and backcharges the contractor/subcontractor. A clause entitled "Back-charges" is normally included in the General Conditions of each contract/subcontract.

2. **Removal of Personnel:** *(Construction Company)* may require the contractor/subcontractor to remove from the jobsite anyone unfit or working in violation of the provisions of the contract/subcontract.

   A clause entitled "Labor, Personnel, and Work Rules" is normally included in the General Conditions of the contract/subcontract.

3. **Optional Termination:** At *(Construction Company)* option, all or part of the contract/subcontract may be terminated for inadequate safety performance.

   A clause entitled "Optional Termination" is normally included in the General Conditions of the contract/subcontract and outlines the termination procedure.

4. **Termination for Default:** For the contractor's/subcontractor's failure to fulfill any of the safety requirements of the contract/subcontract, *(Construction Company)* may default the contractor/subcontractor and terminate the contract/subcontract.

   A clause entitled "Termination for Default" is normally included in the General Condition of the contract/subcontract and outlines the default and termination procedures.

Another course of action is for *(Construction Company)* to declare the contractor/subcontractor in breach of the contract/subcontract.

The Project should never undertake optional termination, termination for default or declare the contractor/subcontractor in breach of contracts/subcontract for non-compliance with contract/subcontract safety requirements without the concurrence of the Home Office Construction Department, Safety Department, Legal Counsel, the Project Manager, and, if required, the client.

**Technical Service Agreements**

Refer to the Project Field Procurement Manual for further information on this subject.
CONTRACTOR/SUBCONTRACTOR REQUIREMENTS

Project Safety Requirement

Contractor/subcontractor shall prepare and submit to (Construction Company) for approval its project safety and health program fully describing the contractor's/sub-contractor's commitments for meeting its obligations to provide safe and healthful working conditions for its employees, and generally contribute to and enhance the safety at the project site. The program shall reference federal and state OSHA/MSHA standards and any other rules and regulations applicable to construction activities in the state of (state name). The project safety and health program shall include, but not be limited to, the following subjects:

New-Hire Safety Orientation Program

Contractor/subcontractor shall provide safety orientation for all new hires and shall familiarize all its employees with the requirements of the contractor's/subcontractor's safety program.

Each new or reassigned employee shall receive a thorough, documented safety orientation. This gives the employee the basic information about the project safety and health program, federal and state OSHA/MSHA, and other applicable safety rules and regulations. If necessary, the contractor/subcontractor shall provide additional safety instructions at a later date for the performance of hazardous or unfamiliar tasks. Employee attendance shall be required and records kept on file in contractor's/subcontractor's office for review by (Construction Company).

The contractor's/subcontractor's new-hire safety orientation shall include, but not be limited to, the following topics:

- Employer/Employee responsibilities under the federal/state OSHA/MSHA Safety and Health Acts
- Eye protection
- Head protection
- Hearing protection
- Respiratory protection
- Safety harnesses and life lines
- Scaffolding
Perimeter guarding

Housekeeping

Fire protection

First aid facilities and emergency procedures

Toxic substances

Special project requirements and procedures

Trenching and excavations

Material handling, rigging procedures, and crane safety

Electrical safety

Weekly Toolbox Safety Meetings

Contractor/subcontractor shall conduct weekly toolbox safety meetings to provide its employees with up-to-date safety information. Employee attendance shall be required and records shall be kept on file in the contractor's/subcontractor's office for review by (Construction Company).

Supervisor's Safety Orientation

Contractor/subcontractor must familiarize all its supervisory personnel with contractor's/subcontractor's safety responsibilities by conducting a supervisor's safety orientation with each supervisor upon promotion or assignment. Each such orientation must cover as a minimum all the subjects outlined below. Orientation records shall be kept on file in the contractor's/subcontractor's office for review by (Construction Company).

Contractor's Safety Program

Contractor/subcontractor shall review its safety program and the Project Safety Plan in detail with each supervisor.
Safety Work Areas

Contractor/subcontractor shall require each of its supervisors to be familiar with the conditions in each area of the project to which employees of each supervisor's crew or group are assigned. The contractor/subcontractor shall direct its supervisors to correct when possible unsafe conditions that exist in the work area before work begins. Otherwise, the problem shall be brought to the attention of the next higher level of supervision for resolution.

Safe Work Practices

Contractor/subcontractor shall require each supervisor, when making work assignments, to inform the crew or group involved of the safety practices, work methods, and personal protective equipment required. Each supervisor shall be responsible for determining that each worker has the proper protective equipment and suitable tools for the work assignment.

Supervising for Safety

Contractor/subcontractor supervisors shall constantly review the safe practices and procedures used by their crews, and initiate corrective action when necessary.

Toolbox Meetings

Contractor/subcontractor shall require each supervisor to conduct a Toolbox Safety Meeting with the entire crew or group at the time specified, using the subject material provided by the contractor/subcontractor.

Supervisor's Safety Meetings

Contractor/subcontractor shall schedule supervisor's safety meetings on a monthly basis. Topics discussed at these meetings must be chosen to assist each supervisor in supervising for safety. Attendance at these meetings shall be mandatory and attendance records shall be kept on file for review by (Construction Company).

Emergency Procedures

Contractor/subcontractor shall familiarize all supervisors with the emergency procedures developed for the project so that they may provide the leadership required to cope with serious injuries, fires, evacuations, and similar situations.
Accident Investigations

Contractor/subcontractor shall require each supervisor to participate actively in the investigation of any accident which results in (a) personal injury to a member of that supervisor's crew or group, (b) equipment or property damage in that supervisor's area of responsibility, or (c) near misses that had a potential for serious injury or death.

First Aid

Contractor/subcontractor shall require each supervisor to notify all employees under his or her supervision of their obligation to immediately report all injuries, however minor, in accordance with established project procedures.

Fire Protection and Prevention

Contractor/subcontractor shall require its supervisors to maintain a constant awareness of the fire potential in their area of responsibility. If a potential fire hazard is noted, the supervisor must initiate corrective action and notify (Construction Company).

Incident Reporting

Contractor/subcontractor shall cooperate with the owner and/or (Construction Company) in investigating any major safety-related incidents. Additionally, the contractor/subcontractor shall immediately investigate and submit to owner and/or (Construction Company) written reports of any accident wherein disabling injuries or fatalities occur, or which results in damage to property. These reports shall be submitted within twenty-four hours of the occurrence.

Safety Meetings

Contractor's/subcontractor's designated safety representative, who shall be a non-manual employee with authority to correct safety problems, shall attend monthly safety meetings with (Construction Company) and/or the owner's project safety personnel.
Section 9: Contractor/Subcontractor Safety Plan

Safety Inspection

Contractor/subcontractor shall participate, through a contractor/subcontractor designated representative acceptable to (Construction Company), in periodic general safety inspection tours conducted by a member or members of the (Construction Company) Safety Department and (Construction Company) contract/subcontract department assigned to the contractor/subcontractor. During these inspections, the contractor's/subcontractor's safety representatives must identify and record safety violations, and list such items for action and immediate correction by the contractor/subcontractor. If the contractor/subcontractor has any subcontractors, a representative of each subcontractor may accompany the inspection. The contractor/subcontractor must provide (Construction Company) with a list of items designed for correction. Contractor/subcontractor shall participate in specialized inspections conducted by (Construction Company) Safety Department which focuses on specific aspects of safety and health, e.g., scaffolding, shorting, electrical hazards, and noise.

Barricades

Contractor/subcontractor shall be responsible for erecting and maintaining any and all required barricades that may be needed to protect its employees.

Safety Signs

Contractor/subcontractor shall be responsible for posting any signs or requirements that will advise its employee of unsafe areas or conditions.

Scaffolds

Contractor/subcontractor shall develop a scaffold-tagging procedure to ensure proper erection of scaffolds and to advise employees if the scaffold is not properly erected.

Confined Spaces

Contractor/subcontractor shall have a confined space entry procedure. This procedure shall include posting, testing, monitoring, and recordkeeping.

Floor and Roof Openings

Contractor/subcontractor shall have a program for securing and marking floor and roof openings to protect employees from falls.

Respiratory

Contractor/subcontractor shall have a respiratory protection program equivalent to the general industry standard.
Hearing Protection

Contractor/subcontractor shall monitor noise levels in its work area, and post signs and issue hearing protection to employees as required.

Crane Safety and Material Handling Program

Contractor/subcontractor shall comply with the (name of project) project crane safety and material handling program. Contractor/subcontractor shall not bring equipment or machinery intended for material or personnel handling on site without filing with (Construction Company) written proof of a current annual inspection. Contractor/subcontractor shall renew any annual inspection report prior to expiration. Failure to maintain current inspection will result in shutdown of the equipment.

Radiography

Contractor/subcontractor if involved in radiography, shall have and implement safe operating procedures for radiological activities as required by all applicable regulations.

Occupational Health

Contractor/subcontractor shall take all reasonable steps and precautions to protect health and minimize danger from all hazards to life and property. The contractor/subcontractor shall conduct occupational health monitoring and/or sampling as required or requested by (Construction Company) to determine the levels of exposure of its employees to hazardous or toxic substances or environmental conditions.

First Aid

The writing of this section depends on the project. Who provides first aid: The owner, (Construction Company), or the contractor/subcontractor.

Employee Sanctions

Contractor/subcontractor shall advise its employees that any employee who jeopardizes his or her health or safety, or the health or safety of others, will receive disciplinary action as specified in the Project Disciplinary Warning Procedure.

Reports

Contractor/subcontractor shall provide a system for submitting reports of all accidents resulting in disabling injuries, fatalities, property/equipment damage, or fire loss to (Construction Company) within twenty-four hours of the incident.
Recordkeeping

Contractor/subcontractor must complete and maintain the OSHA 300 Summary for all safety-related incidents, and be available for inspection and review by (Construction Company). The contractor shall complete injury forms as required after an occupational injury or illness.

Fire Protection and Prevention

Contractor's/subcontractor's operations shall be conducted in such a manner as to (1) not create any fire hazards, and (2) comply with the project fire protection, prevention, and suppression requirements.

Contractor/subcontractor shall provide fire extinguishers that are adequate for potential hazards that may be encountered during its operations and shall instruct its employees in the proper use of such equipment.

Contractor/subcontractor shall verify that the material it proposes to use on the project conforms to the project requirements insofar as flame-resistant and fireproof characteristics are concerned. Specific material in this category include fuels, solvents and coatings, plastic covering material, construction lumber, scaffold planks, paper, boxes, and crating materials.

Contractor/subcontractor may be required to provide manpower for the Project Fire Brigade. Employees assigned to the Project Fire Brigade will be required to attend training sessions and practice drills.

General and Special Conditions

The following General and Special Condition articles are included in each contract:

G.C. ______,  

G.C. ______,  

S.C. ______,  

S.C. ______,  

A copy of each article is included in  

__________________________________________________________________________.
(CONSTRUCTION COMPANY)
PROJECT NAME
PROJECT LOCATION

JOB # ________________________

Date: ________________________

Name of subcontractor: _______________________________________

Working in area: ______________________________________________

Type of work: ________________________________________________

Safety information received:

   (Safety Plan items to review with contractor/subcontractor)

Safety Representative: __________________________________________

Subcontractor Representative: _________________________________

Title: _______________________________________________________

Figure 9-1. Contractors Safety Program Checklist
CONTRACTORS/SUBCONTRACTORS
MONTHLY SUMMARY OF PERSONNEL INJURIES

Contractor Name: 

Contract Number: 

Hours Worked: 

Worker's Comp. Cases: 

Recordable Injuries (OSHA): 

Modified Duty Cases: 

Modified Duty Days: 

Lost Work Day Cases: 

Lost Work Days: 

Recordable Injury Rate: 

Lost Workday Rate: 

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Figure 9.2. Contractors/Subcontractors Monthly Summary of Personnel Injuries and Illnesses
PUBLICITY AND ADVERTISING

CONTRACTOR shall not make any announcement, take any photographs, or release any information concerning this contract, or the project, or any part thereof to any member of the public, press, business entity, or any official body unless prior written consent is obtained from OWNER through (Construction Company).

SAFETY

CONTRACTOR shall be fully and solely responsible for conducting operations under this Contract at all times in such a manner as to avoid the risk of bodily harm to persons and damage to property. CONTRACTOR shall continually and diligently inspect all work, materials, and equipment to discover any conditions which might involve such risks and shall be solely responsible for discovery and correction of any such conditions.

CONTRACTOR shall comply with OWNER'S Project Safety Plan in addition to maintaining a safety program in accordance with CONTRACTOR'S obligations under general conditions clause entitled INDEMNITY, hereof, apply to any liability arising in connection with or incidental to, CONTRACTOR'S performance or failure to perform as provided in this clause entitled SAFETY.

(Construction Company) will notify OWNER of any instances of non-compliance with OWNER'S Project Safety Plan or CONTRACTOR'S safety process of which (Construction Company) is aware. Neither OWNER nor (Construction Company) shall be responsible for supervising the implementation of CONTRACTOR'S safety process, and neither OWNER nor (Construction Company) shall have responsibility for the safety of CONTRACTOR'S or its subcontractor's employees.

CONTRACTOR'S failure to correct an unsafe condition after notice thereof shall be grounds for an order to suspend the affected operations until the unsafe condition is corrected and, if the violation continues, termination of this contract for such failure.

CONTRACTOR shall appoint a safety representative acceptable to OWNER and shall participate in periodic safety meetings with (Construction Company). CONTRACTOR shall instruct its personnel on the requirements of the OWNER'S Project Safety Plan and CONTRACTOR'S safety process and shall coordinate with other contractors and subcontractors on safety matters.

CONTRACTOR shall furnish safety equipment and enforce the use of such equipment by its employees.

CONTRACTOR shall maintain accurate accident and injury reports and shall furnish (Construction Company) a monthly summary of injuries and manhours lost due to injuries.

FIRE PREVENTION

Within thirty calendar days after award of contract, and in any event, prior to commencement of work at site, CONTRACTOR shall submit its plan for fire prevention and protection to (Construction Company) for acceptance in accordance with the Special Condition of this contract entitled "SAFETY AND SECURITY PROGRAMS".

Attachment 9-A. Publicity and Advertising
(Contractor Duties and Responsibilities)
PUBLICITY AND ADVERTISING

SUBCONTRACTOR shall not make any announcement, take any photographs, or release any information concerning this subcontract, or the project, or any part thereof to any member of the public, press, business entity, or any official body unless prior written consent is obtained from CONTRACTOR.

SAFETY

SUBCONTRACTOR shall be fully and solely responsible for conducting all operation under this Subcontract at all times in such a manner as to avoid the risk of bodily harm to persons and damage to property. SUBCONTRACTOR shall continually and diligently inspect all work, materials, and equipment to discover any conditions which might involve such risks and shall be solely responsible for discovery and correction of such conditions.

SUBCONTRACTOR shall comply with the CONTRACTOR'S Project Safety Plan, in addition to maintaining a safety program in accordance with SUBCONTRACTOR'S established practices. SUBCONTRACTOR shall have sole responsibility for implementing its safety program. All of SUBCONTRACTOR'S obligations under General Conditions Clause entitled INDEMNITY, hereof, apply to any liability arising in connection with or incidental to SUBCONTRACTOR'S performance or failure to perform as provided in this General Conditions Clause entitled SAFETY.

Neither OWNER nor CONTRACTOR shall be responsible for supervising the implementation of SUBCONTRACTOR'S safety program, and neither OWNER nor CONTRACTOR shall have responsibility for the safety of SUBCONTRACTOR'S or its subcontractor's employees.

SUBCONTRACTOR'S failure to correct an unsafe condition after notice thereof shall be grounds for an order to suspend the affected operations until the unsafe condition is corrected and, if the violation continues, termination of this subcontract for such failure.

SUBCONTRACTOR shall appoint a safety representative acceptable to CONTRACTOR and shall participate in periodic safety meetings with CONTRACTOR. SUBCONTRACTOR shall instruct its personnel on the requirements of the Project Safety Plan and SUBCONTRACTOR'S safety program and shall coordinate with other subcontractors on safety matters.

SUBCONTRACTOR shall furnish safety equipment and enforce the use of such equipment by its employees.

SUBCONTRACTOR shall maintain accurate accident and injury reports and shall furnish CONTRACTOR a monthly summary of injuries and manhours lost due to injuries.

FIRE PREVENTION

Within thirty calendar days after award of subcontract, and in any event, prior to commencement of work at site, SUBCONTRACTOR shall submit its plan for fire prevention and protection to CONTRACTOR for acceptance in accordance with the Special Condition of this subcontract entitled "SAFETY AND SECURITY PROGRAMS."

Attachment 9-B. Publicity and Advertising
(Subcontractor Duties and Responsibilities)
SAFETY AND SECURITY PROGRAMS

In performance of work under this contract, CONTRACTOR shall establish and maintain the following safety and security programs:

(a) A safety program shall be submitted in writing to (Construction Company) for review and coordination with other JOBSITE activities within thirty (30) days of contract award. Such program shall be in conformance with the specific requirements of the Project Safety Plan and shall provide:

1. Designation of one or more qualified individuals as safety representative to attend all (Construction Company) safety meetings and be responsible for verifying conformance to safety standards.

2. Specific review and approval of all work plans and methods by the safety representative.

3. Periodic inspection by the safety representative of CONTRACTOR'S work and storage areas to assure safe condition and practices.

4. Immediate reporting of any and all deaths, injuries, and damage to property to (Construction Company).

5. Full cooperation in the conduct of inspections by OWNER, or governmental agencies. Copies of OSHA citation notices shall be submitted to (Construction Company) immediately upon receipt.

6. Compliance with all applicable laws and regulations, and directives of OSHA and other agencies of competent jurisdiction.

(b) A fire prevention and protection program shall be submitted in writing to (Construction Company) for review and coordination with other JOBSITE activities within thirty (30) days of subcontract award. Such program shall include:

1. Restriction of burning to designated areas. No unauthorized fires shall be permitted on JOBSITE.

2. Assignment of fire watches, trained and equipped to prevent or control fires, for all welding and burning of operations.

3. Property identification, storing, handling, and use of inflammable material to prevent accidental ignition.

4. Adequate fire extinguishing equipment appropriate for the operation being performed shall be provided by CONTRACTOR. CONTRACTOR'S personnel shall be trained in the maintenance of use of such equipment.

5. Evacuation procedures and fire drills as required by (Construction Company).

Attachment 9-C. Safety and Security Programs
(Contractors Duties and Responsibilities)
(c) A security program, implementing and supplementing the project security program, shall be submitted in writing to (Construction Company) for approval and coordination with other JOBSITE activities. Such program shall include:

1. Controlled access to office, warehouse, material, and equipment sites.
2. Accountability procedures for the requisition and issue of materials.
3. Periodic security checks of all work areas assigned to CONTRACTOR.
4. Coordination and compliance with project security programs.
5. Reporting of incidents of loss, theft, or vandalism to (Construction Company) promptly and subsequently detailed in writing.

Notwithstanding any of the established OWNER, (Construction Company), or CONTRACTOR programs required herein, CONTRACTOR is responsible for maintaining property safety, fire prevention, and security conditions at JOBSITE.

Attachment 9-C (Cont'd.)
SAFETY AND SECURITY PROGRAMS

In performance of work under this subcontract, SUBCONTRACTOR shall establish and maintain the following safety and security programs:

(a) A safety program shall be submitted in writing to CONTRACTOR for review and coordination with other JOBSITE activities within thirty (30) days of subcontract award. Such program shall be in conformance with the specific requirement of the OWNER’S Project Safety Plan and shall provide:

1. Designation of one or more qualified individuals as safety representative to attend all CONTRACTOR safety meetings and be responsible for verifying conformance to safety standards.

2. Specific review and approval of all work plans and methods by the safety representative.

3. Periodic inspection by the safety representative of SUBCONTRACTOR’S work and storage areas to assure safe conditions and practices.

4. Immediate reporting of any and all deaths, injuries, and damage to property to CONTRACTOR.

5. Full cooperation in the conduct of inspections by CONTRACTOR, OWNER, or governmental agencies. Copies of OSHA citation notices shall be submitted to CONTRACTOR immediately upon receipt.

6. Compliance with all applicable laws and regulations, directives of OSHA, and other agencies of competent jurisdiction.

(b) A fire prevention and protection program shall be submitted in writing to CONTRACTOR for review and coordination with other JOBSITE activities within thirty (30) days of subcontract award. Such program shall include:

1. Restriction of burning to designated areas. No unauthorized fires shall be permitted on JOBSITE.

2. Assignment of fire watches, trained and equipped to prevent or control fires, for all welding and burning operations.

3. Property identification, storing, handling, and use of inflammable material to prevent accidental ignition.
(4) Adequate fire extinguishing equipment appropriate for the operations being performed shall be provided by SUBCONTRACTOR and SUBCONTRACTOR'S personnel shall be trained in the maintenance and use of such equipment.

(5) Evacuation procedures and fire drills as required, by CONTRACTOR.

(c) A security program, implementing and supplementing the project security program, shall be submitted in writing to CONTRACTOR for approval and coordination with other JOBSITE activities. Such program shall include:

(1) Controlled access to office, warehouse material, and equipment sites.

(2) Accountability procedures for the requisition and issue of materials.

(3) Periodic security checks of all work areas assigned to SUBCONTRACTOR.

(4) Coordination and compliance with project security programs.

(5) Reporting of incidents of loss, theft, or vandalism to CONTRACTOR promptly and subsequently detained in writing.

Notwithstanding any of the established CONTRACTOR or SUBCONTRACTOR programs required herein, SUBCONTRACTOR is responsible for maintaining property safety fire prevention, and security at JOBSITE.
Employee health, both immediate and long term, must be protected on the job. This is done by evaluating and controlling chemical, physical, and biological hazards on the jobsite.

A hazardous chemical exposure may be liquid, solid, dust, fume, mist, vapor, or gas. It commonly enters the body through inhalation, skin absorption, or ingestion. Other possibilities for exposure come from injection and open wounds.

Physical hazards may come from non-ionizing radiation, ionizing radiation, noise, pressure, vibration, illumination, and heat stress.

Biological hazards (such as bacteria, fungi, insects, viruses, and animal bites) are normally not found on a construction jobsite.

**RECOGNITION OF CHEMICAL AND PHYSICAL HAZARDS**

(Construction Company) safety and health personnel must be familiar with all hazardous materials to be used on the jobsite so that acceptable environmental controls can be established. For example, if hazardous ingredients in trade name substances cannot be identified because there is not enough information on the label, the jobsite must get the manufacturer's Material Safety Data Sheets (Figure 10-1). Or, safety personnel should have an American Industrial Hygiene Association (AIHA) certified laboratory determine if a potential health hazard exists.

Further information concerning control of hazardous materials can be obtained from toxicology and hazardous data guides such as those listed under References.

When an employee is exposed to extremely hazardous chemicals (Table 10-A), the (Construction Company) Safety Department must be contacted. To determine if anyone was excessively exposed, consult the Threshold Limit Value Booklet (by the ACGIH) or OSHA General Industrial Safety Standards 1910.

(Construction Company) Procurement, Engineering, and Safety Departments must establish a program that reviews construction materials for hazardous content before they are purchased (see E.P.A. agency for a generic hazardous materials control program). In some cases, there may be another material or process that is less hazardous (usually having a higher permissible exposure limit value) that could be successfully substituted on the job. The work area must then be continually surveyed to ensure that all controls are in use and safeguards are maintained to prevent any excessive exposures.
Airborne Contaminants

Employees must not be exposed to any material or substance (by inhalation, skin absorption, or ingestion) that exceeds the permissible exposure limit concentrations allowed in the table of Threshold Limit Values (TLVs) of Airborne Contaminants for 1970, Ref. OSHA Construction Safety Standards 1926.55. If a contaminant cannot be found in this table, refer to the current TLV booklet published by The American Conference of Governmental Industrial Hygienists.

Suitable administrative or engineering controls must be implemented to keep contaminants at acceptable levels. Frequent environmental sampling must be done to ensure that control systems are maintaining contaminants below the acceptable levels. When engineering controls cannot feasibly achieve full compliance, personal protective equipment must be used. Use of respirators must comply with 29 CFR 1926.103 and all applicable standards. Page 10-10 explains the (Construction Company) respiratory protection program.

Toxic Materials

Special handling procedures for toxic materials such as asbestos, beryllium, cadmium, carbonyls, lead, and identified carcinogens must be specified. Ventilation systems must include filtration, absorption, or precipitation to prevent dispersal into other work areas. Storage, handling, and identification of toxic materials must be controlled. Sampling must be performed on a frequent basis. Industrial hygiene and toxicology guides give special precautions to be used when employees are exposed to toxic materials.

Solvents

The use of solvents on the job site presents a dual problem because they are sometimes toxic and flammable. Controls must be established that reduce exposures to acceptable toxic levels while at the same time preventing a buildup of flammable concentration.

When selecting a solvent, consideration should be given to solvents with the least toxic effects (and the highest permissible exposure limit), a higher flammable limit, and low volatility. When recommending solvents, safety specifications and other specifications such as engineering, quality control, and NRC must also be considered.

SAMPLING

To maintain a healthy work environment, sampling must be done for any suspected hazardous chemical, physical, or biological agents. The sampling varies depending on the hazardous material. Personnel must thoroughly understand the material and its use in construction before a proper sampling strategy can be detailed.
There are many direct reading instruments and detector tubes available from safety suppliers for sampling. When using direct reading devices, follow the manufacturer's direction before and after every sampling session. All indirect sampling must be conducted by someone trained in proper industrial hygiene sampling techniques. All sample analyses must be done by an American Industrial Hygiene Association accredited laboratory.

The results of the sampling are compared to the OSHA Permissible Exposure Limit (PEL). If a PEL is exceeded, the monitoring data will indicate the most effective control measure for lowering the exposure below the PEL. Thorough records of all direct and indirect sampling must be kept per OSHA 1910.20, medical records access to employee exposure and medical records.

Documentation is imperative for all sampling. Be sure to document and record all readings, dates, and times of sampling, proper employee names, social security numbers, and any other information deemed appropriate for that task.

The following items must be considered when setting up the jobsite industrial hygiene data record keeping system:

- Type of survey conducted (i.e., H₂S survey, silica sand, CO, etc.)
- Job site name and number
- Date and time of survey
- Name and title of person conducting survey
- Location and elevation
- Suspected contaminant and manufacturer's name (attach MSDS if possible)
- Number of employees sampled
- Craft of employees sampled
- Total time exposed per 8-hour shift
- Type of sample taken (if breathing zone, indicate employee name and number)
- Sampling equipment type, manufacturer, serial number, and calibration data
- Environmental data - air movement in cubic feet per minute (CFM), temperature, relative humidity, elevation
Industrial hygiene controls

Engineering or administrative controls

The exposure in parts per million, milligrams per cubic meter, percent \( O_2 \) or Lower Explosive Limit (LEL)

The OSHA PEL or American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values

If detection tubes are used, they must be preserved afterwards by taping the ends and keeping the tubes in the sampling file with a reference survey number.

If personal breathing zone samples are taken (the zone is a 2-foot sphere around the head), record the following data for the employer's medical record file:

- Name, number, and craft of employee
- Date of survey
- Location of survey
- Type of exposure
- Time of exposure
- Type of control
- Actual exposure in parts per million (ppm) \( \text{mg/m}^3 \), or percent
- Current OSHA PEL
- Name and employee number of person(s) conducting the sampling
Maintenance and Calibration Records

One of the most important aspects of any industrial hygiene survey is the reliability and accuracy of the survey instruments. They must be maintained and calibrated, before and after each survey, according to the manufacturer's specification and good industrial hygiene practices. Records of all maintenance and calibration must be kept, with the following being stressed:

- **Maintenance**
  - Date
  - Time
  - Instrument, name, manufacturer, and serial number
  - Maintenance performed
  - Name and title of person performing the maintenance

Only maintenance that is recommended by the manufacturer is conducted on the jobsite.

- **Calibration**
  - Date
  - Time
  - Elevation
  - Temperature
  - Instrument, name, manufacturer, and serial number
  - Type of calibration
  - Reading during calibration
  - Calibration subjected to and actual reading, i.e., 55 percent methane
  - Name and title of person conducting the calibration

There are two types of equipment calibration: electronic and physical. Electronic calibration is done by turning the instrument on to a test mode with a preset value. If the needle does not move forward to the preset value, the instrument must then be adjusted by a pod on or inside the instrument. Physical calibration is done by subjecting an instrument to a known test environment, for example, subjecting an explosive meter to a 55 percent methane gas mixture or calculating the flow rate of a detector tube pump using a buret and soap solution. Some instrumentation, such as noise sound level meters and air sampling pumps, should be calibrated before and after the survey.

**Sampling Devices for Environmental Measurement**

The following is a list of the minimum recommended sampling devices for a (Construction Company) job site:

- Combination oxygen monitor and combustible/flammable gas detector with audible and visual alarm along with calibration gases.
Direct reading gas detector tubes, with appropriate pump, as specified by the manufacturer; commonly used tubes include:

- Acetone
- Ammonia
- Carbon monoxide
- Hydrogen sulfide
- Methyl ethyl ketone (2-Butanone)
- Methyl chloroform (1,1,1 - Trichloroethane)
- Toluene

Type II sound level meter and calibrator.

Illumination meter, cosine corrected.

Direct reading instruments where a predominant hazard is found on a job site, i.e., carbon monoxide, benzene, etc.

**OCCUPATIONAL HEARING CONSERVATION PROGRAM**

The basic elements of the (Construction Company) Occupational Hearing Conservation Program include noise survey procedures, controls, hearing protection, and education and training.

**Controls**

Controls should be used whenever it is possible to significantly lower the noise exposure of the employees. This is especially important if the engineering controls reduce the noise to levels below that accomplished when available hearing protection is used. Examples of controls to consider include preventive maintenance programs, enclosing construction processes with sound dampening material, purchasing quiet equipment, baffles, and mufflers.

**Hearing Protection**

Hearing protection should be worn by all employees who are exposed to excessive noise per OSHA 1926.52. There are very few medical conditions that would prevent employees from wearing hearing protection. Protection may be of several types, such as disposable plastic form inserts, reusable ear plugs or muffs. Each hearing protector has advantages and disadvantages.
Selection should be based on the intensity and frequency of the noise. For example, inserts generally protect more efficiently at high frequencies, while muffs are more protective at low frequencies. Check the manufacturer's specifications. Generally, for the construction industry, the disposable (spongy) insert yields the greatest protection with the least amount of maintenance and cost.

**Education and Training**

Informing supervisors and the employees about this program is important. The subjects covered should include reasons for the program; how excessive noise affects hearing; and the proper use of the hearing protection device, which includes insertion in the ear, sanitary storage, cleaning, and the length of time the protection must be worn.

As with all safety equipment, it is the first line supervisor's responsibility to ensure that hearing protection is properly used. Probably the easiest rule of thumb when educating employees on excessive noise exposure is that if employees have to raise their voices for normal conversation at three feet due to background noise, then they are exposed to greater than 90 decibels and a formal noise survey must be performed.

**RESPIRATORY PROTECTION PROGRAM**

The purpose of this program is to protect employees from respiratory hazards and to comply with the OSHA Respiratory Protection Standard 29 CFR 1910.134, 42 CFR Part 84, 1910.139 (TB), and ANSI Z88.2 - 1980. This program provides project supervisors with information to establish and direct a respiratory program at the jobsite. (Construction Company) policy is that respirators are to be used only after the Safety Department has evaluated the work process, the exposure, and alternative control measures such as dilute or exhaust ventilation, wet methods, airless spray, and substitute products. If engineering controls do not eliminate the exposure, then respiratory protection can be used for employee protection.

**Administration of Responsibilities**

The supervisor has total responsibility for administration of this program. Effective administration includes the following:

- Work area surveillance to determine the type and concentrations of air contamination found on each construction site

- Respirator selection, using the guidelines set forth in this manual and manufacturer's recommendations

- Employee training in the proper use of the respirators
Section 10: Industrial Hygiene

- Respirator fit testing
- Respirator maintenance and cleaning procedures
- Purchasing procedures and inventory control
- Specific work site procedures addressing routine and foreseeable emergency situations
- Guidelines for emergency respirator use
- Medical Surveillance of employees using respiratory protection devices
- Program evaluation

Six sets of records must be maintained for proper surveillance and control of this program:

- Industrial Hygiene Monitoring Data Sheet (Figure 10-2)
- Medical surveillance and job assignment data (see page 10-19 for form requirements)
- Respirator Care and Maintenance Record (Figure 10-3)
- Emergency Equipment Inspection Sheet (Figure 10-4)
- Respirator Protection Education and Fit Testing Records (Figure 10-5)
- Respirator Usage List (Figure 10-6)

Definitions

**Air-purifying respirator**
A respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

**Approval**
A certificate or formal document issued by NIOSH stating an individual respirator or combination of respirators has met the minimum requirements of 42 CFR 84 and the applicant (manufacturer) is authorized to use and attach an approval label to any respirator, container or respirator instruction card.

**Atmosphere supplying respirator**
A respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.
**Canister or cartridge**
A container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.

**Emergency situation**
Any occurrence such as, but not limited to, equipment failure rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.

**Escape-only respirator**
A respirator intended to be used only for emergency exit.

**Filtering facepiece (dust mask)**
Means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

**Filter or air purifying element**
A component used in respirators to remove solid or liquid aerosols from the inspired air.

**Fit test**
The use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual. (See also Qualitative fit test QLFT and Quantitative fit test QNFT.)

**Fume**
A solid condensation particle, generally less than 1 micrometer in diameter.

**Gas**
An aeriform fluid which is in a gaseous state at ordinary temperature and pressure.

**Loose-fitting facepiece**
A respiratory inlet covering that is designed to form a partial seal with the face.

**Mist**
A liquid condensation particle with a size ranging from submicroscopic to macroscopic.

**Negative pressure respirator (tight fitting)**
A respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

**Physician or other licensed health care professional (PLHCP)**
An individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by the respiratory protection standard.

**Positive pressure respirator**
A respirator in which the pressure inside the respirator inlet covering exceeds the ambient air pressure outside the respirator.
Section 10: Industrial Hygiene

**Powered air purifying respirator (PAPR)**
An air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

**Qualitative fit test (QLFT)**
A pass/fail fit test to assess the adequacy of respirator fit that relies on the individual’s response to the test agent.

**Quantitative fit test (QNFT)**
An assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

**Respirator**
Any device designed to provide the wearer with respiratory protection against inhalation of a hazardous atmosphere.

**Service life**
The period of time that a respirator, filter of sorbent, or other respiratory equipment provides adequate protection to the wearer.

**Tight-fitting facepiece**
A respiratory inlet covering that forms a complete seal with the face.

**User seal check**
An action conducted by the respirator user to determine if the respirator is properly sealed to the face.

**Work Area Surveillance**

Work area conditions must be surveyed to determine the degree of employee exposure or stress. The surveillance should include the following:

- Identify substances that cause, or may cause, employees’ overexposure
- Determine the estimated average exposure concentration that can be expected for eight (8) hours of normal work operations
- Determine whether feasible engineering controls are, or can be provided to reduce or eliminate the exposure
The surveillance can be conducted by using direct detection tubes, air sampling instruments, and evaluation of the material according to instructions on its Material Safety Data Sheet. The method of surveillance should be coordinated with the Safety Department. If warranted, a field industrial hygiene evaluation shall be conducted.

The protection factor (PF) must always be considered when selecting respiratory protection. The PF represents the efficiency of a respirator and is calculated using:

$$PF = \frac{\text{ambient air concentration}}{\text{concentration inside face piece or enclosure}}$$

It is recommended that when selecting respirators, the project should secure from the manufacturer the PFs and manufacturer's recommendation of each type and model of respirator prior to purchase.

**Respirator Selection Process**

**Step 1.** Identify the aerosol contaminants (name) and form (oil or non-oil) regardless of concentration. The Material Safety Data Sheet (MSDS) can be helpful with this step. If the form is unknown, consider it as an oil.

**Step 2.** Determine concentrations of air contaminants. If any of the following situations exist, do not use these guideline. These situations are:

- Unknown contaminant concentration(s),
- Contaminant concentration(s) $\geq$ the immediately dangerous to life or health (IDLH) levels,
- Oxygen concentration $< 19.5\%$ or the potential exists for the oxygen concentration to fall below $19.5\%$.

If none of these situations exist, proceed to Step 3.

**Step 3.** Determine the hazard ratio (HR) for all substances. The HR is the ratio of the hazard air concentration/occupational exposure limit.

- If the highest HR is $\leq 10$, use either a half or full facepiece respirator.
- If the highest HR is $\leq 50$ (i.e., $10 < HR \leq 50$), use a full facepiece.
- If the HR $> 50$, another type of respirator must be selected.
Section 10: Industrial Hygiene

Step 4. Determine filter efficiency required. Use a Class 100 (99.97% efficiency) filter if required by a specific regulation or regulatory company policy. If no such regulation or policy exists, a Class 95 (95% efficiency) filter may be used.

Step 5. Determine the filter series needed. If no oil is present (<0.1 mg/m$^3$), an N-, R-, or P-series filter may be selected for the respirators selected in Step 3. If oil is present, either an R- or P-series filter must be selected. R-series filters must be changed after 8 hours of use or after the respirator is loaded with (exposed to) 200 mg of aerosol.

The presence of oil may be an important point in the selection of the new filters, however, no guidance has been given by any regulatory agency regarding how to decide if enough oil is present to affect filter efficiency. While virtually all atmospheres probably contain oil, it is unlikely that small amounts of oil will adversely affect filter efficiency.

Where oil is suspected, but air samples have not been taken to determine its presence, an R- or P-series filter should be selected.

Step 6. Once a specific filter class is identified (e.g., N95) that meets the regulatory needs, workplace and respirator characteristics should be identified in order to select the most appropriate respirator within the class. In fact, with the new filters, these other characteristics or features may be more important to selection than the approval. These characteristics include:

- Respirator maintenance capabilities (reusable versus filtering facepiece),
- Respirator fit as indicated by an appropriate fit test,
- Respirator compatibility with other personal protection equipment (e.g., welding helmet, safety glasses, goggles),
- Heat and spark resistance, such as welding operations,
- Respirator/filter durability,
- Potential for excessive filter loading, such as in spray painting,
- Breathing resistance/wearer acceptance, and
- Capability for removal of nuisance level organic vapors or acid gases.
The three categories of resistance to oil aerosols are:

- **AN@** for Not resistant to oil
- **AR@** for Resistant to oil
- **AP@** for Oil Proof

The following is a condensed list of PFs:

<table>
<thead>
<tr>
<th>Type of Respirator</th>
<th>Protection Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air purifying</td>
<td></td>
</tr>
<tr>
<td>Single use dust</td>
<td>5</td>
</tr>
<tr>
<td>Half or quarter mask fume</td>
<td>10</td>
</tr>
<tr>
<td>Full facepiece</td>
<td>50</td>
</tr>
<tr>
<td>Supplied air</td>
<td></td>
</tr>
<tr>
<td>Demand, half mask</td>
<td>10</td>
</tr>
<tr>
<td>Demand, full mask</td>
<td>50</td>
</tr>
<tr>
<td>Pressure demand, half mask</td>
<td>1,000</td>
</tr>
<tr>
<td>Pressure demand, full mask</td>
<td>2,000</td>
</tr>
<tr>
<td>Continuous flow, hood, helmet, or suit</td>
<td>2,000</td>
</tr>
<tr>
<td>Self-contained breathing apparatus</td>
<td></td>
</tr>
<tr>
<td>Open circuit, demand, full facepiece</td>
<td>50</td>
</tr>
<tr>
<td>Open circuit, pressure demand, full facepiece</td>
<td>10,000</td>
</tr>
</tbody>
</table>

To calculate the effectiveness of a given respirator, the ambient containment concentration must be monitored. Once this is determined, the monitored concentration must be weighted against the following:

\[
PF \times \text{permissible exposure limit} = \text{maximum use concentration}
\]

Respirator use must be re-evaluated when process procedures or products are changed.

**Medical Evaluation**

No employee can be assigned work that requires the use of a respirator unless he or she is physically capable of doing the work. The **Construction Company** manager of Medical Services has defined "physically able" as having no abnormalities indicated in the medical history and examination, meeting the primary function, and blood pressure criteria as defined below. A medical evaluation shall be completed before employees are fit tested or required to use the respirator in the workplace.
The medical examination must include the following:

- Report of Medical History and Examination (Figure 10-7)

- A follow-up examination may be required if positive responses are given to certain sections in the Report of Medical History.

- The licensed health care professional (PLHCP) shall receive a copy of the employer’s written respirator program, and shall be the one who conducts the medical evaluations.

- Employer shall allow the employee with an opportunity to discuss the questionnaire and results of the examination with the PLHCP.

**Medical Determination**

*(Construction Company)* shall determine the employee’s ability to wear a respirator by the following:

- A written recommendation regarding the employee’s ability to use the respirator from the PLHCP.

- Any limitations on respirator use related to the medical condition of the employee, or relating to workplace conditions in which the respirator will be used.

- Are any follow-up medical evaluations needed?

- A statement that the PLHCP has provided the employee with a copy of the written recommendation.

**Selecting and Using a Respirator**

The potential hazard exposure determines what kind of respirator is used. The following must be considered:

- What is the airborne contaminant concentration where the respirator will be used? (Refer to page 10-16.)

- What type of filter is appropriate for the contaminant?

- What is the permissible exposure limit, threshold limit value, or short-term exposure limit (STEL) for the contaminant?
Does the contaminant contain oil?

Could the contaminant concentration be termed immediately dangerous to life or health? (IDLH)

If the contaminant is flammable, does the estimated concentration approach the lower explosive limit, or do dust concentrations create a potential explosive problem?

Does the contaminant have adequate warning properties, such as odor, irritation or taste?

Does the contaminant irritate the eyes at the estimated concentration?

What type of respirator will give the required maximum protection?

The following respiratory hazards included in selection are:

- Oxygen deficiency
- Gases, vapors
- Particles, including dusts, fumes and mists
- Oil or non-oil aerosols

**Mechanical Filter Respirators**

Mechanical filter respirators protect against airborne particulate matter such as dust, mists, metal fumes, and smokes. Three styles of respirators are used: quarter masks with a single cartridge, and disposable units.

Mechanical filter respirators must not be used in environments immediately dangerous to life or health or in atmospheres containing less than 19.5 percent oxygen. High efficiency filter cartridges must be used when the employee is exposed to highly toxic particulate matter or to radionuclides. When working where eye irritation is a problem, a full facepiece unit must be used. Any approved filter respirator can be used for nuisance dusts as long as the protection factor is not exceeded. Do not use a more efficient respirator than necessary. For example, a fume-type cartridge for nuisance dust will clog up rapidly, thus lowering usage time.

**Chemical Cartridge Respirators**

Chemical cartridge respirators protect against low concentrations of organic vapors and gases, alkaline gases, acid gases, mercury vapors, pesticides, paint vapors and mists, organic vapors or gases combined with acid, or alkaline gases. It also protects against any of these materials combined with dust, fumes, or mists.
Chemical cartridge respirators must not be used for exposures to air contaminants that cannot be easily detected by odor or irritation. For example, they must not be used to protect against methyl chloride or hydrogen sulfide. The former is odorless; the latter, while foul smelling, paralyzes the olfactory nerve so quickly that odor detection is unreliable. Chemical cartridge respirators must not be used for protection against gases that are not effectively stopped (for example, carbon dioxide).

Do not use chemical cartridge respirators for the materials listed below. Instead use air-line and supplied or special use respirators.

**Air-Line Respirators**

Air-line respirators protect against all airborne contaminants in concentrations that are not immediately hazardous to life or health. The air-line respirator consists of a half-mask, full facepiece, hood, or helmet to which respirable air is supplied. Three types of air supplies may be used:

- **Continuous flow** maintains the mask under positive pressure
- **Demand air flow** supplies air only when the wearer inhales
- **Pressure demand** keeps the mask under positive pressure, but limits air requirements

Compressed air must meet Class "D" breathing air. This requires that carbon monoxide levels not exceed 20 ppm, carbon dioxide not exceed 1,000 ppm, and condensed hydrocarbons not exceed 5 mg/m³.

With internally-oil-lubricated piston-type compressors, over-heating may produce carbon monoxide. Weekly tests for carbon monoxide must be made.

If a continuous monitor is not in place, a high temperature alarm must be. High temperature and continuous carbon monoxide alarms should be placed in the operating engineer's shack, with written procedures of what to do if the alarm goes off. Accurate records must be kept on all calibration, maintenance, and the measurements of carbon monoxide measuring equipment, high temperature alarm, and the compressor itself.

When compressed air is used for breathing air, a trap and carbon filter must be installed in line to remove oil, water, scale, odor, and taste. A pressure reducing valve must be installed to reduce air pressure to respirator requirements, along with the above carbon monoxide requirements. Plant-compressed air must never be used for breathing air when an antifreeze has been injected into the system.
A buddy system based on pre-established rescue procedures must be used when using air-line respirators. Employees must be trained in their proper use and limitations. Also, the respirators must be properly inspected, cleaned, and maintained after each use.

**Training**

Selecting the appropriate respirator for a given hazard is important. Using it properly is equally important. Proper use is ensured by carefully training safety personnel, supervisors, and the employees in the selection, use, and maintenance of respirators. The training must include the following:

- Handling the respirator
- Why the respirator is necessary and how improper fit, usage or maintenance can compromise the protective effect
- Demonstrations and practice in wearing, adjusting, and determining the fit of the respirator
- What the limitations and capabilities are of the respirator
- Testing of facepiece to face seal
- Wearing in normal air
- Wearing the respirator in a test atmosphere and checking the seals
- Discussions of the engineering and administrative controls in use and why respirators are needed
- How to recognize medical signs and symptoms that may limit or prevent the effective use of the respirator
- Explanation of the nature of the respiratory hazard and what happens when the respirator is not used properly
- Explanation of why a particular type of respirator has been selected
- Discussion of how to recognize and handle emergencies if the respirator malfunctions
- Recognize the appropriate type of filter and its requirements and limitations
Procedures for maintenance and storage of the respirators

Re-training shall be conducted annually or when changes take place

**Supervisor Training**

Supervisors must have thorough knowledge of respirators and respiratory protection practices. Their training must include, but not necessarily be limited to:

- Basic respiratory protection practices
- Selection and use of respirators to protect employees against every hazard to which they may be exposed
- Legal requirements pertinent to the use of respirators
- Supervisor’s responsibilities

**Employee Instruction and Training**

The extent and frequency of employee training depends primarily on the nature and extent of the hazard. If the hazard is a nuisance dust, for example, the danger from the nuisance dust is not likely to be serious. However, a single exposure to highly toxic substances may have serious consequences.

Because proper respirator use depends especially on the wearer’s motivation, it is important that the need for the respirator be explained fully. The basic training program must include:

- Instruction in the nature of the hazard, whether acute, chronic, or both, and an honest appraisal of what may happen if the respirator is not used
- Discussion of why this is the proper type of respirator for a particular purpose
- Discussion of the respirator’s capabilities, limitations, and proper fit-testing procedures
- Instruction, training, and actual use of respirator (especially one for emergency use) and close, frequent supervision to ensure that it continues to be used properly
- Classroom and field training in recognizing and coping with emergencies
- Other special training, as required, depending on the exposure hazard
Most respirator manufacturers have established respirator training programs that are available to their customers.

When employees test the facepiece-to-face seal of the respirator and wear it in a test atmosphere, the respirator head straps must be as comfortable as possible. These tests are then performed:

- **Negative Pressure Test.** This test can be done in the field. It consists of closing off the inlets of the canister, cartridge(s), or filter(s) by covering them with the palm of the hand, replacing the seals over the canister or cartridge inlets, or squeezing the breathing tubes so that air cannot pass. Then one inhales gently so the facepiece collapses slightly. The breath is held for ten seconds. If the facepiece remains slightly collapsed and no inward leakage is detected, the respirator is probably tight enough. This test must only be used as a very gross determination of fit.

- **Positive Pressure Test.** This test is conducted by closing off the exhalation valve and exhaling gently into the facepiece. The fit is considered satisfactory if slight positive pressure can be built up inside the facepiece without any evidence of outward leakage. This test is easy and should be performed just before entering any hazardous atmosphere.

- **Banana Oil, Sucrose Water, or Irritant Smoke Test.** This test involves exposing the respirator wearer to one of the commercially available test kits. It is performed according to the manufacturer's recommendations. In general, the fitting test should be performed as follows:
  
  1. Put on the respirator in a normal manner, in an area that is not saturated with the material.
  2. Walk into the area with the test material.
  3. If you detect the test material, tighten the respirator without producing discomfort and repeat Step 2.
  4. Different tests and actions must be performed while being fitted.
  5. Describe the smell/taste of the material.
During the test, the employee should make movements that approximate a normal working situation. These may include the following:

- Normal breathing.
- Deep breathing, such as during a heavy exertion period (this should not be done long enough to cause hyperventilation).
- Slowly perform side-to-side and up-and-down head movements (these movements should be exaggerated, but should approximate those that take place on the job).
- Talking (this is most easily accomplished by reading a prepared text loudly enough to be understood by someone standing nearby). This test is called "The Rainbow Passage" and can be found in the OSHA standard.

**Self-Contained Breathing Apparatus**

Self-contained breathing apparatus (SCBA) provide respirator protection in oxygen-deficient environments and where high or unknown concentrations of toxic gases, vapor(s), or particles are present. SCBAs are divided into three basic types, with the pressure/demand being the preferred type on the construction job site:

- Demand or pressure demand
- Self-generating
- Liquid or compressed oxygen, for closed (rebreathing) devices

SCBAs can only be used during escape and rescue. Positive pressure SCBAs provide a higher degree of protection than demand closed circuit equipment and are generally preferred. All SCBA equipment must have a functioning "remaining service indicator" or working device that alarms when only 20-25 percent of service time remains.

SCBAs are approved as complete systems only. The interchange of parts using a manufacturer's cylinders with the same pressure ratings is acceptable only if the manufacturer specifies so in writing. Respirators shall be NIOSH-certified for escape from the atmosphere in which they will be used.

Oxygen must not be used to fill SCBA tanks. The entire respirator is specifically designed for oxygen use. Follow the manufacturer's instructions for SCBA use and cylinder charging. Cylinders must only be charged by certified employees or facilities.
SCBA Checklist System

A SCBA checklist system must be established and all relevant data recorded. The checklist must be performed on a periodic basis to ensure that all SCBA equipment works in an emergency situation. As a minimum this should be done monthly.

Emergency Storage

It is recommended that one or more easily accessible locations on the job site be reserved for a rescue box that is labeled "Emergency Rescue Equipment, Authorized Personnel Only." The rescue box should contain SCBA equipment, back-up bottles, and other rescue equipment such as ropes, harnesses, and flashlights. These boxes must be tagged and inspected monthly.

Training

The SCBA may be one of the most important pieces of protective equipment used during emergencies. It gives complete respiratory protection in any atmosphere. This section gives a generalized training section for open circuit SCBA units. For specific instruction, consult the SCBA manufacturer's manual.

Employees who use the SCBA must be able to put it on fast and efficiently in an emergency. Training sessions must be in-depth and realistic. For example, an employee should put on the SCBA periodically. At least once a year it should be worn during a training session that includes strenuous work, working on and climbing ladders, and working or moving in close or narrow passageways by all members of the emergency rescue team.

Preparing the SCBA for storage is very important, since the unit must be ready instantly for the next emergency. When putting it back in a compartment or case check the following:

- Straps are in the proper position
- Waist buckle is in the proper position
- Pressure in the system has been bled off
- All strap buckles are open to the extreme loose position
- Cylinder is recharged, if necessary
- Unit has been cleaned and sanitized immediately after each use
- Face mask is stored in a sealed plastic bag
Inspections

General inspection of the SCBA equipment must be done monthly to ensure equipment readiness. This inspection must assure that all SCBA related equipment is in place and in a ready mode. A periodic inspection is needed to ensure proper operation of the SCBA equipment (Figure 10-10). It includes the following steps:

- Put on breathing apparatus.
- Check its normal regulator cycling while doing strenuous work or taking extremely deep breaths.
- Check functioning of emergency bypass.
- Disconnect breathing tube from regulators and place bottom of tube tightly on palm. Inhale to check seal. Reconnect breathing tube.
- Take off breathing apparatus and close cylinder.
- Observe both gauges to see if they correspond, and check for air leaks in the system.
- Check emergency bypass to see if main line valve is closed or use facepiece and slowly reduce air pressure on regulator gauge to determine that the audible alarm activates at the proper pressure.
- Inspect the condition of straps on harness.
- Check the tightness of screws and fasteners on straps, regulator bracket, and all valve handles.
- Check locking devices on the main line valve, cylinder valve, and carrier to secure cylinder.
- Check holes in the diaphragm cap on the regulator to see if open.
- Check to see that the facepiece is clean.
- Check to see that the headband is in good condition.
- Check to see that the exhalation or inhalation valve is not sticking or held open.
- Check to see that the speaking diaphragm and gasket are in correctly.
Section 10: Industrial Hygiene

- Store the apparatus in a sealed plastic bag.
- Check that gaskets are in good condition at:
  - Regulator side of breathing tube
  - Facepiece where breathing tube connects
  - Speaking diaphragm assembly
  - O-ring in coupling that connects to cylinder valve
- Check that audible alarm bell cap is tight.
- Check that hydrostatic test data is current. (Normally, this is stamped on the cylinder by the manufacturer.)
- Check that the cylinder pressure is at least 1500 psi, 1800 psi, or 4000 psi, depending on the model.

Special Use Problems

Every respirator wearer must receive respirator fitting instructions that include demonstrations and practice sessions at least on an annual basis. Respirators must not be worn if the face seal is not good because contaminated air could enter the facepiece. A good seal can be obstructed by a beard, sideburns, scars, hollow temples, excessively protruding cheekbones, deep creases in facial skin, the absence of teeth or dentures, a skull cap that projects under the facepiece, or temple pieces on glasses. Even a few days’ growth of beard will permit contaminants to enter. Therefore, employees with facial hair must not be permitted to wear respirators, eliminating them from emergency response teams. Providing respiratory protection for individuals wearing corrective glasses is a serious problem. A proper seal cannot be established if the temple bars of eye glasses extend through the sealing edge of the full facepiece. As a temporary measure, glasses with short temple bars or without temple bars may be taped to the wearer’s head. Wearing of contact lenses is not permitted.

Cold Weather Use of Respirator

Under cold weather conditions, problems can develop such as fogging of full facepiece respirators, valve sticking, and rubber stiffness that prevents a good facial seal. Fogging can be eliminated easily by installing a nose cup into the facepiece. There are also de-fogging agents available from respirator vendors.
**Voice Communication**

Under some conditions, respirator wearers must communicate with other personnel within or outside the contaminated area. When this is necessary, special communication equipment can be installed inside the faceplate.

**Maintenance and Cleaning**

Respirator maintenance must be an integral part of the overall respirator program. Wearing a poorly maintained or malfunctioning respirator is more dangerous than not wearing one at all. Respirators are particularly vulnerable to poor maintenance because (1) they are used infrequently, and (2) they are used in the most hazardous and demanding circumstances.

The OSHA standard strongly emphasizes the importance of an adequately maintained program. All programs are required to include at least the following:

- Inspection for defects
- Repair
- Cleaning and disinfecting after each use
- Storage

**Inspection Procedures and Repair**

The OSHA standard states that the respirator inspection must include checking the following:

- Tightness of the connections
- Facepiece
- Valves
- Connecting tubes
- Canisters, filters, or cartridges

In addition, the standard also states that the regulator and warning devices on a SCBA must be checked for proper function.

If defects are found during any field inspection, two remedies are possible. If the defect is minor, repair or adjustment may be made on the spot. If it is major, the device should be removed from service for repair. Under no circumstances should a defective device remain in the field. Respirator cleaning usually involves some disassembly which presents a good opportunity to examine each respirator thoroughly for defects.
Cleaning and Disinfecting

Routinely used respirators must be collected, cleaned and disinfected as frequently as necessary. They should be exchanged daily for cleaning and inspection. Where respirators are used only occasionally, the exchange period may be weekly or monthly. Emergency use respirators must be cleaned and disinfected after each use. The respirators must be kept in a sanitary manner between usage and the exchange period.

At sites where large numbers of respirators are used, a centralized cleaning and maintenance facility should be established with specialized equipment and personnel trained in respirator maintenance.

The actual cleaning may be done in a variety of ways. Any good detergent may be used, followed by a disinfecting rinse or a combination disinfectant/detergent for a one-step operation.

To avoid damaging the rubber and plastic in the respirator facepieces, the cleaning water should be between 120°F and 140°F. A dishwasher may be used for this type of cleaning.

To prevent dermatitis, the cleaned and disinfected respirator should be rinsed thoroughly in water to remove all traces of detergent and disinfectant.

The respirator may be allowed to dry in room air (free of dust) on a clean surface. It may also be hung from a horizontal wire, like drying clothes, but care must be taken not to damage or distort the facepiece.

Storage

Respirators must be stored to protect against the following:

- Dust
- Sunlight
- Heat
- Extreme cold
- Excessive moisture
- Damaging chemicals
- Mechanical damage

Freshly cleaned respirators should be placed in heat-sealed or sealed plastic bags until re-issued. They should be stored in a clean, dry location away from direct sunlight, and placed in a single layer with the facepiece and exhalation valve in an undistorted position. This prevents rubber or plastic from taken a permanent distorted "set."
The following list of appendices can be found in the OSHA standard, 1910.134. Please refer to these for further guidance for the process of fit-testing, cleaning and user instructions.

**Appendices**

A  Fit Testing (Mandatory)

B-1 User Seal Check Procedures (Mandatory)

B-2 Cleaning Procedures (Mandatory)

C  Medical Evaluation (Mandatory)

D  Non-Mandatory
# EXTREMELY HAZARDOUS CHEMICALS

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<thead>
<tr>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>Acrylonitrile</td>
<td>107-13-1</td>
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<tr>
<td>4-Aminodiphenyl (p-Xenylamine)</td>
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<td>Amitrol</td>
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<td>Antimony Trioxide</td>
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<td>Arsenic</td>
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<td>Arsenic Trioxide</td>
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<td>Asbestos</td>
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<td>Benzidine</td>
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<td>Benzo(a)pyrene</td>
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<td>Beryllium</td>
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<td>bis (chloromethyl) ether</td>
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<td>Cadmium</td>
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<td>Carbon Tetrachloride</td>
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<td>Chloromethyl Methyl Ether</td>
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<td>Chrysene</td>
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<td>Coal Tar Pitch Volatiles</td>
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<td>3, 3' - Dichlorobenzidine</td>
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<td>Ethylene Oxide</td>
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<td>Lead</td>
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<td>2 - Nitropropane</td>
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<td>beta-Propyloactone</td>
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<td>Vinyl Chloride</td>
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<tr>
<td>Vinyl Cyclohexane Dioxide</td>
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</table>

*This is a numeric designation assigned by the American Chemical Society's Chemical Abstracts Service and uniquely identifies a specific chemical compound. This allows one to conclusively identify a substance regardless of the name or naming system used.

Table 10-A. Extremely Hazardous Chemicals
# MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

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<thead>
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<th>Chemical Name and Synonyms</th>
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<table>
<thead>
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<th>Chemical Family</th>
<th>Formla</th>
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## SECTION II - HAZARDOUS INGREDIENTS

### PAINTS, PRESERVATIVES, & SOLVENTS

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<th>Percentage</th>
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<th>ALLOYS AND METALLIC COATINGS</th>
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<td>Catalyst</td>
<td>Alloys</td>
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<td>Vehicle</td>
<td>Metallic Coatings</td>
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<tr>
<td>Solvents</td>
<td>Filler Metal Plus Coating or Core Flux</td>
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<td>Additives</td>
<td>Others</td>
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<td>Others</td>
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## SECTION III - PHYSICAL DATA

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<td>Boiling Point (°F.)</td>
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<tr>
<td>Specific Gravity (H₂O = 1)</td>
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<td>Vapor Pressure (mm Hg.)</td>
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<tr>
<td>Percent, Volatile by Volume (%)</td>
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<tr>
<td>Vapor Density (Air = 1)</td>
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<td>Evaporation Rate (_____________ = 1)</td>
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<td>Solubility in Water</td>
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## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

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<td>Extinguishing Media</td>
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<td>Special Fire Fighting Procedures</td>
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<td>Unusual Fire and Explosion Hazards</td>
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(Continued on reverse side)

Figure 10-1. Material Safety Data Sheet
(Front of form)
SECTION V - HEALTH HAZARD DATA
- Threshold Limit Value
- Effects of Overexposure
- Emergency and First Aid Procedures

SECTION VI - REACTIVITY DATA
- Stability
  - Unstable
  - Stable
- Incompatibility (Materials to Avoid)
- Hazardous Decomposition Products
- Hazardous Polymerization
  - May Occur
  - Will Not Occur

SECTION VII - SPILL OR LEAK PROCEDURES
- Steps to be Taken in Case Material is Released or Spilled
- Waste Disposal Method

SECTION VIII - SPECIAL PROTECTION INFORMATION
- Respiratory Protection (Specify type)
- Ventilation
  - Local Exhaust
  - Mechanical (General)
- Protective Gloves
- Other Protective Equipment
- Special
- Other
- Eye Protection

SECTION IX - SPECIAL PRECAUTIONS
- Precautions to be Taken in Handling and Storing
- Other Precautions

Figure 10-1. (Cont’d.)
## CONVERSION TABLE
### STPD TO BTPS

<table>
<thead>
<tr>
<th>Ambient Temperature °C</th>
<th>Aqueous Vapor Pressure (mmHg)</th>
<th>Factor to Convert to: STPDBTPs</th>
<th>BTPS from 25°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>12.0</td>
<td>0.936 1.333</td>
<td>1.054</td>
</tr>
<tr>
<td>15</td>
<td>12.8</td>
<td>0.932 1.128</td>
<td>1.049</td>
</tr>
<tr>
<td>16</td>
<td>13.6</td>
<td>0.928 1.123</td>
<td>1.045</td>
</tr>
<tr>
<td>17</td>
<td>14.5</td>
<td>0.924 1.118</td>
<td>1.040</td>
</tr>
<tr>
<td>18</td>
<td>15.5</td>
<td>0.920 1.113</td>
<td>1.035</td>
</tr>
<tr>
<td>19</td>
<td>16.5</td>
<td>0.916 1.108</td>
<td>1.031</td>
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<tr>
<td>20</td>
<td>17.5</td>
<td>0.911 1.102</td>
<td>1.025</td>
</tr>
<tr>
<td>21</td>
<td>18.7</td>
<td>0.906 1.096</td>
<td>1.020</td>
</tr>
<tr>
<td>22</td>
<td>19.8</td>
<td>0.902 1.091</td>
<td>1.015</td>
</tr>
<tr>
<td>23</td>
<td>21.1</td>
<td>0.897 1.085</td>
<td>1.009</td>
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<tr>
<td>24</td>
<td>22.4</td>
<td>0.893 1.080</td>
<td>1.005</td>
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<tr>
<td>25</td>
<td>23.8</td>
<td>0.888 1.075</td>
<td>1.000</td>
</tr>
<tr>
<td>26</td>
<td>25.2</td>
<td>0.883 1.069</td>
<td>.994</td>
</tr>
<tr>
<td>27</td>
<td>26.7</td>
<td>0.878 1.063</td>
<td>.989</td>
</tr>
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<td>28</td>
<td>28.3</td>
<td>0.874 1.057</td>
<td>.983</td>
</tr>
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<td>29</td>
<td>30.0</td>
<td>0.869 1.051</td>
<td>.978</td>
</tr>
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<td>30</td>
<td>31.8</td>
<td>0.864 1.045</td>
<td>.972</td>
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<td>31</td>
<td>33.7</td>
<td>0.859 1.039</td>
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<td>32</td>
<td>35.7</td>
<td>0.853 1.032</td>
<td>.960</td>
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<td>33</td>
<td>37.7</td>
<td>0.848 1.026</td>
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<td>34</td>
<td>39.9</td>
<td>0.843 1.020</td>
<td>.949</td>
</tr>
<tr>
<td>35</td>
<td>42.2</td>
<td>0.838 1.014</td>
<td>.943</td>
</tr>
<tr>
<td>36</td>
<td>44.6</td>
<td>0.832 1.007</td>
<td>.937</td>
</tr>
<tr>
<td>37</td>
<td>47.1</td>
<td>0.826 1.000</td>
<td>.930</td>
</tr>
</tbody>
</table>

Table 10-B. Conversion Table
STPD to BTPS
INDUSTRIAL HYGIENE MONITORING DATA SHEET

Jobsite name: ___________________________ Number: _______ Date: ________________

Contaminant sampled: __________________________________________________________________

Sampling equipment (name, number, manufacturer): ________________________________________

Calibration of sampling equipment: (Type)__________________ (Date) ________________

Location of contaminant: __________________________________________________________________

Contaminant source: _____________________________________________________________________

Number and titles of employees exposed: _________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

Measured contaminant (P.P.M., mg/m^3, %, L.E.L.) and date measured: ______________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

Personal protective equipment worn: _____________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

Controls (i.e., ventilation, shielding, administrative): ______________________________________

____________________________________________________________________________________

____________________________________________________________________________________

Solutions to problem: __________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

Additional comments: __________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

Surveyed by ____________________________________________

Figure 10-2. Industrial Hygiene Monitoring Data Sheet
INDUSTRIAL HYGIENE MONITORING DATA SHEET
Respirator Care and Maintenance Record

Jobsite Name: _________________________ Number: ____________

<table>
<thead>
<tr>
<th>Respirator Manufacturer and Number (Jobsite Identification Number if Assigned)</th>
<th>Maintenance Performed</th>
<th>Date Performed</th>
<th>Cleaned and Sanitized</th>
<th>Performed By</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 10-3. Respirator Care and Maintenance Record
Emergency Equipment Monthly Inspection Sheet

Jobsite name ________________________________  Number __________________
Date ________________________________  Location _______________________

Inspected by ________________________________

Storage Area
- Is all safety equipment easily accessible? ________________________________
- Has the storage container been tampered with? ___________________________
- Is the storage container easily identified? ________________________________
- Self-Contained Breathing Apparatus? ________________________________
- What is the equipment name and number? ________________________________
- Where is it located? ________________________________
- What is the regulator setting? ________________________________
- Is the facepiece stored in sealed plastic bag? ___________________________
- Are all straps in their proper place and ready to use? ____________________
- How many extra breathing cylinders are there? __________________________
- Other comments ________________________________

List of additional equipment and its condition (i.e., life lines, harnesses, flash lights, etc.) ______

________________________________________
________________________________________
________________________________________
________________________________________
________________________________________

Figure 10-4. Emergency Equipment Inspection Sheet
Respiratory Protection Education and Fit Testing

This is to confirm that I, ____________________________ (name) ____________________________ (Craft) ____________________________ was educated and fit tested for ____________________________ (Employee #) ____________________________ respirator(s).

I thoroughly understand the uses for and benefits of wearing a respirator and will use what I have learned on ____________________________ when a respirator is necessary for my job.

(Date)

Trained and fitted by ____________________________

Date ____________________________

Figure 10-5. Respiratory Protection Education and Fit Testing
<table>
<thead>
<tr>
<th>Job name:</th>
<th>Number:</th>
<th>Employee Name and Craft Number</th>
<th>Date</th>
<th>Location of Work</th>
<th>Work Hazards</th>
<th>Respirator (Name and Number)</th>
<th>Respirator Issued By</th>
<th>Other</th>
</tr>
</thead>
</table>

Figure 10-6. Respirator Usage List
# REPORT OF MEDICAL EXAMINATION

(This information is for official and medically confidential use only and will not be released to unauthorized persons.)

<table>
<thead>
<tr>
<th>Last Name - First Name - Middle Name (Please Print)</th>
<th>Social Security</th>
<th>Date of Birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address (No. Street or RFD, City or Town, State and Zip Code)</td>
<td>Phone Number: Best time to call:</td>
<td>Age</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purpose of Examination: Evaluate Ability to Wear Respirator</th>
<th>Today’s Date</th>
<th>Examining Facility</th>
<th>Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>M            F</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Statement of Examinee’s Present Health and Medications Currently Used (Follow by description of past history, if complaint exists):

Has the employer told you how to contact the health care professional who will review the questionnaire? Y N

<table>
<thead>
<tr>
<th>Have you Ever (Please check each item)</th>
<th>Do You (Please check each item)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes No (Check each item)</td>
<td>Yes No (Check each item)</td>
</tr>
<tr>
<td>Coughed up blood</td>
<td>Wear contract lenses</td>
</tr>
<tr>
<td>Bled excessively after injury or tooth extraction</td>
<td>Wear glasses</td>
</tr>
<tr>
<td>Smoked or used tobacco (within the last month)</td>
<td>Have vision in both eyes</td>
</tr>
<tr>
<td>Smoked or used tobacco</td>
<td>Wear a hearing aid</td>
</tr>
<tr>
<td>Presently smoke</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Have You Ever Had or Have You Now (Please check at left of each item)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes No Don’t Know (Check each item)</td>
</tr>
<tr>
<td>Frequent or severe headache</td>
</tr>
<tr>
<td>Dizziness or fainting spells</td>
</tr>
<tr>
<td>Eye trouble</td>
</tr>
<tr>
<td>Ear, nose, or throat trouble</td>
</tr>
<tr>
<td>Ruptured ear drum</td>
</tr>
<tr>
<td>Hearing loss</td>
</tr>
<tr>
<td>Chronic or frequent colds</td>
</tr>
<tr>
<td>Severe tooth or gum trouble</td>
</tr>
<tr>
<td>Sinusitis</td>
</tr>
<tr>
<td>Hay fever</td>
</tr>
<tr>
<td>Head injury</td>
</tr>
<tr>
<td>Tuberculosis</td>
</tr>
<tr>
<td>Asthma</td>
</tr>
<tr>
<td>Shortness of breath</td>
</tr>
<tr>
<td>Pain or pressure in chest</td>
</tr>
<tr>
<td>Trouble smelling odors</td>
</tr>
<tr>
<td>Shortness of breath when walking fast on level ground or walking up a slight hill or incline</td>
</tr>
<tr>
<td>Shortness of breath when walking with other people at an ordinary pace on level ground</td>
</tr>
<tr>
<td>Have to stop for breath when walking at your own pace on level ground</td>
</tr>
<tr>
<td>Shortness of breath when washing or dressing yourself</td>
</tr>
<tr>
<td>Shortness of breath that interferes with your job</td>
</tr>
<tr>
<td>Coughing that produced phlegm (thick sputum)</td>
</tr>
<tr>
<td>Coughing that wakes you early in the morning</td>
</tr>
<tr>
<td>Coughing that occurs mostly when you are lying down</td>
</tr>
<tr>
<td>Swelling in your legs or feet</td>
</tr>
<tr>
<td>Heart arrhythmia</td>
</tr>
<tr>
<td>High blood pressure</td>
</tr>
<tr>
<td>Any other heart problem that you’ve been told about</td>
</tr>
</tbody>
</table>

---

Safety Reference Manual 10-37 (01/08/03)
<table>
<thead>
<tr>
<th></th>
<th>Pain or tightness in your chest during physical activity</th>
<th>Pain or tightness in your chest that interferes with your job</th>
<th>In the past two years, have you noticed your heart skipping or missing a beat</th>
</tr>
</thead>
</table>

**Do you currently take medication for any of the following problems?**

| Yes | No | Don’t Know | (Check each item) |
|-----|----|...............|-------------------|
|     |    | Heart trouble |                   |
|     |    | Seizures (fits) |                   |
|     |    | Blood pressure |                   |

**Clinical Evaluation**

<table>
<thead>
<tr>
<th>Normal</th>
<th>(Check each item in appropriate column, enter “NE” if not evaluated)</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Head, Face, Neck</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nose</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sinuses</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mouth and Throat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ears - General</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drums (Perforation)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lungs and Chest</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Heart</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vascular System</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** (Describe every abnormality in detail)

- Have you worn a respirator?  Yes  No
- If so, what types?

Figure 10-7. Report of Medical Examination (cont’d)
1. If you've used a respirator, have you ever had any of the following problems? (If you've never used a respirator, check the following space and go to question 2.)
   (Please circle)
   a. Eye irritation: Yes      No
   b. Skin allergies or rashes: Yes      No
   c. Anxiety: Yes      No
   d. General weakness or fatigue: Yes      No
   e. Any other problem that interferes with your use of a respirator: Yes      No

2. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire? Yes      No

Questions 3 to 8 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

3. Have you ever lost vision in either eye (temporarily or permanently): Yes      No

4. Do you currently have any of the following vision problems?
   a. Wear contact lenses: Yes      No
   b. Wear glasses: Yes      No
   c. Color blind: Yes      No
   d. Any other eye or vision problem: Yes      No

5. Have you ever had an injury to your ears, including a broken ear drum: Yes      No

6. Do you currently have any of the following hearing problems?
   a. Difficulty hearing: Yes      No
   b. Wear a hearing aid: Yes      No
   c. Any other hearing or ear problem: Yes      No

7. Have you ever had a back injury: Yes      No

8. Do you currently have any of the following musculoskeletal problems?
   a. Weakness in any of your arms, hands, legs, or feet: Yes      No
   b. Back pain: Yes      No
   c. Difficulty fully moving your arms and legs: Yes      No
   d. Pain or stiffness when you lean forward or backward at the waist: Yes      No
   e. Difficulty fully moving your head up or down: Yes      No
   f. Difficulty fully moving your head side to side: Yes      No
   g. Difficulty bending at your knees: Yes      No
   h. Difficulty squating to the ground: Yes      No
   i. Climbing a flight of stairs or a ladder carrying more than 25 pounds: Yes      No
   j. Any other muscle or skeletal problem that interferes with using a respirator: Yes      No

Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes      No
   If "yes," do you have any feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions? Yes      No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes      No
   If "yes," name the chemicals if you know them:________________________________________

3. Have you ever worked with any of the materials, or under any of the conditions, listed below:
   a. Asbestos: Yes      No
   b. Silica (e.g., in sandblasting): Yes      No
   c. Tungsten/cobalt (e.g., grinding or welding this material): Yes      No
   d. Beryllium: Yes      No
   e. Aluminum: Yes      No
   f. Coal (for example, mining): Yes      No
   g. Iron: Yes      No
   h. Tin: Yes      No
   i. Dusty environments: Yes      No
   j. Any other hazardous exposures: Yes      No
   If "yes," describe these exposures:____________________________________________________

4. List any second jobs or side businesses you have:________________________________________

5. List your previous occupations:______________________________________________________

Figure 10-7. Report of Medical Examination (cont’d)
6. List your current and previous hobbies: ____________________________

7. Have you been in the military services? Yes No
   If "yes," were you exposed to biological or chemical agents (either in training or combat)? Yes No

8. Have you ever worked on a HAZMAT team? Yes No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications)? Yes No
   If "yes," name the medications if you know them:

10. Will you be using any of the following items with your respirator(s)?
    a. HEPA Filters: Yes No
    b. Canisters (for example, gas masks): Yes No
    c. Cartridges: Yes No

11. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you):
    a. Escape only (no rescue): Yes No
    b. Emergency rescue only: Yes No
    c. Less than 5 hours per week: Yes No
    d. Less than 2 hours per day: Yes No
    e. 2 to 4 hours per day: Yes No
    f. Over 4 hours per day: Yes No

12. During the period you are using the respirator(s), is your work effort:
    a. Light (less than 200 kcal per hour): Yes No
       If "yes," how long does this period last during the average shift:
       hrs. mins.
       Examples of a light work effort are sitting while writing, typing, drafting or performing light assembly work; or standing while operating a drill press (1-3 pounds) or controlling machines.
    b. Moderate (200 to 350 kcal per hour): Yes No
       If "yes," how long does this period last during the average shift:
       hrs. mins.
       Examples of moderate work are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing performing assembly work, or transferring a moderate load (about 35 pounds) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 pounds) on a level surface.
    c. Heavy (above 350 kcal per hour): Yes No
       If "yes," how long does this period last during the average shift:
       hrs. mins.
       Examples of heavy work are lifting a heavy load (about 50 pounds) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 pounds).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes No
    If "yes," describe this protective clothing and/or equipment:

14. Will you be working in hot conditions (temperature exceeding 77 degrees F): Yes No

15. Will you be working under humid conditions: Yes No

16. Describe the work you'll be doing while you're using your respirator(s):
___________________________________________________________

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):
___________________________________________________________

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):
   Name of the first toxic substance:
   Estimated maximum exposure level per shift: _______________________
   Duration of exposure per shift: _______________________
   Name of the second toxic substance:
   Estimated maximum exposure level per shift: _______________________
   Duration of exposure per shift: _______________________
   Name of the third toxic substance:
   Estimated maximum exposure level per shift: _______________________
   Duration of exposure per shift: _______________________
   The name of any other substances that you'll be exposed to while using your respirator:
___________________________________________________________

Figure 10-7. Report of Medical Examination (cont’d)
19. Describe any special responsibilities you’ll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):

<table>
<thead>
<tr>
<th>Weight</th>
<th>Pulse Rate</th>
<th>Blood Pressure, S-</th>
<th>D-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>Job Title</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pulmonary Lung Function Test Results:

<table>
<thead>
<tr>
<th>FVC</th>
<th>%</th>
<th>FEV₁</th>
<th>%</th>
<th>FEV₁/FVC %</th>
<th>BTPS Factor</th>
</tr>
</thead>
</table>

Recommendation - Further Specialist Examinations Indicated (Specify):

Typed or Printed Name of Examiner

Signature

Date

Examinee (Check)
A ? Is Medically Qualified to Wear a Respirator
B ? Is Not Medically Qualified to Wear a Respirator

Check Type of Respirator

_ N  _ P (filter-mask)
_ R  _ (non-cartridge type)

_ Other

Typed or Printed Name of Physician

Signature

Date

I have reviewed this information, supplied by me. It is true and complete to the best of my knowledge:

Date ________________    Employee’s Signature ____________________________

Figure 10-7. Report of Medical Examination (cont’d)
Dear Doctor,

Mr./Ms. ________________________________, an employee of the (Construction Company), has been evaluated by a pulmonary function screening test to determine his/her physical fitness for using a respirator apparatus.

The results of Mr./Ms. ________________________________‘s spirometry test indicate him/her to have a borderline level of FEV, 75 to 60% and/or - - 70 to 55% of the norm.

We have advised him/her to seek an evaluation by a licensed physician of his/her choice to determine and advise (Construction Company) in writing whether he/she is physically capable of working while wearing a respiratory apparatus.

Signed ________________________________

Title ________________________________

Figure 10-8. Sample Letter Advising Physician's Evaluation of Fitness For Respirator
OSHA RESPIRATOR MEDICAL EVALUATION
QUESTIONNAIRE (Mandatory)

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee:

Can you read (circle one): Yes/No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.
Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today’s date: 

2. Your name: 

3. Your age (to nearest year): 

4. Sex (circle one): Male/Female 

5. Your height: _____ ft. _____ in. 

6. Your weight: _________ lbs. 

7. Your job title: 

8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the area code): 

9. The best time to phone you at this number: 

10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes/No 

11. Check the type of respirator you will use (you can check more than one category):
   a. _____ N, R, or P disposable respirator (filter-mask, non-cartridge type only). 
   b. _____ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus). 

12. Have you worn a respirator (circle one): Yes/No 
   If “yes,” what type(s): 

__________________________________________________________
__________________________________________________________
__________________________________________________________
Part A. Section 2. (Mandatory) Questions 1 through 8 below must be answered by every employee who has been selected to use any type of respirator (please circle “yes” or “no”).

1. Have you ever had any of the following conditions?
   1. Seizures (fits): Yes/No
   2. Diabetes (sugar disease): Yes/No
   3. Allergic reactions that interfere with your breathing: Yes/No
   4. Claustrophobia (fear of closed-in places): Yes/No
   5. Trouble smelling odors: Yes/No

2. Have you ever had any of the following pulmonary or lung problems?
   1. Asbestosis: Yes/No
   2. Asthma: Yes/No
   3. Chronic bronchitis: Yes/No
   4. Emphysema: Yes/No
   5. Pneumonia: Yes/No
   6. Tuberculosis: Yes/No
   7. Silicosis: Yes/No
   8. Pneumothorax (collapsed lung): Yes/No
   9. Lung cancer: Yes/No
   10. Broken ribs: Yes/No
   11. Any chest injuries or surgeries: Yes/No
   12. Any other lung problem that you’ve been told about: Yes/No

3. Do you currently have any of the following symptoms of pulmonary or lung illness?
   1. Shortness of breath: Yes/No
   2. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes/No
   3. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes/No
   4. Have to stop for breath when walking at your own pace on level ground: Yes/No
   5. Shortness of breath when washing or dressing yourself: Yes/No
   6. Shortness of breath that interferes with your job: Yes/No
   7. Coughing that produces phlegm (thick sputum): Yes/No
   8. Coughing that wakes you early in the morning: Yes/No
   9. Coughing that occurs mostly when you are lying down: Yes/No
   10. Coughing up blood in the last month: Yes/No
   11. Wheezing: Yes/No
   12. Wheezing that interferes with your job: Yes/No
   13. Chest pain when you breathe deeply: Yes/No
   14. Any other symptoms that you think may be related to lung problems: Yes/No
4. Have you *ever had* any of the following cardiovascular or heart problems?

1. Heart attack: Yes/No
2. Stroke: Yes/No
3. Angina: Yes/No
4. Heart failure: Yes/No
5. Swelling in your legs or feet (not caused by walking): Yes/No
6. Heart arrhythmia (heart beating irregularly): Yes/No
7. High blood pressure: Yes/No
8. Any other heart problem that you’ve been told about: Yes/No

5. Have you *ever had* any of the following cardiovascular or heart symptoms?

1. Frequent pain or tightness in your chest: Yes/No
2. Pain or tightness in your chest during physical activity: Yes/No
3. Pain or tightness in your chest that interferes with your job: Yes/No
4. In the past two years, have you noticed your heart skipping or missing a beat: Yes/No
5. Heartburn or indigestion that is not related to eating: Yes/No
6. Any other symptoms that you think may be related to heart or circulation problems: Yes/No

6. Do you *currently* take medication for any of the following problems?

1. Breathing or lung problems: Yes/No
2. Heart trouble: Yes/No
3. Blood pressure: Yes/No
4. Seizures (fits): Yes/No

7. If you’ve used a respirator, have you *ever had* any of the following problems? (If you’ve never used a respirator, check the following space and go to question 8:)

1. Eye irritation: Yes/No
2. Skin allergies or rashes: Yes/No
3. Anxiety: Yes/No
4. General weakness or fatigue: Yes/No
5. Any other problem that interferes with your use of a respirator: Yes/No

8. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes/No
Questions 9 to 14 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

9. Have you **ever lost** vision in either eye (temporarily or permanently): Yes/No

10. Do you **currently** have any of the following vision problems?
   1. Wear contact lenses: Yes/No
   2. Wear glasses: Yes/No
   3. Color blind: Yes/No
   4. Any other eye or vision problem: Yes/No

11. Have you **ever had** an injury to your ears, including a broken ear drum: Yes/No

12. Do you **currently** have any of the following hearing problems?
   1. Difficulty hearing: Yes/No
   2. Wear a hearing aid: Yes/No
   3. Any other hearing or ear problem: Yes/No

13. Have you **ever had** a back injury: Yes/No

14. Do you **currently** have any of the following musculoskeletal problems?
   1. Weakness in any of your arms, hands, legs, or feet: Yes/No
   2. Back pain: Yes/No
   3. Difficulty fully moving your arms and legs: Yes/No
   4. Pain or stiffness when you lean forward or backward at the waist: Yes/No
   5. Difficulty fully moving your head up or down: Yes/No
   6. Difficulty fully moving your head side to side: Yes/No
   7. Difficulty bending at your knees: Yes/No
   8. Difficulty squatting to the ground: Yes/No
   9. Climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes/No
   10. Any other muscle or skeletal problem that interferes with using a respirator: Yes/No

Part B. Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

   1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes/No

   If “yes,” do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you’re working under these conditions: Yes/No
2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes/No

   If “yes,” name the chemicals if you know them: ________________________________
   ________________________________
   ________________________________

3. Have you ever worked with any of the materials or under any of the conditions listed below:

   1. Asbestos: Yes/No
   2. Silica (e.g., in sandblasting): Yes/No
   3. Tungsten/cobalt (e.g., grinding or welding this material): Yes/No
   4. Beryllium: Yes/No
   5. Aluminum: Yes/No
   6. Coal (for example, mining): Yes/No
   7. Iron: Yes/No
   8. Tin: Yes/No
   9. Dusty environments: Yes/No
   10. Any other hazardous exposures: Yes/No

   If “yes,” describe these exposures: ________________________________
   ________________________________
   ________________________________

4. List any second jobs or side businesses you have: ________________________________

5. List your previous occupations: ________________________________

6. List your current and previous hobbies: ________________________________

7. Have you been in the military services? Yes/No

   If “yes,” were you exposed to biological or chemical agents (either in training or combat): Yes/No

8. Have you ever worked on a HAZMAT team? Yes/No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes/No

   If “yes,” name the medications if you know them:
10. Will you be using any of the following items with your respirator(s)?

1. HEPA Filters: Yes/No
2. Canisters (for example, gas mask): Yes/No
3. Cartridges: Yes/No

11. How often are you expected to use the respirator(s) (circle “yes” or “no” for all answers that apply to you)?:

1. Escape only (no rescue): Yes/No
2. Emergency rescue only: Yes/No
3. Less than 5 hours **per week:** Yes/No
4. Less than 2 hours **per day:** Yes/No
5. 2 to 4 hours per day: Yes/No
6. Over 4 hours per day: Yes/No

12. During the period you are using the respirator(s), is your work effort:

1. **Light** (less than 200 kcal per hour): Yes/No

   If “yes,” how long does this period last during the average shift:
   _____________ hrs. _____________ mins.

   Examples of a light work effort are **sitting** while writing, typing, drafting, or performing light assembly work; or **standing** while operating a drill press (1-3 lbs.) or controlling machines.

2. **Moderate** (200 to 350 kcal per hour): Yes/No

   If “yes,” how long does this period last during the average shift:
   _____________ hrs. _____________ mins.

   Examples of moderate work effort are **sitting** while nailing or filing; **driving** a truck or bus in urban traffic; **standing** while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; **walking** on a level surface about 2 mph or down a 5-degree grade about 3 mph; or **pushing** a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

3. **Heavy** (about 350 kcal per hour): Yes/No

   If “yes,” how long does this period last during the average shift:
   _____________ hrs. _____________ mins.

   Examples of heavy work are **lifting** a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; **shoveling; standing** while bricklaying or chipping castings; **walking** up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).
13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes/No

If "yes," describe this protective clothing and/or equipment: ________________________________

14. Will you be working under hot conditions (temperature exceeding 77 deg. F): Yes/No

15. Will you be working under humid conditions: Yes/No

16. Describe the work you'll be doing while you're using your respirator(s):

______________________________________________________________________________

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

______________________________________________________________________________

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of the first toxic substance: ________________________________
Estimated maximum exposure level per shift: ________________________________
Duration of exposure per shift: ________________________________

Name of the second toxic substance: ________________________________
Estimated maximum exposure level per shift: ________________________________
Duration of exposure per shift: ________________________________

Name of the third toxic substance: ________________________________
Estimated maximum exposure level per shift: ________________________________
Duration of exposure per shift: ________________________________

The name of any other toxic substances that you'll be exposed to while using your respirator:

______________________________________________________________________________

______________________________________________________________________________

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):

______________________________________________________________________________
RESPIRATOR CARD

Jobsite Name and Number

Respiratory Protection Program

Name

Craft  No.

Employer

Medical History On File:  ? Yes  ? No

Pulmonary Function Test:  ? Approved  ? Disapproved

Fitted and Trained For The Following Respirators:

? Dust  ? Vapor Mist  ? Supplied Air
? Sand Blasters  ? Self-Contained  ? Others

Facial Hair

Expired Date

Signed  Safety Dept./Supervisor

Figure 10-9. Sample Respirator Card
SELF-CONTAINED BREATHING APPARATUS

Monthly Inspection

Date: ____________________________  Name: ____________________________

Jobsite Number: ____________________________

Equipment Location: ____________________________

Equipment Manufacturer: ____________________________  Serial Number: ____________________________

Inspections Completed By: ____________________________  Title: ____________________________

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Face Piece</td>
<td></td>
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<td></td>
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<td></td>
<td>Excessive Dirt</td>
<td>?</td>
<td>?</td>
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<td>Cracks, tears, or physical distortion</td>
<td>?</td>
<td>?</td>
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<td></td>
<td>Inflexibility of facepiece</td>
<td>?</td>
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<td></td>
<td>Cracked, badly scratched, broken, or chipped lenses</td>
<td>?</td>
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<td></td>
<td>Incorrectly mounted lenses</td>
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<tr>
<td>2. Head Harness</td>
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<td></td>
<td>Breaks</td>
<td>?</td>
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<td></td>
<td>Loss of elasticity</td>
<td>?</td>
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<td></td>
<td>Broken or malfunctioning buckles and attachment</td>
<td>?</td>
<td>?</td>
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<td></td>
<td>Excessively worn (could cause slippage)</td>
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<td>3. Exhalation Valve (examine after removing cover)</td>
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<td></td>
<td>Foreign material under valve seat</td>
<td>?</td>
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<td>Cracks, tears, or distortion in valve material</td>
<td>?</td>
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<td>Improper insertion of valve body</td>
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<td></td>
<td>Cracks, breaks, or chips in valve body</td>
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<td></td>
<td>Missing or defective valve cover</td>
<td>?</td>
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<td></td>
<td>Improper installation of valve in valve body</td>
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<td>4. Breathing Tube</td>
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<td></td>
<td>Broken or missing end connectors</td>
<td>?</td>
<td>?</td>
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<td></td>
<td>Missing or loose hose clamp</td>
<td>?</td>
<td>?</td>
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<td></td>
<td>Holes, cracks, deterioration, or stretching</td>
<td>?</td>
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<td>5. Compression</td>
<td></td>
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<tr>
<td></td>
<td>Cylinder fully charged</td>
<td>?</td>
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<td>6. Pressure Hosing</td>
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<td></td>
<td>Broken or missing end components</td>
<td>?</td>
<td>?</td>
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<td></td>
<td>Missing or loose hose clamp</td>
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<td>?</td>
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<td></td>
<td>Holes, cracks, deterioration, or stretching in hose</td>
<td>?</td>
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<td>7. Pressure Regulator</td>
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<td></td>
<td>Caps and pressure spring in place</td>
<td>?</td>
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<td></td>
<td>No adverse visual effects</td>
<td>?</td>
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<td></td>
<td>Field test of regulator</td>
<td>?</td>
<td>?</td>
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<td>8. Alarm</td>
<td></td>
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<td></td>
<td>Test low level alarm</td>
<td>?</td>
<td>?</td>
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<tr>
<td>9. Support Belts and Structure</td>
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<tr>
<td></td>
<td>Belts complete and undamaged</td>
<td>?</td>
<td>?</td>
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<tr>
<td></td>
<td>Support structure complete and undamaged</td>
<td>?</td>
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Figure 10-10. SCBA Inspection Form
# Hazardous Material Site Inventory Sheet

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Product Trade Name</th>
<th>Address of Manufacturer</th>
<th>Use of Material</th>
<th>Chemical Composition</th>
<th>Quantity of Waste Generated</th>
<th>Disposal and Haul Methods</th>
<th>Comments</th>
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</thead>
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</table>
RESPIRATORY PROTECTION PROGRAM FOR THE VOLUNTARY USE OF AIR PURIFYING RESPIRATORS OTHER THAN DUST MASKS (FILTERING FACEPIECES)

This program is designed to protect employee health even though it has been determined that respirators are not required. This program is designed for compliance with OSHA Standard 29 CFR 1910.134(c)(2).

(position) ________________ is responsible for administering this program.

(position) ________________ has determined that respirators are not required for the following jobs, tasks or departments:


The following is required for employees who voluntarily use respirators other than filtering facepieces:

1) The employee will contact (position) ________________ to initiate the medical evaluation.

2) The designated health care provider (PLHCP) is ________________. The PLHCP will perform medical evaluations using a medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire (information required is contained in 1910.134 Appendix C). This evaluation will be administered confidentially, at no cost to the employee, during the employee’s normal working hours or at a time and place convenient to the employee, and in a manner the employee understands. The employee will have an opportunity to discuss the questionnaire and examination results with the health care provider (PLHCP).

3) The (position) ________________ will provide the health care provider with the following supplemental information:

   (A) The type and weight of the respirator to be used by the employee;
   (B) The duration and frequency of respirator use (including use for rescue and escape);
   (C) The expected physical work effort;
   (D) Additional protective clothing and equipment to be worn;
   (E) Temperature and humidity extremes that may be encountered.
   (F) A copy of this written respiratory protection program.
   (G) A copy of the respiratory protection standard (29 CFR 1910.34).
4) An additional medical evaluation may be necessary as determined by the health care provider.

5) (position) ________________ will receive and keep on file the health care provider’s written opinion on the employee’s ability to use the respirator.

6) Respirators will be cleaned and disinfected according to the manufacturer’s recommendation or those found in Appendix B-2 of the standard.

7) All respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they shall be packed or stored to prevent deformation of the facepiece and exhalation valve.

8) (position) ________________ will provide a copy of and employees are to read Appendix D of the OSHA Respirator Standard 29 CFR 1910.134, a copy of which follows:

Appendix D 1910.134 (Non-Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.

2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.

3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.

4. Keep track of your respirator so that you do not mistakenly use someone else’s respirator.
Purpose

To ensure that information concerning the hazards of all chemicals used/handled on the project is provided to all affected contract employees. The hazard information will allow employees to participate in, and support the protective measures instituted on the project.

Responsibility

The Safety Department is responsible for establishing and implementing the Hazard Communication Program for the project. The following procedure can be used as a model program for the project.

Procedure

A. HAZARD DETERMINATION

1. Material Safety Data Sheets (MSDS) supplied by the manufacturers, vendors, and/or client shall be the principal source of health hazard information.

2. When an MSDS appears inadequate or is not available, or the composition of the chemical is unknown or questionable, the manufacturer, vendor, and/or client shall be contacted for more details. This will be the responsibility of the Safety Department.

3. Examples of qualities that make a chemical hazardous include, but are not limited to:
   a. Flammable, combustible, and/or explosive.
   b. Corrosive (acids/caustics).
   c. Irritating/damaging to the eyes and/or body.
   d. Poses health hazard through inhalation, ingestion, or body contact.
   e. Any known or suspected carcinogen.

B. MATERIAL SAFETY DATA SHEETS (MSDS)

1. Material Safety Data Sheets (MSDS) are required for each hazardous and non-hazardous chemical used/handled by contract employees. An MSDS is required for process chemicals and products in operating unit systems of the facilities where a potential for exposure to employees exists.

2. The person originating an order for a chemical to be used on the jobsite is responsible for ensuring an MSDS is requested. This request shall be made by annotating (in highlights) "MSDS REQUIRED" on all material requests in which hazardous chemicals are ordered.
3. The purchasing supervisor will ensure that vendors/manufacturers, and in some cases the client, are informed that an MSDS is required on a specific chemical when placing the material requisition.

4. MSDS will be readily available to all employees during each work shift. If one is not available, immediately contact the Safety Department.

5. Upon receipt of the chemical requested, the warehouse personnel shall ensure that an MSDS has accompanied the item. A copy shall be forwarded to the job safety supervisor, and a copy to the person originating the order. The jobsite safety supervisor shall be notified when hazardous chemicals are received without an MSDS. If so, the substance will be locked in a quarantine area until an MSDS is acquired.

6. Copies of the MSDS will be available for employee review at the following locations:
   a. Process Chemicals and Products
      1. Control Room (Master File), client responsibility
      2. Chemical Hazard Signal System
   b. Chemicals used/handled by contract employees
      1. Safety Office (Master File)
      2. Chemical Hazard Signal System

7. The Master File of all MSDSs on the project shall be maintained by common or trade name and assigned file number.

NOTE: It is not necessary that an MSDS be requested each time a hazardous chemical is ordered, provided a copy of the MSDS is on file at one of the locations listed in B.6.b. and the sheet is current.

C. HAZARDOUS MATERIAL LIST

1. A list of all process chemicals and products in operating unit systems, and the location of the same, are kept on file in the control rooms of each unit.

2. Chemical items used/handled by affected contract employees shall be kept on file in the Safety Office and shall be updated periodically. This listing will be generated by common name and by manufacturer.
D. LABELS AND OTHER FORMS OF WARNING

1. Containers of incoming hazardous chemicals must have the manufacturer's label, tag, or mark affixed to include:
   a. The identity of the hazardous chemicals cross referenced to the applicable MSDS.
   b. Appropriate hazard warnings.
   c. Name/address of the chemical manufacturer.

2. Portable containers into which hazardous chemicals are transferred will be labeled unless all the following conditions are met:
   a. The contents of the portable container are for immediate use by the person making the transfer.
   b. The container is used only by, and remains under the control of, the person making the transfer.
   c. The unlabeled portable container is used only within the work shift during which it was originally filled.

3. Portable containers that hold hazardous chemicals and do not fulfill the requirements of paragraph D.2. shall be labeled.

4. Labels on incoming containers should not be destroyed, removed, or defaced.

5. Supervisors and the Safety Department shall be responsible for ensuring labeling of on-site containers containing hazardous chemicals which are handled/used by affected contract personnel.

E. ON-SITE SUBCONTRACTORS

1. Appropriate MSDS will be supplied to on-site subcontractors whenever their employees may be exposed to hazardous chemicals. The safety supervisor will provide these to the contractor's representative responsible for employee training/safety. If necessary, the contractor will be advised of the site's hazardous chemical labeling system. Suggestions for additional protective measures may also be given to the contractor.

2. Subcontractors will be required to maintain MSDSs for the hazardous chemicals brought onto the project.
F. **EMPLOYEE INFORMATION AND TRAINING**

1. Information concerning hazard communication will be provided to contract employees regarding:
   b. Work areas where chemical hazards are present.
   c. The location and availability of the written Hazard Communication Program, list of hazardous chemicals, and MSDS.

2. Contract employees will be trained in:
   a. The methods of observations they may use to detect the presence or release of a hazardous chemical in the work area.
   b. The physical and health hazards of the chemical in their work area.
   c. The measures employees can take to protect themselves, which include:
      1. Work practice procedures.
      2. Emergency practice procedures.
      3. Personal protection equipment.
   d. Location of the MSDS file and written hazard communication programs.
   e. How to read labels and review MSDSs to obtain hazard information.

3. All contract employees will be trained at the time of the initial assignment and whenever a new hazard is introduced into their work area. The initial training will take place in the new employee safety orientation.

4. Employees will be trained on the hazards of routine and non-routine tasks, as well as unlabeled piping systems. Work activities are sometimes performed by employees in areas where chemicals are transferred through unlabeled pipes. Prior to starting work in these areas, the employee shall contact the plant operating supervisor for information regarding:
   a. Chemicals in the pipes.
   b. Potential hazards.
   c. Personal protective equipment.
   d. Safety precautions which should be taken.
5. The Safety Department is responsible for the initial hazardous chemical training for newly assigned employees. The employee’s immediate supervisor shall be responsible for all subsequent training for hazardous chemicals introduced in the employees work area. The immediate supervisor shall insure that each employee is aware of the hazards associated with the use and contact of chemicals, and the personal protection thereof.

G. HAZARDOUS NON-ROUTINE TASKS

1. Periodically, employees are required to perform hazardous non-routine tasks. Some examples are: confined space entry, painting reactor vessels, and transporting contaminated soil on site. Prior to starting work on these tasks, each employee will be given information by the Safety Department and craft supervisor about the hazardous chemicals that may be encountered during these tasks. This information will be in addition to safety instructions given by each craft supervisor and will include specific chemical hazards, PPE, and steps being used to reduce the hazards, including ventilation, respirators, emergency procedures, switching out employees, etc.

2. Some examples of non-routine tasks performed by employees are:
   a. Transporting contaminated soil on site.
   b. Breaking of hazardous pipelines.
   c. Erecting scaffolds inside vessels.
**SECTION I**

<table>
<thead>
<tr>
<th>Manufacturer's Name</th>
<th>Emergency Telephone No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Address (Number, Street, City, State, and ZIP Code)</th>
</tr>
</thead>
<tbody>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>Chemical Name and Synonyms</th>
<th>Trade Name and Synonyms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Chemical Family</th>
<th>Formula</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SECTION II - HAZARDOUS INGREDIENTS**

<table>
<thead>
<tr>
<th>PAINTS, PRESERVATIVES, &amp; SOLVENTS</th>
<th>% TLV (Units)</th>
<th>ALLOYS AND METALLIC COATINGS</th>
<th>% TLV (Units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pigments</td>
<td></td>
<td>Base Metal</td>
<td></td>
</tr>
<tr>
<td>Catalyst</td>
<td></td>
<td>Alloys</td>
<td></td>
</tr>
<tr>
<td>Vehicle</td>
<td></td>
<td>Metallic Coatings</td>
<td></td>
</tr>
<tr>
<td>Solvents</td>
<td></td>
<td>Filler Metal Plus Coating or Core Flux</td>
<td></td>
</tr>
<tr>
<td>Additives</td>
<td></td>
<td>Others</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES | % TLV (Units) |
|                                                       |               |

**SECTION III - PHYSICAL DATA**

<table>
<thead>
<tr>
<th>Boiling Point (°F.)</th>
<th>Specific Gravity (H₂O = 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Vapor Pressure (mm Hg.)</th>
<th>Percent, Volatile by Volume (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Vapor Density (Air = 1)</th>
<th>Evaporation Rate (___________ = 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>Solubility in Water</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Appearance and Odor</th>
</tr>
</thead>
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<tr>
<td></td>
</tr>
</tbody>
</table>

**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

<table>
<thead>
<tr>
<th>Flash Point (Method Used)</th>
<th>Flammable Limits</th>
<th>Lei</th>
<th>Uei</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>Extinguishing Media</th>
</tr>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Special Fire Fighting Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Unusual Fire and Explosion Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Figure 11-1. Material Safety Data Sheet
(Front of form)
SECTION V - HEALTH HAZARD DATA

- Threshold Limit Value
- Effects of Overexposure
- Emergency and First Aid Procedures

SECTION VI - REACTIVITY DATA

<table>
<thead>
<tr>
<th>Stability</th>
<th>Unstable</th>
<th>Conditions to Avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stable</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incompatibility (Materials to Avoid)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Decomposition Products</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous Polymerization</th>
<th>May Occur</th>
<th>Conditions to Avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Will Not Occur</td>
<td></td>
</tr>
</tbody>
</table>

SECTION VII - SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled

Waste Disposal Method

SECTION VIII - SPECIAL PROTECTION INFORMATION

<table>
<thead>
<tr>
<th>Respiratory Protection (Specify type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ventilation</td>
</tr>
<tr>
<td>Local Exhaust</td>
</tr>
<tr>
<td>Mechanical (General)</td>
</tr>
<tr>
<td>Special</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Protective Gloves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Protection</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Protective Equipment</th>
</tr>
</thead>
</table>

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

Other Precautions

Figure 11-1. (Cont'd.)
WRITTEN HAZARD COMMUNICATION PROGRAM

The following summary describes the requirements, procedures, training, and information applicable to this job site with regard to hazardous substances.

WARNING LABELS

The warning label system used for hazardous materials is a nonstandardized system. These labels vary in appearance and content but they should, as a minimum contain the following information:

- Identity of the hazardous chemical
- Appropriate hazard warnings
- Name and address of the chemical manufacturer, importer, or other responsible party.

These warning labels should be read by the employee who use the materials. If you do not understand the messages contained on the label, do not use the material.

HAZARDOUS MATERIALS LIST

A list of all hazardous materials used on this project is maintained at the . . . . . . . . . . . . This list is updated frequently. If you find a material that is not on the list, report it immediately to the Safety Department or on site Designated Safety Representative.

Figure 11-2. Model Written Hazard Communication Program
MATERIAL SAFETY DATA SHEETS

An MSDS is available for viewing or copying at the . . . . . . office.* Upon reasonable notice, you and your employee representative may receive copies of the MSDS for the hazardous materials located in your work area.

HAZARDS OF NONROUTINE TASKS

While on the jobsite, you may encounter hazards that are not related to your work.** The following is a list of these hazards.

EMPLOYEE INFORMATION AND TRAINING

Information to Employee

Hazardous operations: At this . . . . . . jobsite, the following operations use hazardous materials:

Examples:***

1. Painting - jobsite to list paint and related materials.
2. Acid washes - jobsite to list hazardous materials, such as specific acids.
3. Demolition - jobsite to list hazardous materials, such as asbestos.

* State Right-To-Know laws vary significantly on this location requirement, thus a thorough review of local laws may be required.

** (Note: This section is specifically set aside for hazards that are present but not part of an employee's specific work task. Hazards such as working in operating chemical or power plants, demolition, or hazardous waste sites, must be addressed with plans developed to protect employee.)

(Construction Company)

Figure 11-2. (Cont'd.)
Training

1. Material Safety Data Sheet training: There are nine sections on a Material Safety Data Sheet. Each section contains pertinent information that you should have and understand before starting to work with hazardous material. The following paragraphs discuss each section.

   **Section I** - Identifies the chemical and the source, plus emergency telephone numbers.

   **Section II** - Lists the hazardous ingredients by name and the OSHA Threshold Limit Value (TLV).

   **Section III** - Physical Data: This section describes the appearance and odor of a hazardous material, chemical characteristics (e.g. boiling point, vapor density, volatility), and other physical data.

   **Section IV** - Fire and Explosion Data: This section describes the potential of a fire and explosion when using this material and the type of fire extinguishing and fire fighting procedures.

   **Section V** - Health Hazard Data: This section tells the symptoms of over-exposure to the hazardous material. It also gives emergency and first aid procedures that should be used.

   **Section VI** - Reactivity Data: This section tells how stable the product is and lists incompatible materials that should not come in contact with this material.

   **Section VII** - Spill or Leak Procedures: This section addresses the steps to be taken when material is released or spilled. It also describes the waste disposal method.

   **Section VIII** - Special Protection Information: This section tells what respirator, gloves, eye protection, and other equipment is required. Ventilation requirements to prevent accumulation of gases and vapors within the work area are also presented.

   **Section IX** - Special Precautions: This section gives instructions on handling and storage of the hazardous materials and other precautions necessary for employee protection.

Employee Protection Training

2. On the . . . . . . project, the ____________ Site Safety Representative, or project superintendent will specify what safety and monitoring equipment will be used and will train you in proper use. For each process that uses hazardous materials, the following will be selected according to the properties of the hazardous material:

   - Measures you must take to protect yourself when using the hazardous material.
   - Personal protective equipment you must use.
   - Special handling procedures.
   - Monitoring equipment.
   - Appropriate work practices.
   - Emergency procedures.

*** Note that these are only examples. Each job will have unique hazards that change as work progresses. This program must be updated as new hazards are introduced.

**** Commercially available training tapes, books, etc., are available to assist these training sessions.

Figure 11-2. (Cont'd.)
Model Letter to Employees

(Construction Company)

Job:
Address:

To: All Employees:

It is (Construction Company) policy to comply with all applicable hazard communication laws. The law provides that (Construction Company) employees who work with hazardous materials at construction jobsites be made fully aware of these hazards and that our safety and health procedures be effectively communicated to our employees.

As part of this effort, we have a written hazard communication program for our employees. This program is intended to help you understand the hazardous materials that you work with and the precautions necessary for your well-being, the well-being of your co-workers, the public, and the facilities where you work. There are six components to our program:

■ A written hazard communication program (which explains hazards in detail to the employees).
■ Warning labels on containers
■ Hazardous materials list - specific to the jobsite
■ Material Safety Data Sheets (MSDS) (OSHA Form 20)
■ Procedures covering the hazards of nonroutine tasks
■ Employee information and training

As with all job safety and health programs, this will require everyone's cooperation and assistance to make it a successful endeavor. Your questions or comments concerning the hazard communication program should be brought to the attention of the Safety Representative on your jobsite. On this job, your Safety Representative is ____________________________.

Figure 11-2. (Cont'd.)
HAZARD COMMUNICATION JOBSITE CHECKLIST


2. The Senior (Construction Company) Field Representative must communicate in writing and contractually to contractors and subcontractors the applicability of this "Hazard Communication Directive."

3. The Safety Representative develops and implements the written hazard communication program and distributes a letter to all employees.

4. Procurement requests MSDS's on all purchase orders.

5. The Superintendent/General Foreman/Foreman must verify all employees:
   a. have been trained and informed of job hazards before they work in a hazardous area.
   b. wear, use, maintain, and service the personal protective equipment that is assigned to them.

6. The Safety Representative compiles a list of hazardous materials known to be present and posts this list.

7. The Safety Representative maintains the MSDS file and locates it so that it is available to all work shifts.

8. The Safety Representative provides information and training on hazardous chemicals to employees at the time of initial assignment or whenever a new hazard is introduced to their work area.

9. The Safety Representative develops and implements a procedure to inform the employees of the hazardous non-routine tasks.

10. The Safety Representative maintains a recordkeeping system.

11. The Safety Representative maintains emergency phone numbers from MSDS in order to obtain information withheld as trade secrets, should injury or illness occur.

Figure 11-2 (Cont'd.)
This procedure shall set forth the guidelines for planning and implementing an emergency project evaluation plan.

It may be necessary to evacuate the construction project at any time. Potential disasters include fire, explosions or potential explosion, floods, severe storms, hurricanes or tornado warnings, fumes, gas or radiation releases, electrical failures, or structural failures. The history of such happenings reveals a saving of life and property when an evacuation procedure was effectively utilized.

Project plans and procedures should provide for the designation of a primary control center and an alternate. The control center should be located at a focal point of telephone and/or radio and intercom communications.

Provisions should be made to control and limit the use of the communication system so that emergency calls may be handled promptly. Personnel assigned to the operation of the control center should have decision-making authority on any action to be taken during the emergency. If necessary, progress reports should be communicated with evacuation assembly areas.

**Supervisory Control - Organization Functions and Responsibilities**

Supervisory personnel or a senior supervisor should be assigned to predesignated locations within the facility(s) that houses emergency utility switches and valves so orderly shutdown procedures can be effected immediately if required.

Each employee at the project has a responsibility during an evacuation, even if it is just proceeding promptly to an assembly area in an orderly manner and reporting to his or her supervisor.

The Project Manager/Superintendent shall act as the evacuation supervisor. A supervisor shall:

1. Approve the procedure and the location of the assembly areas.
2. Determine if there is a need for evacuation.
3. Give the order for the alarm to be sounded and direct the evacuation activities.
4. Also provide the communication center (usually the telephone operators) with a listing of contractors or project offices on the site for warning upon issuance of instructions for evacuation.
5. Provide and maintain a list of outside emergency services such as ambulance, hospitals, doctors, fire department, police, and such others as may be deemed necessary to be called for assistance.
6. Notify the client as to the nature of the emergency and arrange to keep the client informed.

The Senior Construction Project Representative shall also screen and approve all press releases with the client.

The Office Manager is a logical person to process personnel accounting reports coming in from the field. A check shall be made of missing persons against absentee reports, and the force status shall be reported to the evacuation superintendent.

The Safety Representative shall obtain aid when so directed. There may be a need for outside fire companies, mutual aid help, ambulance service, or law enforcement agencies. The Safety Representative shall see to it that the fire brigade is in action and that first aid is alerted. Trained first aid personnel shall attend to the injured and transport them to the first aid station when necessary.

The Safety Representative shall also act as a liaison between the evacuation superintendent and first aid.

The Safety Representative shall direct the care and treatment of the injured.

The Payroll Supervisor shall be responsible for the evacuating and accounting of visitors.

The telephone operator shall maintain the switchboard and refuse incoming calls until directed otherwise by the evacuation superintendent. Emergency calls are to have priority. The telephone operator shall notify the construction gate guards regarding the location of the emergency.

The supervisors who are responsible for mobile equipment shall determine whether the equipment shall remain where it is at the time of the emergency or be moved to a predetermined parking area. Outside drivers shall also be directed accordingly.

Engineers shall act as assembly area wardens as assigned. They shall collect personnel accounting reports and forward them to the Office Manager at the evacuation headquarters. The area warden shall also relay instructions from the evacuation superintendent whether they are to stay, return to work, or leave the project to those assembled in his area.

Craft supervisors shall report to evacuation headquarters, then stand by for instructions. They shall expedite the search for any missing employees.

General Craft Supervisor and Craft Supervisor shall make an accounting of their crews and report this to the assembly area warden. Names, employee numbers, and last known whereabouts of missing people shall be forwarded to evacuation headquarters.
Section 12: Disaster Planning Evacuation

The Safety Representative shall assemble the fire brigade, or brigades where applicable, if needed to fight fire or to stand by in their assembly area for other instructions. The Safety Representative shall also account for these persons and report information to an assembly area warden.

Employees, upon hearing the evacuation signal, shall shut down all their equipment, stop smoking and, if safety permits, remove all gas cylinders from inside of buildings. Required personal protective equipment is to remain in use. Employees shall proceed quickly to their assigned assembly areas and shall remain there pending further instructions from their supervisor. If they return to work, new permits must be issued.

The Office Manager shall preassign an employee to log the events and record the activities as they occur and are relayed to and from the evacuation headquarters.

Each supervisor with an evacuation function shall appoint an alternate, runners, and other required assistants.

**Facilities**

**Alarms**

*There must be a recognized signal via horn, whistle, siren, or public address system which is audible to all.* If there are any areas where the alarm cannot be heard, this condition must be corrected with special provision made for remote work areas.

Upon completion of a comprehensive emergency plan and procedure for the project, notices are to be posted for the employees' information.

**Sample:**

**EMERGENCY EVACUATION PROCEDURE:** When the emergency signal consisting of three (3) repeated long blasts of the job whistle is sounded, all employees will immediately cease work, secure all equipment, and proceed directly to the designated assembly area (parking lot, change house, or other appropriate area). Employees shall remain there until further instructions are assigned by their craft supervisor.
Assembly Areas

Each employee must be assigned a definite location to proceed. The assembly areas should be located at strategic places, close enough to work areas for access, but far enough away from potential disaster areas to afford protection to personnel. Alternate areas should be considered in case of inclement weather and other possible conditions. Assembly areas provide a definite destination for an orderly evacuation, allow for grouping so that instructions can easily be conveyed to all, and allow the Office Manager to expedite the search for missing persons.

Procedures should be established for an orderly shutdown of work with the sounding of the emergency warning signal. Equipment should be secured; burning, heating, gas system, and other potentially hazardous devices should be turned off. Personnel shall then proceed to designated emergency assembly areas.

After employees have reached the assembly area, foremen and general foremen shall proceed immediately to account for their crews. Timekeepers shall obtain the names and badge number of any employees not accounted for.

Employees are to remain in the assembly area pending instructions from Management supervision. Management supervision shall inform employees to the type of emergency and plans for the resumption or suspension of work. If the work is to be resumed, those employees who elect to leave the job should be informed they will receive pay for time actually worked.

Security (Where Applicable)

Means of alerting the construction project security force must be established. If a paging system is used, the announcement should be innocuous.

A planned program of action for guards must be clearly outlined. Such action should not result in access points being left unguarded to counter diversionary tactics.

A similar announcement over a public address or paging system can be utilized to alert predesignated supervisory personnel.

Adequate protection of (Construction Company) priority information and other records essential to the operation of business should be established.

Client’s Evacuation Control Headquarters

The client should also set up an evacuation headquarters to control its people assigned on the site and serve as a communication station. This would permit the evacuation superintendent to keep the client informed of current conditions.
An evacuation procedure is only good if employees are aware of it. With infrequent use and frequent employee turnover, it is necessary to review this procedure at least once each quarter. Craft Supervisors should include this in their new employee orientation. It should be discussed in safety meetings and a planned practice drill should be conducted at least once every year.
THUNDERSTORM SAFETY PROCEDURE

Thunderstorms, and their accompanying hazards, pose a threat to employees and equipment. Since thunderstorms occur in most parts of the country, it is vital that certain precautions be taken to minimize their effect.

Heavy rain, hail, lightning, high winds, and tornadoes may accompany a thunderstorm. For these reasons a thunderstorm can be very destructive. Since thunderstorms are difficult to foresee, it is important that employees be educated in the safety precautions to take in the event of a thunderstorm.

Employees shall seek shelter indoors during a thunderstorm when possible. When indoors, it is important employees avoid contact with electrical appliances and electrically conductive surfaces and structures.

If employees are outdoors, they shall remain lower than the nearest highly conductive object. Lightning will strike the easiest source to ground, not necessarily the highest. Conductive objects such as trees, telephone poles, crane booms, and flag poles shall be avoided. A safe distance from a conductive object is twice the object's height. Lightning is a thunderstorm's worst killer.

Objects which may carry electric current from a remote thunderstorm shall also be avoided. These objects would include telephone lines, pipe lines, and fences. An employee shall not use electric tools outdoors if a thunderstorm is in the immediate area.

The rains accompanying a thunderstorm may create flooding conditions. National Weather Bureau advisories shall be monitored for flash flood warnings. Employees shall be instructed to avoid flood plains, drainage ditches, and dried creek beds when a flash flood warning is issued.

Employees must take certain precautions while driving during a thunderstorm. When poor visibility is encountered, the driver shall stop the vehicle until visibility improves. When lightning is in the immediate area, the employee shall seek shelter indoors, or remain in the vehicle away from interior metal parts. When high winds or flooding accompany the thunderstorm, the employee shall seek an appropriate protected area.

Employees shall not be permitted to work on cranes during a thunderstorm. In order to prevent damage or injury, cranes shall be grounded. If the crane is located on a barge or other vessel, the crane shall be adequately bonded. The crane's boom shall be lowered when winds exceed approximately 30 miles per hour. Barges and other vessels shall be secured to a stationary source.
BOMB THREAT PROCEDURE

The purpose of this procedure is to provide guidance to management of (Construction Company) projects in planning appropriate reaction to bomb threats.

General

Bomb threats are of three types, as follows:

1. **Actual Warning** - In which a bomb has been placed and a humanitarian notice is being given.

2. **Harassment** - In which the goal is to disrupt operations and/or impose economic hardship. In cases of harassment, the instigator is generally a disgruntled former employee or one with political, economic, or ideological beliefs different from those of the Corporation.

3. **Hoax** - In which the instigator derives a sense of power from the confusion and excitement created. In other cases the motivation frequently is the desire for paid time off from work.

The receipt of a bomb threat at the project requires a quick assessment as to whether the threat is an actual warning, harassment, or a hoax and the appropriate call to action by construction management. This requires that advance provisions be made for the immediate communication of any bomb threat to the project construction management. Upon reaching a decision after consideration and assessment, the prearranged procedure for the given situation is to be placed into action. Consider all threats as serious.

Organization and planning in anticipation of such an event is essential in handling bomb threats. In doing so, clear-cut levels of authority must be established. Only by using an established organization and procedure can these problems be handled with the minimum risk to persons and property.

The particular characteristics and conditions existing at each jobsite requires that each project develop emergency procedures to meet the contingencies of the project site.

The following material is supplied for consideration in the development of project procedures.
Preparation/Planning

In order to determine which type of bomb threat applies and to afford the maximum protection for employees and projects, it is essential that management proceed with an immediate assessment of all factors and determine whether or not to evacuate a portion or all of the construction site.

The communications accuracy of a quick decision based on these considerations will depend primarily upon the accuracy and extent of the information concerning the call and caller using the threat. The Instructions to Telephone Operators should be supplied to the telephone operator(s) who are normal recipients of such calls. The Bomb Threat Incident Report should be used with the operator instructions to assist in the collection of further detail related to the source of the threat.

Ensure that your switchboard operator is thoroughly familiar with the action to take upon receipt of a bomb threat (included in Instructions). Be sure operator has a "Bomb Threat Incident Report," to use as a guide to the conversation.

Designate the individual to whom the operator is to report the threat. Sufficient alternates must be designated to assure that at least one will be available in the facility; an order of precedence for notification should also be established.

The distribution of these appendices should be limited to those individuals selected and instructed by the Senior Project Representative.

A comprehensive employee education program should be established. Every employee should have an adequate overview of just what precautions the company is taking in the event a bomb threat is received. In making employees knowledgeable of the planned safeguards, a panic situation usually will not occur. Panic is one of the most contagious of all human emotions. It is caused by fear - mostly fear of the unknown. Before and during a threat, keep your employees informed.

Arrange for notification of necessary fire, ambulance, and law enforcement agencies for assistance as may be required. In the preparation of the project procedure, contact should be established with police and fire departments and other local governmental agencies to determine the following:

1. Do fire or police departments have a bomb disposal unit?
2. Under what conditions is the unit available?
3. What is the telephone number for the unit?
4. How can you obtain the services of the bomb unit in the event of a threat?

5. Will the unit assist in the physical search of the site or will it only disarm or remove explosives?

Organize and train search units consisting of key supervisor personnel. To be proficient in searching, personnel must be thoroughly familiar with the areas they are assigned to search. These units should be all volunteers and trained only in search techniques and prohibited from any attempt at neutralizing, removing, or otherwise having contact with the device. The removal and disarming of a bomb or suspicious object must be left to professionals in explosive ordinance disposal.

It is of paramount important that all inquiries by the news media be directed to the owner's representative appointed as company spokesman. All other employees should be instructed not to discuss the situation with outsiders, especially the news media. The purpose of this provision is to furnish the news media with accurate information and see that additional bomb threat calls are not precipitated by irresponsible statements from uninformed sources. Should it be determined that evacuation is warranted, the prearranged emergency warning system should be sounded and the project site evacuated in an orderly manner in accordance with Emergency Evacuation Procedures.

**MANAGEMENT - EVACUATION CONSIDERATIONS**

The decision as to appropriate action should be based on the evaluation of the following items:

1. Is the caller specific as to time?
2. Is the caller specific as to location - particularly in a multiple building facility?
3. Is the caller specific as to type of bomb?
4. Does the caller seem to express honest concern over possible injury to people?
5. Does the caller seem to be serious, under 35, sober, and calling from a location other than one with a background noise that would be associated with a bar?

If (1) and (2) and either (3), (4), or (5) are affirmative, the indicated building(s) should be evacuated from at least 30 minutes before stated time of explosion (if given) until at least 30 minutes after that time. If time is not given, evacuation should be carried out for a period long enough for a supervisory search. If neither (1) nor (2) above is affirmative, evacuation is not recommended, but a discreet supervisory search should be carried out in single-building facilities (such to be designated in advance). After any evacuation, re-entry should follow another supervisory search.
INSTRUCTIONS TO TELEPHONE OPERATOR(S)

1. Keep the caller on the line as long as possible. Ask the caller to repeat the message. Record words spoken by the person as completely as possible.

2. If the caller does not indicate the location of the bomb or the time of possible detonation, you should ask for this information.

3. Inform the caller that the building(s) are occupied and detonation of a bomb could result in death or serious injury to many innocent people.

4. Pay particular attention to peculiar background noises such as motors running, background music, and other noise which may give a clue as to where the call is being made.

5. Listen closely to the voice (male, female), voice quality (calm, excited), accents, and speech impediments.

6. Try to keep the caller on the line as long as possible.

7. Immediately after the caller hangs up, report to the person(s) designated by management to receive such information. Then complete the "Bomb Threat Incident Report" and forward by messenger to the management individual designated to receive this report.
BOMB THREAT INCIDENT REPORT

Who received call: ___________________________ Date: _______________________

Time (am/pm): ______________ Location call received: __________________________

Origin of call: Local ______ Long Distance ______ Booth ______ Internal ______

Time caller hung up: ___________ (am/pm)

THE CALLER: (try to hold caller on line and get all information possible)

Time bomb will explode: ______ Kind of bomb: _________________________________
What bomb looks like: _______________________________________________________
How it is activated: ________________________________
Where it is located (building or area): ________________________________
Reason for placing bomb: _________________________________________________

Exact words of caller: ____________________________________________________

Caller's name (if given): ______________________ Male ______ Female ______

VOICE: Child _______ Adult _______ Approximate age: ______________________

VOICE CHARACTERISTICS

Accent or dialect: Local: ______ Not Local: ______ Foreign: ________________
Regional Characteristics: ___________ (specify) Other: ___________ (specify)

Tone:

Loud: ______ Soft: ______ High Pitch: ______
Low Pitch: ______ Raspy: ______ Other: ______
Pleasant: ______ Rational: ______ Irrational: ______
Calm: ______ Angry: ______

Speech:

Coherent: ______ Incoherent: ______ Righteous: ______
Emotional: ______ Laughing: ______ Fast: ______
Slow: ______ Distinct: ______ Distorted: ______
Stutter: ______ Nasal: ______

Language:

Excellent: ______ Good: ______ Poor: ______

Cursing: ______
Section 12: Disaster Planning Evacuation

BACKGROUND NOISE

Factory Machines: ______  Office Machines: ______  Bedlam: ______
Music: ______  Mixed: ______  Street Traffic: ______
Trains: ______  Animals: ______  Quiet: ______
Party Atmosphere: ______  Airplanes: ______  Voices: ______

SPECIAL NOTE: Did the caller appear familiar with plant or building by their description of the bomb location? Write out the message in its entirety and any other comments on a separate sheet of paper and attach to this checklist.
HURRICANE SAFETY PROCEDURE

This is a guide for planning the emergency procedures should a hurricane watch be issued. Such procedures shall be closely followed for the safety of personnel and reduction of damage the hurricane may produce.

A hurricane is a large storm accompanied by violent winds of 70 MPH or more and heavy rains. The path of destruction can be as wide as 500 miles. The hurricane season normally begins June 1 and ends November 30 in the northern hemisphere.

Upon issuance of hurricane warnings, the Senior Construction Project Representative shall designate an individual who shall be responsible for monitoring the hurricane's path through National Weather Service advisories. The designated individual shall maintain a weather chart indicating the path and progress of the storm and note projections furnished by the Weather Service advisories. The locations of the eye, or storm center, should be determined as accurately as possible. Should the eye pass over the project, the relative calm is violently shattered by sudden high winds from the opposite direction.

If evacuation is necessary, the procedure outlined at the beginning of this section shall be followed. Instructions from the local government shall also be followed.

To protect the project against the destructive winds associated with hurricanes, the following preparations shall be made:

1. All loose material shall be securely anchored or stored before the storm arrives. Special attention shall be paid to flat, light, and empty containers.

2. Windows which may be affected shall be taped or boarded. Larger windows may be broken by high winds, while smaller windows may be broken by wind-blown objects.

3. All unfinished masonry walls and forms for concrete walls shall be additionally braced.

4. Tarpaulins and temporary covers shall be checked to see if they are waterproof and tightly secured.

5. Light siding shall be secured.

6. All small buildings shall be tied down to a deadman or similarly anchored. These include such buildings as trailers, portable toilets, and craft shanties.
7. Roofs shall be made as clear as possible. Items not completely installed, such as vents, chimneys, and heating and ventilating ducts, shall be secured.

8. Openings or ducts from fans, ventilators, and air conditioners shall be mechanically closed.

9. Small, lightweight equipment shall be placed in warehouses, buildings, or weighted down.

10. Scaffolds shall be taken down or adequately secured.

In order to protect the site from heavy driving rains and flood waters, the following preparations shall be made:

1. Equipment shall be placed on high ground or where it will be least affected.

2. Entrances and openings subject to flooding shall be protected with sand bags or sand dikes.

3. All stationary exterior equipment necessary for continuous site operations shall be protected with tarpaulins and/or sand bags, or by similar means.

4. Emergency procedures for electrical shutdown shall parallel normal shutdown procedures.

5. Office equipment, files, records, and other important items shall be placed above expected flood level.

6. Tanks of flammable, caustic, acidic, gaseous, or corrosive materials which may float off their foundations shall be secured. Welding gas lines should be valved off at the source.

In order to prepare the project for an emergency such as a hurricane, certain basic emergency supplies shall be kept available. These supplies include sand, sand bags, tarpaulins, lumber, plywood, heavy rope, and emergency generators. Battery-powered radios and lights shall be kept on hand. The radios may provide the only means of contact outside the project should there be an electrical failure.

A severe hurricane may disrupt normal operations in the area of the jobsite. An adequate supply of fresh drinking water and gasoline shall be stored on the project in case they are not available after the storm.
Should an evacuation be necessary, the Project Manager/Superintendent, will be responsible for deciding whether a small force should remain on the project for maintenance during the storm.

In order to protect jobsite cranes, booms shall be lowered when winds exceed approximately thirty (30) miles per hour. Barges and other vessels shall be secured to a stationary source. All cranes must be grounded.

A thorough inspection of the project shall be made after the storm. This inspection team, appointed by the Project Manager/Superintendent, will go through the entire site to assess any damage and determine what repairs are needed.
TORNADO SAFETY PROCEDURE

Tornadoes are violent storms of a short duration which occur during all seasons and in all 50 states. This is a guide for protecting employees and preparing projects for a tornado.

A tornado watch is issued by the National Weather Bureau when a tornado is expected in or near the area. When a tornado watch is issued, the senior construction project representative shall appoint an individual to monitor the Weather Bureau advisories. A tornado warning will state where the tornado was sighted, where the tornado is expected to move, and when it is expected to affect the area warned.

When a tornado warning is issued, emergency precautions shall be taken immediately. An emergency alarm shall be sounded and all employees shall move to designated emergency shelters. The predetermined shelter should be located in a reinforced building, the basement of a building, an inner hallway on a lower floor, or a similar location which is away from windows. A large room with a wide, free-span roof shall not be used.

Battery-powered radios shall be available in the event of a power failure. During the tornado alert, weather information shall be monitored for further advisories.

A thorough inspection of the project shall be made after a tornado has struck. The inspection team, appointed by the senior construction project representative, shall aid in emergency rescues and repairs and assess damage. They shall report their findings to the senior construction project representative promptly.
RADIATION EMERGENCY PROCEDURE

Emergency procedures must always be well planned and ready to be used at a moment's notice.

An emergency situation occurs when a radiation source is lost, damaged in an accident, or jammed outside the exposure device. An emergency situation exists when an individual is exposed to more than 100 mrem per week or more than is permitted to receive according to quarterly Radiation Exposure Authorization. An emergency is signaled when there is a sudden rise in the radiation level in a restricted work area. An emergency also exists if the radiation level in an unrestricted area rises above 2 mrem/hr and exists for such a period of time that an individual could receive 1 mrem in any hour.

In the event an emergency situation develops, the area shall be immediately evacuated and a restricted area established and guarded by responsible individuals against unauthorized entry.

The Project Manager/Superintendent or Safety Representative shall be notified immediately. The Safety Department shall be notified by the fastest means available for additional instruction.
Clothing and Personal Protective Equipment

Personal protective equipment and proper clothing must be worn when a hazard cannot be controlled or eliminated by engineering design or administrative controls. All protective equipment, respiratory devices, eye protection, gloves, etc., must be provided, used, and maintained in a reliable sanitary condition.

General

1. Personal protective equipment consisting of, but not limited to, goggles, face shields, hard hats, respirators, hearing protection, safety harnesses and lanyards, and safety glasses, shall be standard equipment on all projects.

2. All equipment issued must be disinfected, thoroughly cleaned, and in serviceable condition.

3. Goggles must be sanitized prior to issue.

4. All equipment must be clean and dry before storing and must be stored in a suitable area.

5. Employees must be instructed in the proper use of respirators. Respirators shall be regularly cleaned and disinfected by a competent person.

6. Employees should be encouraged to wear safety shoes (ANSI Z41 approved). Durable shoes shall be worn and under no conditions should street shoes or tennis shoes be worn.

7. Employees should wear suitable work gloves when necessary, depending on the type of task being performed.

Housekeeping

1. Combustible scrap and debris must be removed from the jobsite at regular intervals.

2. All debris must be cleared from the buildings and work areas daily.

3. Nails, wire ties, and other accessories shall be promptly removed from lumber or any other used lumber at the time of stripping or dismantling. If it is not practical to remove or bend nails in used lumber to avoid tripping hazards and nail traps, the lumber must be stacked for cleaning and re-use. Lumber must not be scattered.
4. The work site, especially stairways and walkways, shall be kept clear of obstructions which may create tripping or other hazards.

5. Tools must be stored in tool boxes. If laid aside temporarily, the tools must be placed where they will not present a hazard. (Tools must not be placed in a position to fall on someone at a lower level.)

6. Oily rags, waste, etc., that are combustible will not be permitted to accumulate in work areas but shall be placed in metal containers equipped with covers for removal or re-use.

7. Employees, while cleaning up, will not throw or drop materials from upper levels to lower levels or to the ground. (See 29 CFR 1926.252 for specific requirements).

8. Employees are to dispose of lunch wrappings, excess food, water cups, etc., by placing such in metal containers provided for that purpose.

**Ladders**

Except where permanent stairways, temporary stairways, suitable ramps, or runways are available, ladders must be provided to give safe access to all elevations. (Ladders must conform to the appropriate ANSI Safety Code.)

1. Cross-grain in rungs, steps, and cleats will not be allowed.

2. Wooden steps must be made from thoroughly seasoned materials, free from shakes, knots, pitch pockets, decay, or other defects.

3. Wood cleats shall be housed into the edges of the side rails not less than one-half (2”) inch. The cleats must be nailed to each rail with three (3) 10-d nails or fasteners of equivalent strength.

4. Step spacing shall be uniform and must not exceed twelve (12”) inches.

**Wood Side Rails**

1. Job-made ladders must meet OSHA Regulations 29 CFR 1926 Subpart X.

2. Wood side rails must be seasoned, straight-grained wood, free from defects that will impair their strength.

3. Side rails must be free from splinters and sharp edges removed before using.
Use and Care:

1. Ladders with broken or missing rungs or steps, broken or split side rails, or other faulty and defective parts must not be used. Ladders with such defects shall be withdrawn from service immediately and tagged for repair or destruction.

2. Portable ladders should be placed so the horizontal distance at the bottom is not less than one-quarter (3) of the vertical distance to the top.

3. Portable ladders should be placed so that the side rails have secure footing. The top should be securely fastened to prevent movement.

4. Single short ladders must not be spliced together to provide longer reach.

5. Separate or double cleat ladders for ascending and descending should be provided when traffic is heavy. (i.e., working areas with simultaneous two-way traffic).

6. All extension and single ladders must be tied off.

7. Employees must have both hands free and face the ladder when ascending or descending.

8. Portable ladders must have non-slip bases or other means to prevent displacement when used on smooth surfaces.

9. Ladders shall be of sufficient length to project not less than three feet (3') above the landing (except where the extension would in itself become a hazard).

10. Single portable ladders over thirty feet (30') shall not be used. If greater heights must be reached, separate ladders must be used and intermediate landing platforms provided.

11. Ladders shall not be placed or used in elevator shafts or hoist-ways except by workers engaged in work within such shafts or hoist-ways. They must be protected from falling objects from operations at higher levels in or adjoining the shaft.
Section 13: General Safety Rules for Construction

Welding and Burning

1. A properly rated fire extinguisher must be located near all welding and cutting operations. (Standby fire watcher where necessary).

2. When necessary to provide protection for other employees and materials, screens or shields must be used where it is feasible.


4. Electric arc welding equipment must comply with the OSHA 1910.252 requirements for electric arc welding apparatus, National Electrical Manufacturers Association, or the safety standard for transformer-type arc welding machines, ANSI C33.2 - 1956, Underwriter's Laboratories.

5. Gas cylinders are to be kept tied and in an upright position - empty or full.

Arc Welding

1. Ground and electrode cables must be supported to prevent obstructions from interfering with the safe passage of workers.

2. The ground for the welding cable must be mechanically strong and electrically adequate for the service required.

3. An electrode holder of adequately rated current capacity, insulated to protect the operator against possible shock and to prevent a short or flash when laid on grounded material, must be used.

4. Eye protection devices must be used by welding operators and helpers. (Refer to OSHA 1926.102 - Eye and Face Protection).

5. Where it is necessary to couple or uncouple several lengths of cable for use as a welding circuit, insulated cable connectors must be used on both the ground line and electrode holder line. Soldered and taped splices may be used for permanent connections.
Storage and Use of Cylinders

1. All local, state, municipal, and federal regulations shall be closely observed relative to the storage of oxygen and acetylene cylinders.

2. Cylinders shall be kept away from any sources of heat and combustible materials.

3. Cylinders shall be stored in assigned places where they are not likely to be knocked over or damaged.

4. Cylinders containing oxygen shall be placed at least 20 feet (20') from cylinders containing combustible gases.

   **NOTE:** Federal regulations require that "oxygen" cylinders in storage shall be separated from fuel gas cylinders or combustible materials (especially oil or grease) a minimum distance of 20 feet (20') or by a non-combustible barrier at least five feet (5') high having a fire-resistance rating of at least one-half (2) hour.

5. When moving cylinders by crane or derrick, a cradle, boat, or suitable platform shall be used. Slings, hooks, or electric magnets shall not be used. Valve protection caps must always be in place.

6. Unless cylinders are secured on a special truck, regulators should be removed and valve protection caps in place.

7. Any attempt to mix gases in a cylinder, refill a cylinder, or use it for purposes other than intended by the supplier **shall be prohibited**.

8. For storage in excess of 2,000 cubic feet total gas capacity of cylinders, a separate room or compartment shall be provided, or cylinders shall be kept in a special building.

9. Fuel gas cylinders in which leaks occur should **immediately** be taken out of use and handled with the following procedure:

   **A.** The valve should be closed, the cylinder tagged and moved outdoors away from sources of flame or sparks and the supplier notified. A regulator attached to the valve may be used temporarily to stop a leak through the valve seat.
B. If the leak occurs at the fuse plug or other safety device, tag the cylinder, move it outdoors away from sources of flame or sparks and leave the valve slightly open to permit the gas to escape.

C. Warnings against approaching the leaking cylinder with lighted cigarettes or other sources of ignition must be posted. The supplier will be notified and his instructions for returning the cylinder followed.

10. Acetylene cylinder valves should be opened slowly not more than one and one-half (1-1/2) turns of the spindle. The valve should be opened only with the special wrench provided by the supplier. (This wrench should be left in position on the stem while the cylinder is in use so that it may be quickly turned off in case of emergency.)

11. Warnings must be issued against permitting a jet of oxygen to strike an oily surface, greasy clothes, and against being directed into fuel, oil, or storage tanks that have contained a flammable substance.

12. The use of hammers and wrenches for opening oxygen cylinder valves shall be prohibited. When valves cannot be opened by hand, the supplier should be notified.

13. When a pressure-reducing regulator is attached, the oxygen cylinder valve should be opened slightly at first so that the regulator cylinder pressure gauge can move up slowly, after which the valve may be opened all the way. If the high pressure is suddenly released, it is likely to damage the regulator and pressure gauges. The operator should be instructed to stand to the side of the regulator and not in front of the glass-covered gauge faces when opening the cylinder valve.

14. When the oxygen cylinder is in use, the valve should be opened fully in order to prevent leakage around the valve stem.

**Pressure-Reducing Regulators**

1. Pressure-reducing regulators shall only be used with the gases for which they are intended.

2. Never use any gas from a cylinder without first attaching a suitable pressure-reducing regulator to the cylinder valve.

3. Before opening an oxygen cylinder valve, the pressure-reducing regulator should be closed by turning the pressure adjusting screw to the left (counterclockwise) until it turns freely.
Hose and Hose Connections

1. Use only hoses made especially for welding and cutting to connect an oxy-acetylene torch to gas outlets. Metal-clad or armored hoses are not recommended.

2. Unnecessarily long lengths of hose should be avoided.

3. Hose should be inspected for leaks, worn places, loose connections, etc., frequently.

4. Discard any hose in which a flashback has occurred.

5. A single hose having more than one gas passage must be checked for a wall failure that would permit gases to flow into the wrong passage.

6. When parallel lengths of oxygen and acetylene must be taped together for convenience and to prevent tangling, not more than four inches (4") out of twelve inches (12") shall be covered with tape.

Maintenance, Use, and Storage of Tools

1. Only proper tools for the work to be done are to be provided.

2. Tools shall be sorted and placed in racks or bins constructed for each type tool.

3. Only tools in good condition shall be issued from the tool room or permitted to be used on the job.

4. When craftsmen furnish their own tools, such tools shall conform to the requirements demanded for satisfactory, efficient work and for safety.

5. Tools with mushroomed heads, split handles, or any other defect must be taken out of service.

Scaffolds

General Requirements

1. Each scaffold and scaffold component shall be capable of supporting, without failure, its own weight and at least four times the maximum intended load applied or transmitted to it.
Section 13: General Safety Rules for Construction

2. All scaffolds must be maintained in safe condition; scaffolds damaged or weakened by any cause shall be immediately repaired and shall not be used until repairs have been made.

3. The stall load of any scaffold hoist shall not exceed 3 times its rated load.

4. Each scaffold platform and walkway shall be at least 18 inches wide.

5. Each platform unit (i.e., scaffold plank, fabricated deck) shall be installed so that the space between adjacent units and the space between the platform and the uprights is no more than 1 inch wide, except where it may be necessary to enhance the safety of the scaffold.

Scaffold Construction

1. The front edge of all platforms shall not be more than 14 inches from the face of the work, unless guardrail systems are erected along the front edge and/or personal fall arrest systems are used.

2. The maximum distance from the face for plastering and lathing operations shall be 18 inches.

3. When materials are being hoisted up onto a scaffold, a tag line must be used to prevent the material from striking against the scaffold, unless hoisting equipment is being used and there is no danger of material striking against the scaffold.

4. Overhead protection shall be provided for workers on a scaffold exposed to overhead hazards.

5. Employees shall not work on scaffolds during storms or high winds.

6. Tools, materials and debris shall not be allowed to accumulate in quantities to cause a hazard.

7. Wood platform units shall not be covered with opaque finishes, except for platform edges which may be covered or marked for identification.

8. Platforms may be coated periodically with wood preservatives, fire retardant finishes and slip-resistant finishes; the coating may not obscure the top or bottom wood surfaces.
9. Scaffold components manufactured by different manufacturers shall not be modified in order to intermix them unless a competent person determines the resulting scaffold is structurally sound.

10. When taking down scaffolds, all nails should be immediately withdrawn from the lumber.

**Supported Scaffolds**

1. Supported scaffolds with a height to base width ratio (including outrigger supports, if used) of more than four to one (4:1) shall be restrained from tipping by guying, tying, bracing or equivalent means.

2. Ties, guys, braces or outriggers shall be used to prevent the tipping of supported scaffolds in all circumstances where an eccentric load, such as a cantilevered work platform, is applied or transmitted to the scaffold.

3. Supported scaffold poles, legs, posts, frames and uprights shall bear on base plates and mud sills or other adequate firm foundation.

4. Footings shall be level, sound, rigid and capable of supporting the loaded scaffold without settling or displacement.

5. Unstable objects shall not be used as working platforms.

6. All uprights shall be secure, plumb and braced to prevent swaying and displacement of the scaffold.

**Suspension Scaffolds**

1. Before the scaffold is used, direct connections shall be evaluated by a competent person who shall confirm, based on the evaluation, that the supporting surfaces are capable of supporting the loads to be imposed. In addition, mason’s adjustable multi-point scaffold connections shall be designed by an engineer experienced in such design.

2. Counterweights shall be made of non-flammable material and be secured by mechanical means to the outrigger beams to prevent accidental displacement. Sand, gravel and similar materials that can be easily dislocated shall not be used as counterweights.

3. Counterweights shall not be removed from an outrigger beam until the scaffold is disassembled. They shall be secured by mechanical means to the outrigger beams to prevent accidental displacement.
4. Tiebacks shall be installed perpendicular to the face of the building or structure, or opposing angle tiebacks shall be installed. Single tiebacks installed at an angle are prohibited.

5. The use of repaired wire rope as suspension rope is prohibited.

6. Ropes shall be inspected for defects by a competent person prior to each workshift and after every occurrence which could affect a rope’s integrity.

7. If wire rope clips are used on suspension scaffolds, there shall be minimum of 3 wire rope clips installed, with the clips a minimum of 6 rope diameters apart.

8. Clips shall be inspected and retightened to the manufacturer’s recommendations at the start of each workshift.

9. Suspension scaffolds shall not be used for the storage of materials.

Mobile Scaffolds

1. Do not ride mobile scaffolds.

2. Caster brakes must be applied at all times when scaffolds are not being moved.

3. Scaffolds shall be braced by cross, horizontal or diagonal braces, or a combination, to prevent lacking or collapse of the scaffold and to secure vertical members together laterally so as to automatically square and align the vertical members. Scaffolds shall be plumb, level and squared. All brace connections shall be properly secured.

4. Platforms shall not extend outward beyond the base supports of the scaffold unless outrigger frames or equivalent devices are used to ensure stability.

5. Before a scaffold is moved, each employee on the scaffold shall be advised of and made aware of the move.

Access

1. Hook-on and attachable ladders shall be positioned so their bottom rung is not more than 24 inches above the scaffold supporting level.

2. Hook-on and attachable ladders shall be specifically designed for use with the manufactured type of scaffold being used.
3. Hook-on and attachable ladders shall be positioned so as not to tip the scaffold.

4. A stair rail consisting of a top rail and a midrail shall be provided on each side of each scaffold stairway.

5. A loading platform at least 18 inches wide by at least 18 inches long shall be provided at each level.

6. Treads and landings shall have slip-resistant surfaces.

7. Steps and rungs of ladders and stairways used for access shall line up vertically with each other between rest platforms.

8. Cross braces on tubular welding frame scaffolds shall not be used as a means of access or egress.

Use

1. Scaffolds and scaffold components shall be inspected for visible defects by a competent person before each work shift, and after any occurrence which could affect a scaffold’s structural integrity.

2. Employees shall be prohibited from working on scaffolds covered with snow, ice or other slippery material except as necessary for removal of such materials.

3. Do not use ladders or makeshift devices on top of scaffolds to increase the height.

4. Power lines near scaffolds are dangerous. Exceptional care must be taken and no scaffold should be within ten feet (10’) of a bare or uninsulated power line.

5. All planked or staged areas shall be equipped with proper guard rails and toe boards when required.

6. Do not climb braces for access or egress.

7. Each employee on a boatswain chair, catenary scaffold, float scaffold, needlebeam scaffold or ladder jack scaffold shall be protected by a personal fall arrest system.

8. When horizontal lifelines are used, they shall be secured to two or more structural members of the scaffold.
9. Vertical lifelines, independent support lines and suspension ropes shall not be attached to or use the same point of anchorage, nor shall they be attached to the same point on the scaffold or personal fall arrest system.

10. When midrails are used, they shall be installed at a height approximately midway between the top edge of the guardrail system and the platform surface.

11. When intermediate vertical members are used, they shall not be more than 19 inches apart.

12. Cross bracing is acceptable in place of a midrail when the crossing point of the two braces is between 20 and 30 inches above the work platform and as a top rail when the crossing point of two braces is between 30 and 48 inches above the work platform. The end points at each upright shall be no more than 48 inches apart.

13. Toeboards shall be capable of withstanding, without failure, a force of at least 50 pounds applied in any downward or horizontal direction at any point along the toeboard.

Training Requirements

1. Procedures for dealing with electrical wires and hazards when erecting, dismantling, and maintaining scaffolds shall be covered.

2. The proper use and handling of materials while working on the scaffold shall be covered.

3. The employer shall have each employee who is involved in erecting, disassembling, moving, operating, repairing, maintaining or inspecting a scaffold trained by a competent person to recognize any hazards associated with the work in question.

4. Retraining is required in at least the following situations:

- When changes at the worksite present a hazard about which an employee has not been previously trained.

- When changes in the types of scaffolds, fall protection, falling object protection or other equipment presents a hazard.

- When inadequacies in an affected employee’s work indicate that the employee has not retained the requisite proficiency.
Storing and Handling of Material

1. All materials in bags, containers, bundles, or other material stored in tiers, shall be stacked, racked, blocked, interlocked, limited in height, and otherwise secured so the material will be stable and safe against collapse or sliding.

2. Material stored inside buildings under construction must not be placed within six feet (6’) of any hoistway or floor opening. Material stored on any floor above the ground shall not be within ten feet (10’) of the outside of the building unless the exterior walls extend above the top of the stored material, in which case, the minimum distance shall be six feet (6’).

3. Maximum safe load limits of floors within buildings and structures, in pounds per square foot, shall be conspicuously posted in all storage areas. Maximum safe loads shall not be exceeded.

4. Aisleways and passageways shall be kept clear to provide for the free and safe movement of material, handling equipment, or employees.

5. Materials in excess of supplies needed for immediate operations shall not be stored on scaffolds or runways.
Temporary Floors, Stairs, Railings, And Toe Boards

Temporary Flooring

1. In buildings, or structures of skeleton steel construction, the permanent floor filling, or the floor filling forms, (except for temporary shaftway openings), shall be installed as the erection progresses.

2. The temporary floor shall cover the entire area except the required places for access to ladders and stairways and for hoisting purposes.

3. Planks shall be not less than two inches (2") thick, full size, undressed. The planks shall be laid close together, supported on a solid bearing, and securely fastened to the framework of the structure.

4. All loose objects lying on the planks must be removed before the planks are dismantled to prevent such objects falling on persons below.

5. All defective materials or unsafe conditions discovered by the workers shall be immediately reported and corrected.

6. On buildings or structures not adaptable to temporary floors and where scaffolds are not used, safety nets shall be installed and maintained wherever the potential fall distance exceeds two (2) stories or twenty five feet (25'). The nets shall be hung with sufficient clearance to prevent contacts with the surface or structures below.

7. There shall be frequent and careful inspections of all temporary flooring and other false work to be sure it is always maintained in safe working conditions.

Stairs and Stairwells

1. All temporary stairs must be constructed to support safely a load of one hundred pounds per square foot (100#/sq. ft.) of tread and landing surface.

2. Temporary stairs shall be constructed so that the treads and risers are of uniform width and height in any one flight.

3. Temporary stairs must be at least forty inches (40") wide.

4. Temporary stairs shall have a landing not less than thirty inches (30") in the direction of travel at every twelve feet (12') of vertical rise.
5. All temporary stairs shall be adequately lit with a minimum illumination of five foot candles.

6. Stairway landings which are not enclosed shall be considered as platforms and must be guarded with standard railing and toe boards.

7. Whenever temporary railings, or enclosures, are removed for the purpose of handling materials, or the installation of other work, they shall be immediately replaced upon completion of such work.

8. On permanent stairways designed and installed with steel treads and landings to receive concrete or other filling material, temporary wooden treads shall be laid in full width of the tread and landing to the height of the nosing, firmly fitted in, and secured in place.

9. Every flight of stairs with four (4) or more risers must be equipped with a stair railing.

10. All open sides of stairways must have handrails.

Standard Railings

1. A standard railing or guardrail shall consist of a top rail, an intermediate rail, upright supports, and a toe board.

2. All railings shall be constructed in a substantial manner of wood, metal pipe, angle iron, or other metal shapes.

3. A standard railing shall have a vertical height of forty-two inches (42") from the floor, or platform, to the upper surface of the top rail. The intermediate railing shall be midway (21") between the floor or platform and the underside of the top rail.

4. Posts or uprights shall be spaced not more than eight feet (8') apart.

Wood Railings

1. The minimum the top rail can be made of is two inch by four inch (2"x 4") stock, the intermediate rail of one by six inch (1"x6") stock, and the upright of two by four inch (2"x4") stock. The top rail shall be smooth surfaced throughout its entire length and free from splinters.

2. Light wood rails or scantlings resting on barrels, boxes, or other makeshift support shall not be set up or used as guardrails.
3. A stair railing shall be of construction similar to a standard railing, but the vertical heights shall be not more than thirty-four inches (34") nor less than thirty (30") from the tread at the face of the risers to the top surface of the rail.

4. All railings shall be constructed of good, sound material, free from large or loose knots, and all stock smooth surfaced.

Pipe Railings

1. The post or upright support, top rail, and intermediate rail shall be of metal pipe at least one and one-half inches (1-1/2") inside diameter.

Structural Metal Railings

1. The post or upright support, top rail, and intermediate rail shall be of angle iron at least two by three-eights inches (2"x3/8") or other metal shapes of equivalent bending strength.

2. The spacing of posts or uprights shall not exceed eight feet (8').

Toe Boards

1. A standard toe board shall be a minimum of four inches (4") in vertical height from the floor, platform, ramp, or runway to the top edge of the board.

   NOTE: Some states may require a higher toe board. The most stringent requirement should be adhered to.

Floor and Wall Openings

1. Every floor opening, permanent or temporary, shall be guarded by either a standard railing and toe board on all exposed sides, except at entrances to stairways, or a cover of sufficient strength to safely support any load. While the cover is not in place, such openings shall be constantly attended by someone or shall be protected by a portable closing rail.

2. Every wall opening or hole having a height of thirty inches (30") and a width of eighteen inches (18") shall be guarded. If the lower edge of the hole or wall opening is either:

   A. On the inside, four inches (4") or less above floor level.

   B. On the outside, four feet (4') or more above ground or floor level.
3. The guard shall be either a standard railing and toe board, or standard railing with an enclosing screen of either solid construction, grills, or slat work with openings of not more than four inches (4”) in width.

Open-Sided Floors, Platforms, and Runways

1. Every open-sided floor shall be guarded on all open sides by a standard railing and toe board four feet (4’) or more above the adjacent floor or ground level except for entrances to a ramp, stairway, or fixed ladder.

2. Whenever materials have to be regularly passed over the edge of the floor, a section of the railing may be made removable.

3. Every runway four feet (4’) or more above floor or ground level shall be guarded by a standard railing on all open sides. Wherever tools, machine parts, or materials are likely to be used on the runway, a toe board shall also be provided on each exposed side.

4. Every inclined runway, where erected for the use of workers, shall be provided with cleats not more than sixteen inches (16”) apart to prevent slipping and aid workers in maneuvering the incline.

Hoists and Elevators

No persons shall be permitted to ride in material hoists of elevators except for purposes of inspection and maintenance.

Inside Material Hoist Shaftways

1. All entrances into the shaftway must be protected by substantial gates or bars equipped with a latching device.

2. Overhead sheave beams and their supports must be of good sound timber or steel, (i.e., strength and stiffness with a safety factor of five (5) to support the combined live and dead loads imposed).

3. Protective covering of planking or heavy wire mesh shall be provided above the overhead work of all hoists to prevent objects from falling down the shaftway.
Material Hoist Platforms

1. Material hoist platforms shall be substantially constructed and of sufficient strength and capacity.

2. Overhead protective covering of two inches (2") planking, three quarter inch (.") plywood, or other solid material of equivalent strength shall be provided on the crosshead of every metal hoist platform to prevent objects from falling on the workmen when loading and unloading the hoist.

3. Suitable blocking and cleats shall be provided on all platforms when wheelbarrows or other rolling equipment is transported to hold them securely in place.

Excavation, Trenching, and Shoring

OSHA regulations under 29 CFR 1926.650 must be adhered to as the minimum requirements during excavation activities.

General

1. Before erection, all blocks, shackles, sheaves, and the top connection on the mast of all guy derricks shall be thoroughly inspected.

2. Where "deadmen" are used as anchors, the cable shall be attached so that the allowable unit shearing stress of the material of which the "deadmen" are made will not be exceeded.

3. On stiff leg derricks where the boom is longer than the mast, goosenecks must be firmly secured and fitted to the stiff legs to prevent excessive friction on the gudgeon pin.

4. Above the top gooseneck, a collar shall be securely fastened by means of a steel bolt, or other approved method, on the gudgeon pin. If a steel bolt is used, it must be strong enough to withstand any shearing load from a gooseneck in the event that a stiff leg is struck by the boom. In addition, a vertical hold-down guy should be used from the gooseneck to the foot block.

5. A tag line or guide rope must be used on all loads that swing freely. Every tag line shall be controlled by an experienced individual.

6. Loads, lead lines, and booms must not strike against scaffolds, objects, or structures.
7. Employees are not allowed to ride on loads handled by derricks or cranes.

8. Loads must not be lifted or swung over the heads of persons. No one shall be permitted to walk under a load. (No exceptions).

**Derricks**

1. All derricks shall be constructed, erected, maintained, and used so that no part of the derrick will be stressed beyond its safe working strength. All applicable laws, rules or regulations, and local ordinances must be complied with at all times. All derricks shall meet the design specifications of ANSI B30.6-1969.

2. The weighing and anchoring of every stiff leg derrick shall be such as to insure stability of the derrick.

3. When the derrick is not in operation, the boom shall be lowered to a horizontal position or tied in place to prevent forces from blowing it out of control.

**Slings**

1. Hoisting equipment shall always include slings or other lifting devices, and must be kept in good condition.

2. Wire rope slings must be inspected and lubricated frequently and regularly (monthly as a minimum).

3. Blocks or heavy padding should be used at corners of the load to protect the sling from sharp bending.

**Manila and Synthetic Fiber Rope**

1. Only the best obtainable grade of manila rope shall be used. Each size and kind of rope (natural and synthetic) shall be used and maintained in strict accordance with OSHA 1926.251(d).

2. Rope shall be stored on racks or platforms fully protected from moisture and extremes in temperatures.

3. Knots shall not be used in place of splices.
**Wire Rope**

1. Every wire rope shall be used and maintained in strict accordance with OSHA 1926.251(c) for safe load capacities.

2. All wire ropes must be inspected before being used. Any rope showing excessive wear, corrosion, rust, or breakage of ten percent (10%) or more of the number of wires in any length of eight (8) diameters shall not be used.

3. Kinking and untwisting of the wire rope shall be carefully avoided. At no time shall a load be applied to a kinked rope.

4. Wire rope shall be lubricated with the lubricant recommended by the manufacturer.

5. Whenever necessary, wire ropes shall be guarded to prevent persons or materials coming in contact with them.

6. Friction of wire ropes with other objects causing chaffing or breaking of wires shall be prevented.

7. Any kinked or rusted wire rope shall be taken out of service immediately.

**Blasting**

Any projects required to do blasting must follow the guidelines in 29 CFR 1926.900. Also, most states and local governments have codes governing the handling, storage, and use of explosives. Use a "licensed" powder person qualified by reason of training and experience in the field of transporting, storing, handling, and use of explosives, and with a working knowledge of federal, state, and local laws and regulations.

**Powder-Actuated Tools**

An explosive-actuated tool, sometimes referred to as powder-actuated driver, fastener or ramset tool, is a tool that depends on an explosive charge (usually a cartridge loaded with an explosive) to provide the driving force. The tool is usually used for driving studs, pins, or other fastening devices into materials, surfaces, or for operation of a similar nature.

In some states, there are specific safety regulations governing the use of powder-actuated tools. Check state regulations, use "accredited operators" and reference OSHA 29 CFR 1926.302 for federal requirements.
All qualified employees must be trained by the manufacturer for all applicable safety regulations. All personnel licensed and authorized to operate these tools are responsible for complying with all safety regulations before using them.

The tools shall not be fired in a horizontal position. Positive steps shall be taken to enforce these regulations, including signs, barricades, and watchmen at every access point to the area. Tools will not be loaded until immediately before the shot. Guns shall not be left loaded while not in use and shall not be returned to the tool room loaded.

**Temporary Wiring, Lighting, and Heating**

1. Adequate light shall be provided throughout the building and in all work areas throughout the project, particularly in passageways and stairways, and wherever necessary to avoid a hazard due to a lack of light.

2. Electric lamps that burn continuously through the working period shall be inspected daily. All broken or burned out lamps must be replaced immediately.

3. All temporary electric wiring shall be installed so that the wiring cannot be damaged when materials are moved as construction progresses.

4. Salamanders, where used as heating apparatus, shall not be set directly on wooden floors or other combustible supports. Salamanders must rest on ashes or beds of earth at least three inches (3") in thickness or on heavy metal plates well insulated from the floors.

5. Salamander legs shall rest on insulation, and the insulation shall extend beyond the salamanders at least two feet (2') on all sides.

6. Salamanders shall not be used on scaffolds or to heat personnel.

7. Salamanders shall not be set up or used in unventilated areas.

8. Each temporary disconnect box shall be legibly marked to indicate its purpose unless located and arranged so the purpose is evident.

9. All electrical work, installation, and wire capacities shall conform to the National Electrical Code, ANSI Safety Code, and other applicable federal, state, and local codes.

**OSHA REFERENCES**

1926.400 - Entire Subpart "K"
1926.56 - Illumination
1926.154 - Temporary Heating Devices
Vehicle, Crane, & Cherry Picker Operation

1. Outriggers shall be set on all cranes, cherry pickers, and lift trucks prior to making a lift of any size or description. It will be the direct responsibility of the superintendent and the operator to determine if a lift can be made safely.

2. All equipment shall be operated with accepted operational practices.

3. All trucks shall be operated within the applicable state laws. All speed limits shall be strictly adhered to and speeds shall be reduced during conditions of reduced visibility and inclement weather conditions.

4. No riders shall be allowed in any company vehicles.

5. All angle iron and pipe carried in racks on top of pickups will be tied through the bundle to prevent slippage of the center iron.

6. Cables on the lift trucks shall not be used to wrap or secure a load. Damage to the lift cable could occur and cause it to break.

7. Safety meetings for all operators shall be held weekly (at a minimum).

8. Failure to follow these guidelines may result in immediate dismissal.
The following procedure will govern the use, inspection, and control of fire extinguishers, as well as general fire protection requirements.

**Types of Fire Extinguishers To Be Used**

In general, fire protection will consist of dry chemical extinguishers (Class ABC and Class BC). In addition, water hoses and existing fire lines will be used where applicable. (Normally based on client requirements).

**Fire Protection Requirements**

Supervision should consult the Safety Department for specific needs and types of extinguishers as well as other fire protection requirements prior to starting any hot work or moving into unknown areas.

**Inspection**

All extinguishers, whether mounted on red backboards, mounted on equipment, or in field use, must be inspected on a monthly basis.

1. The Safety Department or designees will be responsible for inspecting all fire extinguishers mounted on red backboards and in field use in all construction shops, shacks, trailer areas, and construction locations. A monthly inspection report showing the locations of fire extinguishers inspected must be turned into the Safety Office.

2. All extinguishers mounted to equipment such as cranes, forklifts, welding machines, compressors, tractors, etc. shall be inspected by the Safety Department or designee. A monthly inspection report showing the equipment on which they are mounted must be turned in to the Safety Office.

3. Those extinguishers which receive little or no use over a period of time must be turned in annually for testing and re-servicing. All remaining extinguishers receive the same yearly inspection during their periodic servicing.

4. Before use, all extinguishers should be visually inspected by user for defects, broken seals, pulled pins, excessive pitting, etc. It must also be determined whether the extinguishers have been discharged. If any of these conditions exist, turn unit(s) in for servicing immediately and replace with the good unit.

5. The Safety Department must be notified of any and all fires caused by or involving construction employees.
6. No fire extinguisher may be allowed to rest on bare ground. (If used as portables, have them on suitable material.) Ideally all should be mounted on equipment or red backboards at approximately 48" height.

7. Refer to page 14-6 for an example inspection report form.

DO NOT RETURN TO SERVICE ANY DISCHARGED FIRE EXTINGUISHERS AFTER USE. AGAIN, REMEMBER TO REMOVE ALL DISCHARGED FIRE EXTINGUISHERS FROM SERVICE AND OBTAIN REPLACEMENT IN ACCORDANCE WITH THIS PROCEDURE. DISCHARGING OF ANY FIRE EXTINGUISHER SHALL BE REPORTED TO THE SAFETY DEPARTMENT IMMEDIATELY.

Use

1. It will be the responsibility of each supervisor to instruct employees in the location and use of all fire extinguishers that are available in their work area, shop, building, etc. This includes instruction on the type of fire extinguisher to be used on the different classes and types of fires (e.g., gasoline, oil, electric, wood, etc.)

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<thead>
<tr>
<th>CLASS OR TYPE OF FIRE</th>
<th>FIRE EXTINGUISHER</th>
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<tr>
<td>A. Wood, paper, rags etc.</td>
<td>Water, loaded stream, tri-class dry chemical</td>
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<tr>
<td>B. Flammable liquids, gasoline, oil, grease</td>
<td>Dry chemical, CO</td>
</tr>
<tr>
<td>C. Electrical</td>
<td>Dry chemical, CO</td>
</tr>
</tbody>
</table>

2. It is the Safety Department's responsibility to plan and have adequate dry powder extinguishers installed in all work areas, spaces, floors, and buildings where burning, welding, cutting, or open-flame equipment must be used. These extinguishers must be arranged so that there is an extinguisher within quick reach of any work which could cause a fire.

3. Each welder, burner, or operator of open-flame equipment must have an individual fire extinguisher in the immediate vicinity; there must be a ten (10) pound or larger powder extinguisher within immediate reach (50 feet) of any work of this nature. Fire extinguishers for welding on scaffolds shall be readily available (within reach) to the workers. It is the responsibility of supervision to see that this requirement is followed at all times. In work areas, fire extinguishers will be placed on 100' checkerboard pattern (the previously mentioned "red" boards).
General

1. Mounting - Permanently placed extinguishers must be mounted on readily visible boards painted red, with the bottom of the extinguisher no more than five feet above the floor or ground with clear access and locations marked.

2. Fire equipment or other emergency equipment, including fire doors, fire sprinklers, and hose boxes, will not be obstructed. A red outline mark will be painted on the floor in front of these areas to designate them.

The Following is to Insure All Employees Know How to Report a Fire:

Signs listing the Safety Department telephone number will be mounted above each telephone in all construction shops, field offices and each construction telephone in a work area. Stickers suitable for mounting on a phone listing the Fire Department number will be provided for each telephone in the construction office facilities.

Any employee discovering a fire should report to his or her nearest supervisor if possible. The Fire Department telephone number is ________________.

1. State your name.

2. Give location of fire.

3. The caller will go to the main entrance of the building or nearest unit entrance and direct the Fire Brigade to the fire.

End of Workday Inspection of Construction Facilities

In order to decrease the potential of fire at the project, inspections will be made daily following the close of the day shift. The inspection shall be made by members of field supervision.

These supervisors will tour their assigned areas, inspecting all construction buildings and work sites to ascertain that no open fires, smoldering sparks, potential fire hazards exist. If fire hazards are discovered, the supervisor will take whatever action is necessary to control them.

The inspection supervisors should recognize that their vigilance in detecting incipient fires will prevent the type of disaster which so frequently occurs in industry when fires are not discovered until they are beyond control.

Offices, warehouses, craft lofts, tool rooms, and like stations are particularly vulnerable to fire. All "after hours" inspections should include these facilities first because of the strategic nature of the contents of these facilities. The same supervisors making the "after hours" fire inspection will simultaneously make security inspections of the job.
MONTHLY REPORT
FIRE EXTINGUISHERS INSPECTION AND CONTROL PROGRAM

MONTH AND YEAR: ________________

CRAFT: ________________________  BY: ________________________

(NAME)

PLEASE INDICATE LOCATION BY BUILDING MOUNTED, EQUIPMENT TYPE, AND NUMBER OF EXTINGUISHER

<table>
<thead>
<tr>
<th>No.</th>
<th>Size (10# or 20#)</th>
<th>Location</th>
<th>Inspection Comments</th>
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Figure 14-1. Fire Extinguishers Inspection Monthly Report
FIRE EXTINGUISHER INSPECTION AND MAINTENANCE PLAN

1. Fire extinguishers will be assigned accordingly:
   - Fixed locations (buildings & shops)
   - Equipment (cherry pickers, welding machines, etc)
   - Tool Room (used as portables)

2. All fire extinguishers will be inspected on a monthly basis. As a minimum, monthly inspections will include the following:
   a. Check seal around the pin. If the seal is broken, a complete maintenance check is required.
   b. Ensure that pin is in place and not damaged.
   c. Heft extinguisher to determine if it is filled. If in doubt, take it to the Tool Room.
   d. Examine the extinguisher shell, and all external parts for evidence of physical damage, corrosion, or other impairments.
   e. Examine the hose for cuts, severe weather cracking, abrasions, or deformed exterior.
   f. Check the hose couplings for tightness, corrosion, or cracks.
   g. Check the nozzle tip for obstructions.
   h. Operate the nozzle handle to check for free movements.

   Upon completion, the extinguisher shall have an inspection tag affixed to it.

3. Fire extinguishers will receive a complete maintenance check when deemed necessary by a monthly inspection. As a minimum, maintenance will include the following:
   a. Check the date of last hydrostatic test and make sure it does not exceed 12 years (cartridge), 6 years for CO₂.
   b. Examine shell and external components for evidence of corrosion, dents, and mechanical damage.
   c. Carefully examine the hose assembly.
   d. Check the hose couplings.
e. Operate the nozzle handle to check for free movement.

f. Check nozzle tip and discharge outlet for obstructions.

g. Check the hose for internal blockage by blowing through the hose.

h. Install seal and color code with electrical tape to indicate current month.

4. A written record of all fire extinguisher maintenance and inspections shall be kept on file at the Safety Office. (Figure 14-1).

5. Discharged or defective fire extinguishers shall be tagged "DEFECTIVE - DO NOT USE" and immediately removed from service.

6. Inspections shall be performed by a designated competent person.
This procedure sets forth the guidelines to provide for maximum protection for all personnel against falls.

Responsibility

1. Project Management shall be responsible for the implementation and enforcement of the "Fall Prevention and Protection Program."

2. The project Safety Department shall have full authority to ensure enforcement of the program. Its primary responsibility will be to support crafts and to monitor the program. The Safety Department will act as a technical resource to project management.

3. The front line supervisors shall be responsible for supporting and enforcing this program to ensure 100% compliance by all personnel.

Pre-Task Instructions

Pre-task instructions are to be given to each employee prior to the start of the work activity. Special emphasis shall be given to all work in unprotected elevated areas. Supervisors must analyze all elevated tasks for fall protection needs and shall ensure that adequate fall protection systems are provided. After analyzing the tasks, supervisors shall instruct personnel in the specifics of the fall protection measures to be used.

Engineered Fall Prevention/Best Practices

General

This section contains a series of guidelines and best practices for engineered fall protection. All projects should be reviewed for potential fall exposures. By using the following outline and where given the opportunity to provide input to the engineering design when the project is first planned, fall exposures can be decreased through input to the design engineer, and fall protection can be maximized.

On projects where fall prevention input was not utilized during the design/procurement stages, this outline is to be reviewed to determine which elements may be available. In these situations, these are not to represent a set of rules, but rather a set of guidelines.
Civil Department

1. Trenching - At excavations of 6 feet (6’) or greater, install perimeter protection capable of meeting approved strength ratings for temporary restraint systems (i.e. guard rail systems, fences, or barricades).

   For those less than 6 feet (6’), a wooden physical barricade is adequate.

2. Elevated Concrete Structures - The design shall include access and egress points as well as the ability to secure lifelines. Embeds can be added for attachment points.

3. Pre-Cast - Employees who are working 6 feet or more above lower levels must be protected by a guardrail system, safety nets, or personal fall arrest systems.

4. Rebar - Have rebar shipped cut and bent. Pre-assemble at the job site outside of the excavation.

Structural Iron

1. Bent Sections - Maximize the use of these.

2. Pre-assembly - Maximize the practice.

3. Stick Building - Minimize this practice.

4. Christmas Tree - Eliminate this practice.

5. Welded Joints - Minimize this practice.

6. Clip Cradles - Install in areas where large members are to be landed in the air.

7. Pin Extractor - Maximize the use of this technology.

8. Column Splices - Engineer at permanent landings.

9. Provide holes and/or retractable reels permitting attachment to steel while on the ground.

10. Schedule stairways, ladders, grating, and landing steel to arrive in conjunction with structural steel to allow stairway erection to proceed at the same time as the main structure.
11. Dress out vertical columns on the ground with insulation, ladders, and platforms.

12. Install pipe (including testing, lighting and instrumentation), then erect in a vertical position.

**Electrical**

1. Cable Trays - These should be designed where they are most easily accessible.

2. Minimize areas where new installation is in close proximity to existing hot services.

3. Maximize running power and cable underground, where permitted according to area hazard classifications.


**Procedures**

1. All personnel in elevated work situations 6 feet (6') or greater on this project will be required to wear an approved personal fall arrest system.

2. Any situation in which an employee is above ground level 6 feet (6') or greater without permanent handrail or midrail protection is considered elevated work and shall follow OSHA Subpart M 1926.500 - Fall Protection.

3. Maximum use of primary fall protection systems will be implemented. These include scaffolds, aerial lifts, personnel hoists, etc. These systems shall be equipped with complete working/walking surfaces free of unprotected floor openings, complete with guardrail systems, toe boards, and safe means of access. In cases where floor openings must be left open for work access, the appropriate guardrail systems and lifelines must be erected (see 1926.502 (b)).

4. Personnel traveling or working in elevated areas where a fall exposure exists shall make use of secondary fall protection by securing their safety lanyard at all times to a structure, lifeline, or approved fall arresting device capable of supporting 5,000 pounds. To ensure this, all personnel shall use either the "Y" design lanyard with shock absorbing device or two straight lanyards with shock absorbing device. One end of the "Y" or one straight lanyard shall be secured at all times providing 100% fall protection.

5. Personnel working from or traveling in aerial lifts or personnel lifting devices shall properly secure their lanyard to that device.
6. Personnel traveling in construction elevators are not required to secure safety lanyards.

7. All fall protection devices are to be inspected on a daily basis before use for damage and/or deterioration. Defective equipment shall be removed from service and either destroyed or repaired. All devices are to undergo a documented inspection and will be factory inspected per manufacturer's recommendations. No alterations are allowed.

8. Fall protection devices subjected to shock loading imposed during fall arrest shall be removed from service and the Safety Department notified immediately.

9. Fall protection devices and systems shall not be used for any other purpose other than employee safeguarding.

10. All personnel who will be subjected to elevated work situations are required to attend a class on fall prevention which must meet OSHA 1926.503 (2) and is presented by the project Safety Department or the designated competent person on site.

11. All fall protection equipment required for the project shall conform to the client's and/or contractor's authorized safety equipment list. Any other brands, models, etc., shall be approved by the client's and/or contractor's Safety Department in writing prior to use.

12. Subcontractors shall comply with the requirements set forth in this program as a minimum for fall protection.
Section 15: Fall Prevention and Protection

Fall Protection Devices

1. Primary fall protection systems

These systems provide walking and working surfaces in elevated areas which are free from floor openings and are equipped with standard guardrail systems on all open sides and with closure apparatus for ladder openings or other points of access. These systems include, but are not limited to, scaffolds, pencil boards, aerial lifts, and other approved personnel hoisting devices.

   a. Standard guardrails will consist of top rail material approximately 42 inches (42") above the walking/working surface. In addition, a midrail of the same material will be installed at a height of approximately 21 inches (21") above the surface. A 32 inch minimum tall toe board shall be installed at the walking/working surface. The upright support post spacing shall not exceed 8 feet (8') and the entire system must be capable of supporting 200 pounds force in any direction with minimum deflection.

   b. Hole covers are to be used to close openings and holes in floors, platforms, and walkways. These covers must be capable of supporting without failure at least twice the weight of employees, equipment, and materials. In lieu of floor covers, guardrail systems and/or other means of secondary fall protection (i.e. lifelines) shall be erected.

Where covers are utilized, the cover must completely cover the opening/hole, be secured against accidental displacement, and must be marked as follows:

   "HOLE COVER"
   "DO NOT REMOVE"

2. Personal Fall Arrest Systems

   a. These systems shall be worn and used as a backup to primary fall protection systems and in the absence of primary fall protection systems.

   b. Only harnesses, belts, and lanyards furnished by the project may be used. Personal fall protection systems will not be used.

   c. Subcontractors shall provide appropriate fall protection equipment to their employees.
d. Lanyards must be the shock absorbing type.

e. The shock absorber end of the lanyard shall be attached to the D-Ring located on the middle back near shoulder level of the harness.

f. D-Rings on the waist of the harness may only be used for positioning and with rail type ladder climbing devices. Only approved work positioning lanyards will be used for positioning; a shock absorbing lanyard must also be secured in this event for protection against a fall.

g. The "Y" type shock absorbing lanyard shall only be used with the full body harness. These are prohibited for work positioning.

h. All lanyards shall have the double locking-type snaps to prevent roll out, and shall have a minimum tensile strength of 5,000 pounds.

3. Lifelines

a. Lifelines are points of attachment for fall protection and must be capable of supporting at least 5,000 pounds impact loading. Lifelines may be installed either vertically or horizontally and are intended to provide mobility with fall protection to personnel working in elevated areas.

b. Horizontal lifelines must be made to support and withstand at least 5,000 pound impact. Alternate materials for specific cases must be approved by the project Safety Department.

c. Cable clamps shall be of the appropriate size for the diameter of cable being used and there shall be a minimum of three clamps at each termination end for cable up to 7/16" in diameter. For 2" to 3" diameter cable, four cable clamps shall be utilized. For cable requirements larger than 3", the Safety Department shall be consulted. Refer to 1926.251 Table H-20 for the number of wire rope clips required by OSHA.

d. Cable clamps are to be installed with saddle on the "live" side of the cable. Remember - "Don't saddle a dead horse."

e. Horizontal lifelines shall be positioned to provide points of attachment at waist level or higher to the personnel utilizing them. The attachment point of the body harness shall be located in the center of the wearer's back near shoulder level.
f. Lifelines shall not be used for any purpose other than fall protection.

g. Horizontal lifelines shall be installed and maintained under the supervision of a qualified person.

h. Lifelines shall be flagged at not more than 6 foot (6’) intervals with high visibility material.

i. Vertical lifelines are used for personal fall protection where vertical mobility is required. They may be comprised of static lifelines made of synthetic fiber rope or cable which is equipped with approved rope grabs, or they may consist of self-retracting reel type lanyard/lifelines which are attached to a safety harness (see OSHA 1926.502 (d)) (11, 12, 13).

j. Static rope grabs are required for personnel working from spyder/sky climbers, two point suspension scaffolds, or boatswain chairs. These types of lifelines can also be used to provide fall protection for other operations such as scaffold erection and structural steel erection where tie off points are limited and vertical mobility is required.

k. Cable clamps for lifelines shall be painted to identify them as being for lifeline use only.

Other Devices

Safety Nets

Safety nets shall be installed as close as practicable under the walking/working surface on which employees are working, but in no case more than 30 feet (30’) below such level. (Refer to OSHA 1926.502 (c)).

Lifeline Placement/Installation

1. Horizontal Lifelines

   a. Horizontal lifelines placed in skeletal steel structures shall be at least 2" cable and secured on each end by at least three cable clamps of proper size. Intermediate supports shall be adequate to minimize sag and vertical deflection under loading.

   b. Priority shall be given to lifeline placement as structures are erected.

   c. Lifelines shall be arranged to provide adequate mobility in all areas of the structure while maintaining 100% fall protection for personnel.
d. Personnel installing lifelines shall be protected from falls at all times by use of retractable lifelines or tie off to structural steel, etc.

e. Softeners shall be used where lifelines contact sharp edges such as beam flanges. Softeners shall be secured in place to prevent accidental displacement.

2. Vertical Lifelines/Retractable Lifelines

a. Static rope lifelines shall be made of synthetic fiber rope and shall be inspected prior to each use under the supervision of a qualified person.

b. Static rope lifelines must be used with approved rope grabs for lanyard attachment.

c. Static rope lifelines must be anchored at the top by means capable of supporting 5,000 pounds impact loading.

d. Static rope lifelines/rope grabs will be placed for each person working from or riding in spyder/sky climbers, two point suspension scaffolds, or boatswain chairs. Each person must have an individual lifeline, and the attachment point of the body harness shall be located in the center of the wearer's back near shoulder level.

3. Retractable Reel Lifelines

a. Retractable lifeline devices shall be capable of sustaining a minimum tensile load of 3,000 pounds applied to the device in the fully extended position.

b. Retractable lifeline devices shall be secured by means of carabiners, shackles, and wire rope or synthetic slings. Tie wire, synthetic, or natural rope shall not be used to secure these devices.

c. Each retractable lifeline device shall be equipped with a rope tag line for extending the device to elevations below the point of attachment. Do not leave the lifeline extended and exposed to the weather elements.

d. Retractable lifelines shall also be used to provide fall protection to structural iron workers during erection prior to installation of other fall protection systems.
Other Applications

1. Ladders

Requirements under OSHA 1926 Subpart X must be followed (see Section 16).

2. Temporary Work Platforms/Walkways

Scaffolds and Pencil Boards

   a. All temporary platforms/walkways are to be equipped with solid decks free of openings and shall be equipped with a standard guardrail system.

   b. Personnel working from temporary platforms or traveling on temporary catwalks shall have their safety lanyard secured at all times to a lifeline or structure capable of supporting 5,000 pounds impact loading.

   c. Every temporary work platform or walkway must be provided with a safe means of access/egress which allows personnel to remain tied off all times. Retractable lifelines shall be used to achieve fall protection while ascending or descending access ladders to temporary work platforms or walkways.

3. Aerial Lifts

Personnel riding in or working from these lifts must secure their safety lanyard to the lift basket at all times.

4. Spyder/Sky Climbers and Boatswain Chairs

Each person riding in or working from these hoisting devices shall be provided with an independent lifeline and rope grab to which their lanyard shall be secured at all times while aloft.

5. Crane Hoisted Personnel Baskets

Personnel riding in or working from personnel baskets must have their lanyard secured to the basket at all times when aloft. (Refer to 1926.550 (g)).

6. Elevators

Personnel riding inside of enclosed elevator cars are not required to secure their safety lanyard.
Section 15: Fall Prevention and Protection

7. **Skeletal Steel/Open Structures**

This section deals with fall protection when personnel are required to gain access to travel and work in skeletal steel/open structures such as pipe racks. This includes traveling on or working on any elevated surface which is not designed as a personnel work surface or walkway (e.g. pipe, cable tray, etc.).

a. Personnel working or traveling in elevated skeletal steel/open structures shall secure their lanyards to a lifeline or structure capable of supporting 5,000 pounds impact loading at all times (100% fall protection). This includes both horizontal and vertical travel.

b. Adequate lifeline systems will be erected when feasible in skeletal steel/open structures to allow 100% fall protection for personnel working or traveling in these structures.

c. In lieu of lifelines, personnel may secure safety lanyards to substantial structural steel members, pipe, and pipe supports. Personnel shall avoid securing lanyards to cable tray, conduit, and screw pipe.

8. **Permanent Structures/Stairs/Caged Ladders**

a. All employees and subcontractor personnel are required to wear an approved full body safety harness with shock absorbing lanyards. If personnel do not venture outside the enclosed area of a completed permanent structure, then the full body harness is not required.

b. When personnel are working or traveling in incomplete permanent structures where fall exposure exists such as floor openings or open sided floors, then they must be properly tied off when within 6 feet (6') of any fall exposure, or the proper guardrail of restraint system must be in place.

c. Priority shall be given to installation and securing of permanent floors and walking surfaces and all guardrails or other permanent fall protection devices.

d. Permanent stairs, when completed, shall be used to access or egress elevated work areas.
9. **Structural Steel Erection**
   
a. Personnel erecting structural steel shall achieve 100% fall protection through use of safety harnesses/lanyards, retractable lifelines, aerial lifts, and guardrail systems.

b. Access to structural steel shall be obtained by use of ladders, aerial lifts, or other approved personnel hoisting devices. Climbing of structural steel members such as columns and diagonal braces is not allowed.

c. Prior to and during horizontal lifeline placement structural personnel shall crawl (coon) steel members with lanyards tied around these members. Retractable lifelines secured at elevations above the point of operation may be used in some applications to provide fall protection prior to the availability of horizontal lifelines.

d. When lanyard lengths longer than 6 feet (6') are required due to large steel members, the project Safety Department shall be contacted to approve methods for obtaining the additional length.

e. On buildings or structures not adaptable to temporary floors, and where scaffolds are not used, safety nets shall be installed and maintained whenever the potential fall distance exceeds two stories, or 25 feet. The nets shall be hung with sufficient clearance to prevent contacts with the surface of structures below.

10. **Reinforcement Steel/Concrete Form Work**
   
a. Personnel working on rebar work piers and on concrete form walls must have fall protection 100% of the time they are in elevated situations. This can be achieved through the use of retractable lifelines, static lifelines with rope grabs, or use of double lanyards.

b. Personnel working rebar or formed walls and elevated piers require a work positioning lanyard along with their double lanyard or "Y" design lanyard. The work positioning lanyard is not to be used for fall protection. A fall protection lanyard must be secured before the work positioning lanyard is used.

c. On vertical rebar walls, the safety lanyard shall be secured at a point above the worker's head either to a lifeline or a horizontal section of rebar.
d. On form walls, personnel shall use patented construction form tie-off attachments or lifelines to secure their safety lanyards. These persons shall receive specific safety instructions on the equipment to be used and the fall protection practices to be used.

11. Training Requirements

a. A member of the safety department or a designated competent person shall provide adequate training of all project personnel that could be exposed to a fall.

b. The training shall consist of at a minimum: the nature of the fall hazards, the correct methods of erection, maintaining and disassembling of fall protection systems, inspection of equipment, storage of equipment, and the correct procedures of implementing fall protection systems.

c. Each employee who has successfully passed the fall protection training class, shall have a training certificate placed in their training file stating their name, date trained, and the signature of the competent person who conducted the training.

d. Re-training shall be appropriate if any employee fails to demonstrate the knowledge or skills needed to perform their jobs safely governing fall protection methods; this will be at the discretion of the safety department.

NOTE:

The new OSHA standard on fall protection has included the designation of a fall protection plan. This option is available to companies engaged in leading edge work or pre-cast concrete erection work who can demonstrate that it is infeasible or it creates a greater hazard to use conventional fall protection equipment. The plan must be developed by a qualified person and have as a minimum a step-by-step process demonstrating it is a greater hazard. (Refer to OSHA 1926.502 (k) - Non-Mandatory Guidelines for complying with the standard. An example of a fall protection plan is included in the standard - Appendix E).
### Definitions

**Body Belt (safety belt)**
A strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device. (These will not be allowed for fall protection starting January 1, 1998.)

**Body Harness**
Straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.

**Connector**
A device used to couple parts of the personal fall arrest system and position device systems together.

**Controlled Access Zone (CAZ)**
An area in which certain work (e.g. overhand bricklaying) may take place without the use of guardrail systems, personal fall arrest systems or safety nets and access is controlled.

**Deceleration Device**
Any mechanism, such as a rope grab, rip-stitch lanyard, specially woven lanyard, tearing lanyards, automatic self-retracting lifelines/lanyards, etc. which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

**Free Fall Distance**
The vertical displacement of the fall arrest attachment point on the employee’s body belt or harness between onset of the fall and just before the system begins to apply force to arrest the fall.

**Guardrail System**
A barrier erected to prevent employees from falling to lower levels.

**Leading Edge**
The edge of a floor, roof, or formwork for a floor or other walking/working surface which changes location as additional floor, roof, decking, or formwork sections are placed, formed or constructed. (“unprotected side and edge”)
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifeline</td>
<td>A component consisting of a flexible line for connection to an anchorage at one end to hang vertically, or for connections to anchorages at both ends to stretch horizontally, which serves as a means for connecting other components of a personal fall arrest system to the anchorage capable of supporting 5,000 lbs.</td>
</tr>
<tr>
<td>Low-slope Roof</td>
<td>A roof having a slope less than or equal to 4 to 12 (vertical to horizontal).</td>
</tr>
<tr>
<td>Personal Fall Arrest System</td>
<td>A system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt or harness, lifeline or a combination of these. As of January 1, 1998, the use of a body belt for fall arrest is prohibited.</td>
</tr>
<tr>
<td>Safety-Monitoring System</td>
<td>A safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.</td>
</tr>
<tr>
<td>Warning Lines</td>
<td>A barrier erected on a roof or a leading edge to warn employees that they are approaching an unprotected roof side or edge, and which designates an area in which work may take place without the use of a guardrail, body belt, or safety net systems to protect employees in the area.</td>
</tr>
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Stairways and ladders are a major source of injuries and fatalities among construction workers. OSHA estimates that there are 24,882 injuries and as many as 36 fatalities per year due to falls from stairways and ladders used in construction. Nearly half of these injuries are serious enough to require time off the job - 11,570 lost workday injuries and 13,312 non-lost workday injuries occur annually due to falls from stairways and ladders used in construction. This data demonstrates that work on and around ladders and stairways is hazardous. More importantly, it shows that compliance with OSHA's requirements for the safe use of ladders and stairways could have prevented many of these injuries.

The following training is designed to familiarize you with the requirements of OSHA's safety regulations for the safe use of ladders and stairs as outlined in Subpart X, Title 29 Code of Federal Regulations, Part 1926.1050 through 1926.1060.

**Purpose**

This procedure sets forth the guidelines for the inspection and safe use of straight ladders, extension ladders, stepladders, and stairways. The purchasing of ladders shall be in accordance with the specifications and restrictions as set here: Type 1A 300 lb. Extra Heavy Duty.

**General**

Listed below are the main points of interest and the requirements put forth by OSHA relating to the use and manufacturer of ladders and stairways for the construction industry.

1. A stairway or ladder must be provided at all worker points of access where there is a break in elevation of 19 inches (48 cm) or more and no ramp, runway, embankment, or personnel hoist provided.

2. When there is only one point of access between levels, it must be kept clear to permit free passage by workers. If free passage becomes restricted, a second point of access must be provided and used.

3. When there are more than two points of access between levels, at least one point of access must be kept clear.

4. All stairway and ladder fall protection systems required by these rules must be installed and all duties required by the stairway and ladder rules must be performed before employees begin work that requires them to use stairways or ladders and their respective fall protection systems.
Stairways

The following general requirements apply to all stairways used during the process of construction, as indicated:

1. Stairways must be installed at least 30 degrees, but no more than 50 degrees, from the horizontal.

2. Variations in riser height or stair tread depth must not exceed 1/4 inch in any stairway system, including any foundation structure used as one or more treads of the stairs.

3. Where doors or gates open directly onto a stairway, a platform must be provided that is at least 20 inches (51 cm) in width beyond the swing of the door.

4. All stairway parts must be free of dangerous projects such as protruding nails.

5. Slippery conditions on stairways must be corrected.

6. Spiral stairways that will not be a permanent part of the structure may not be used by workers.

Stairrails and Handrails

The following general requirements apply to all stairrails and handrails:

1. Stairways having four or more risers, or rising more than 30 inches (76 cm) in height, which ever is less, must have at least one handrail. A stairrail also must be installed along each unprotected side or edge. When the top edge of a stairrail also serves as a handrail, the height of the top edge must not be more than 37 inches (94 cm) nor less than 36 inches (91.5 cm) from the upper surface of the stairrail to the surface of the tread.

2. Winding or spiral stairways must be equipped with a handrail to prevent using areas where the tread width is less than 6 inches (15 cm).

3. Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members must be provided between the top rail and stairway steps of the stairrail system.

4. Midrails, when used, must be located midway between the top of the stairrail system and the stairway steps.
Section 16: Ladders and Stairways - Use and Inspection

5. Screens or mesh, when used, must extend from the top rail to the stairway step, and along the opening between top rail supports.

6. Intermediate vertical members, such as balusters, when used, must not be more than 19 inches (48 cm) apart.

7. Other intermediate structural members, when used, must be installed so that there are no openings of more than 19 inches (48 cm) wide.

8. Handrails and the top rails of the stairrail systems must be capable of withstanding, without failure, at least 200 pounds (890 n) of weight applied within 2 inches (5 cm) of the top edge in any downward or outward direction, at any point along the top edge.

9. The height of the top edge of a stairrail system used as a handrail must not be more than 37 inches (94 cm) nor less than 36 (91.5 cm) from the upper surface of the stairrail system to the surface of tread. If installed before March 15, 1991, height shall not be less than 30 inches (76 cm).

10. Stairrail systems and handrails must be surfaced to prevent injuries such as punctures or lacerations and to keep clothing from snagging.

11. Handrails must provide an adequate handhold for employees to grasp to prevent falls.

12. Temporary handrails must have a minimum clearance of 3 inches (8 cm) between the handrail and walls, stairrail systems, and other objects.

13. Unprotected sides and edges of stairway landings must be provided with standard 42 inch (1.1 m) guardrail systems.

Ladders

The maximum intended load-carrying capacity of ladders authorized for use is 300 pounds. The following general requirements apply to all ladders:

1. There are three (3) types of ladders used: straight ladders, extension ladders, and stepladders. Ladders made of fiberglass or aluminum are acceptable. No ladder is to be painted except for identification purposes.

2. Ladders should be visually inspected for up to date inspection and any obvious defects prior to use. Defective ladders are to identified with "Defective - Do Not Use" tags and removed from service immediately.
3. General safety rules to be observed when using any ladder include the following:
   
   a. When ascending or descending, do not carry anything that will prevent grasping the ladder with at least one hand. Use a hand line as needed to raise and lower material or tools so that both hands can be used to hold on to the ladder.
   
   b. Keep both feet on the ladder rungs. Avoid reaching out too far or placing one foot on adjacent structures in a "spread eagle" stance. Change the position of the ladder as often as necessary.
   
   c. Always face the ladder when climbing or working from it.
   
   d. Only one person is permitted on a ladder at any time (unless using a "A"-frame ladder).
   
   e. Whenever a ladder is set up in or over a walkway, doorway, or similar thoroughfare, barricades and "overhead work" signs shall be posted.
   
   f. All ladders should be tied-off or otherwise secured.
   
   g. Ladders may not be used for any purpose other than climbing.

4. A double-cleated ladder or two or more ladders must be provided when ladders are the only way to enter or exit a work area having 25 or more employees, or when a ladder serves simultaneous two-way traffic.

5. Ladder rungs, cleats, and steps must be parallel, level, and uniformly spaced when the ladder is in position for use.

6. Rungs, cleats, and steps of portable and fixed ladders (except as provided below) must not be spaced less than 10 inches (25 cm) apart, nor more than 14 inches (36 cm) apart, along the ladder's side rails.

7. Rungs, cleats, and steps of step stools must not be less than 8 inches (20 cm.), nor more than 12 inches (31 cm) apart between center lines of the rungs, cleats, and steps.

8. Ladders must not be tied or fastened together to create longer sections unless they are specifically designed for such use.

9. Two or more separate ladders used to reach an elevated work area must be offset with a platform or landing between the ladders, except when portable ladders are used to gain access to fixed ladders.
10. Ladder components must be surfaced to prevent injury from punctures or lacerations, and prevent snagging of clothing.

Use of All Ladders (Including Job-made Ladders)

1. When portable ladders are used for access to an upper landing surface, the side rails must extend at least three (3) feet (0.9 m) above the upper landing surface. When such an extension is not possible, the ladder must be secured, and a grasping device such as a grab rail must be provided to assist workers in mounting and dismounting the ladder. A ladder extension must not deflect under a load that would cause the ladder to slip off its support.

2. Ladders must be maintained free of oil, grease, and other slipping hazards.

3. Ladders must not be loaded beyond the maximum intended load for which they were built nor beyond their manufacturer's rated capacity.

4. Ladders must be used only for the purpose for which they were designed.

5. Non-self-supporting ladders must be used at an angle where the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder.

6. Ladders must be used only on stable and level surfaces unless secured to prevent accidental movement.

7. Ladders must not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental movement. Slip-resistant feet must not be used as a substitute for the care in placing, lashing, or holding a ladder upon slippery surfaces.

8. Ladders placed in areas such as passageways, doorways, or driveways, or where they can be displaced by workplace activities or traffic must be secured to prevent accidental movement, or a barricade must be used to keep traffic or activities away from the ladder.

9. The area around the top and bottom of the ladders must be kept clear.

10. Ladders must not be moved, shifted, or extended while in use.

11. Ladders must have non-conductive siderails if they are used where the worker or the ladder could contact exposed energized electrical equipment.
12. The top two steps of a stepladder must not be used as a step.

13. Cross-bracing on the rear section of stepladders must not be used for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections.

14. Ladders must be inspected by a competent person for visible defects on a periodic basis and after any incident that could affect their safe use.

15. When ascending or descending a ladder, the worker must face the ladder.

16. Each worker must use at least one hand to grasp the ladder when moving up or down the ladder.

17. A worker on a ladder must not carry any object or load that could cause the worker to lose balance and fall.

**Inspection**

1. All ladders are to receive a formal inspection.

2. Ladders that pass inspection will have color coded tape showing the inspection expiration date applied to one side rail.
Glossary

Cleat - A ladder crosspiece of rectangular cross section placed on edge upon which a person may step while ascending or descending ladder.

Double-Cleat Ladder - A ladder with a center rail to allow simultaneous two-way traffic for employees ascending or descending.

Failure - Load refusal, breakage, or separation of components.

Fixed Ladder - A ladder that cannot be readily moved or carried because it is an integral part of a building or structure.

Handrail - A rail used to provide employees with a handhold for support.

Job-Made Ladder - A ladder that is fabricated by employees, typically at the construction site; not commercially manufactured.

Load Refusal - The point at which the structural members lose their ability to carry the load.

Point of Access - All areas used by employees for work-related passage from one area or level to another.

Portable Ladder - A ladder that can be readily moved or carried.

Riser Height - The vertical distance from the top of a tread or platform/landing to the top of the next higher trade or platform/landing.

Side-Step Fixed Ladder - A fixed ladder that requires a person to get off at the top to step to the side of the ladder side rails to reach the landing.

Single Cleat Ladder - A ladder consisting of a pair of side rails connected together by cleats, rungs, or steps.

Stairrail System - A vertical barrier erected along the unprotected sides and edges of a stairway to prevent employees from falling to lower levels.

Temporary Service Stairway - A stairway where permanent treads and/or landings are to be filled in at a later date.

Through Fixed Ladder - A fixed ladder that requires a person getting off at the top to step between the side rails of the ladder to reach the landing.

Tread Depth - The horizontal distance from front to back of a tread, excluding nosing, if any.
## Ladder Inspection Checklist

**Project Location:** ____________________________  
**Date:** ____________________________

**Performed by:** ____________________________  
**Type:** (X)

**Inspection tape affixed:** Yes ____  No ____  
**Step:** _________  **No.:** _________

**Extension:** _________  **No.:** _________

**Straight:** _________  **No.:** _________

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<thead>
<tr>
<th>Component</th>
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<th>Unacceptable (X)</th>
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</thead>
<tbody>
<tr>
<td>Rungs/cleats</td>
<td></td>
<td></td>
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<tr>
<td>Side rails</td>
<td></td>
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<tr>
<td>Cross-bracing</td>
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<tr>
<td>Non-slip feet</td>
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<tr>
<td>Rung locks</td>
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<td>Fly wheel</td>
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</tr>
<tr>
<td>Fly rope</td>
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<tr>
<td>Tie-off rope</td>
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<tr>
<td>Free of oil and grease</td>
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</tbody>
</table>

**Comments:**  
________________________________________________________________________  
________________________________________________________________________  
________________________________________________________________________  
________________________________________________________________________  
________________________________________________________________________
For purposes of this procedure, construction equipment shall include all power-driven equipment or manually-operated equipment which, because of its size, nature of its work, or its method of operation, excludes it from the hand tool category (e.g., cranes, trucks, forklifts, and manlifts).

Operators, regardless of other inspections, must make a daily check of brakes, horn, lights, clutch, steering, and other devices required for safe operation.

**Responsibilities**

1. Minimum standards, including all OSHA required equipment, will be established with the vendor by the person responsible for purchase or rental. This may be the construction equipment consultant, site purchasing, or safety department.

2. The construction craft head will assure that all major equipment and rental equipment is inspected:
   a. Upon arrival at the site prior to going into service.
   b. Monthly thereafter, according to inspection and maintenance guidelines as outlined on the major equipment inspection forms.
   c. Items for inspection are listed on the major equipment inspection forms. One (1) copy will be posted on equipment in a plastic envelope; the other will be kept on file with the craft head.
   d. The construction craft head is responsible for insuring that all periodic maintenance functions are performed on schedule on those pieces of equipment where a division computer-controlled maintenance program has been installed.
   e. The craft head will coordinate the inspection and maintenance functions.

3. Contractor's equipment shall be inspected and maintained by the contractor in accordance with OSHA regulations. The site must assure that this contractual requirement is fulfilled.
Control

1. Control of equipment includes, but is not limited to:
   a. Maintenance and repair
   b. Fire protection
   c. Field application
   d. Certification of operator

2. The following lists important details for safe use of construction equipment:
   a. Need for a signal person, back-up alarm, or both.
   b. Drivers must leave truck cab during loading.
   c. Maintenance of inspection records.
   d. Live boom equipment not permitted.
   e. Lights, horns, mirrors, brakes, windshield, etc., shall be clean and operable.
   f. Re-fueling and lubrication procedures and locations established.

3. Refer to ANSI Standard B30.5 for operation, inspection, and control for all cranes.

4. Refer to 29 CFR 1926.952 for other mechanical equipment (i.e. forklifts, aerial lifts, back-hoes, etc.).
FIGURES
ATTACHMENTS
MONTHLY INSPECTION
FORKLIFT

<table>
<thead>
<tr>
<th>JOB NO.</th>
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GENERAL:

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BRAKES:

| OK | N/A |

TIRES:

| OK | N/A |

LIGHTS:

| OK | N/A |

FORKS:

| OK | N/A |

UPRIGHT:

| OK | N/A |

| Tilt cylinder: | OK | N/A |
| Lift cylinder: | OK | N/A |
| Mast:          | OK | N/A |
| Hoses:         | OK | N/A |

COMMENTS:


N/A - NEEDS ATTENTION (WHEN N/A IS NOTED, EXPLAIN IN COMMENTS SECTION)

Figure 17-1. Major Equipment Inspection Form (Forklift)
## Major Equipment Inspection Form (Lifting Crane)

### General

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### Comments

Reference No. of Inspection Item Before Each Comment (Continue on reverse)
Crane Suspended Work Platforms

Purpose

To ensure compliance with the requirement concerning crane hoisted personnel platforms established in the OSHA Construction Standard, 29 CFR Part 1926.550 (g). This procedure is intended to supplement the policy procedure established by (Construction Company).

Scope

Use of crane hoisted personnel platforms is prohibited (except where other means of reaching an elevated work location are more hazardous or not feasible because structural design or work site conditions). Safety of the employees performing the work in an elevated location is the only factor to be considered in deciding whether or not to use a crane hoisted personnel platform.

Authorization

The use of crane hoisted personnel platforms must be approved in writing on a case by case basis. The Superintendent and the Corporate Safety Director must give the required approval.

Training

All personnel involved in crane hoisted personnel platform operations shall be given detailed training in the content of the 1926.550 (g) standard. The training shall be conducted and documented by the Safety Department. Personnel required to attend this training include but are not limited to:

1. Persons designated to approve platform use.
2. Persons inspecting and certifying baskets, rigging and cranes used in personnel hoisting operations.
3. Persons authorized to witness pre-lift tests.
4. Persons authorized to flag or signal cranes.
5. Crane Operators.

Personnel who will perform work from crane hoists personnel platforms shall receive applicable instruction on hazards and precautions to be taken during hoisting. This instruction shall be given immediately prior to the trial lift noted below. Cranes, rigging and personnel platforms: all equipment used to hoist personnel by means of crane hoisted platform shall strictly comply with requirements of 1926.55 (g).
Cranes which do not comply with the requirements of 1926.55 (g) shall have a sign posted at the access door to the operator’s station and in plain view of the which states “NOT APPROVED FOR PERSONNEL HOISTING.”

Permitting

1. A written permit must be obtained for each (copy attached) use of a crane hoisted personnel platform.

2. The permit shall be initiated by the craft performing the elevated work requiring crane hoisted platform.

3. The permit shall describe the work to be performed and its exact location.

4. The permit must be signed by the superintendent on the project authorized to approve crane hoisted personnel platform use.

5. The permit must acknowledge all required inspections, tests, and pre-lift meetings and these must be witnessed and signed for on the permit by the crane operator, rigging supervisor, the requesting craft supervisor responsible for the work and a member of the Safety Department.

6. The person who will flag or signal the operator shall be noted by name on the permit.

7. A permit will be good for only the day which it was issued.

8. A permit is good only for lifts made from single crane set up locations. Movement (traveling) of crane voids permits.

9. A copy of the permit shall remain with the crane which the personnel hoists are in progress and a copy will be placed on file at the Safety Office.

Pre-Lift Meeting

1. Shall be held after approval has been given for crane hoisted personnel platform use.

2. Attendees at this meeting must include but are not limited to:
   a. Crane Operator
   b. Rigging Supervisor
   c. Requesting Craft Supervisor
   d. Safety Representative
e. Flagman/Signal Person
f. Designated workers to be hoisted

3. Activities to be completed at the Pre-Lift meeting include:
   a. Required crane, rigging and platform inspections.
   b. Functional test of anti-two block device.
   c. Test lift with trial weight.
   d. Safety instruction for workers.
   e. Permit signing and issuance.

**Use of Basket**

1. The basket is to be used only where it is not possible or practical to perform the work from ladders, scaffolds, platforms, etc.

2. Only those baskets constructed for this type of work will be used.

3. The basket must be rigged to the load line versus the ship line where possible.

4. Employees are to secure basket gate and are not to climb up on guard rails of basket.

5. A tag line is to be attached to the basket and controlled by an employee on the ground. (If feasible; the situation may deem this practice to be more hazardous.)

6. The crane operator must remain at the controls whenever employees are in a suspended basket.

7. Under no conditions are employees allowed to ride on headache balls, load blocks or hooks.
PERMIT
CRANE HOISTED PERSONNEL PLATFORM

Date: ___________________________  Job No: ___________________________

1. This permit is required by (Construction Company) for compliance with 29 CFR, Section 1926.550 (g) (2).

2. Prior to the use of any personnel platforms suspended from cranes or derricks for the hoisting of personnel, the highest level of project management shall determine if the use of conventional means is more hazardous or not possible because of structural design or worksite conditions. Reasons shall be stated on line three (3).

Superintendent                        Corporate Safety Director
Approval Signature                    Approval Signature

3. Reasons for use: ___________________________

Crane inspected and okay.
Rigging inspected and okay.
Personnel basket inspected and okay.
Anti-two block device tested and okay.
Max operational radius established. ___________________________

Length of radius

Crane capacity at radius above. ___________________________

50% of chart at radius given

Test lift with trial weight completed.
Pre-lift safety orientation completed.
Signal person designated. ___________________________

Name

The persons below acknowledge that they have participated in a pre-lift meeting and acknowledge the above activities were completed satisfactorily.

Crane Operator                        Rigging Supervisor

Safety Representative                 Requesting Craft Supervisor
This procedure shall establish the requirements for storage, handling, and use of solvents and other flammable liquids. All solvents must be approved by the Safety Department prior to purchase.

**General**

Solvents involve the following major hazard considerations:

1. **Toxicity** - Solvents as a group are toxic to varying degrees and in varying ways. Toxic effects may come through breathing of vapors, skin contact (dermatitis, allergy, etc.), skin absorption into system, and oral ingestion.

2. **Flammability** - Virtually all solvents are flammable. The degree of flammability varies with individual solvents. Vapors released by these solvents will be explosive if concentrated in sufficient volume in closed or restricted areas without adequate ventilation.

**Precautionary Measures**

1. **Flammability**
   
   a. Provide adequate ventilation. Adequate ventilation is such that would prevent the accumulation of explosive vapors above 10% of the lower explosive limits of the solvent used.

   b. Provide explosivimeter sampling to assure adequacy of ventilation at beginning of use and as needed during use.

   c. Control spark-producing devices.

   d. Handle solvents in approved safety cans.

   e. Ground against static electricity.

2. **Toxicity**
   
   a. Inhalation Protection:

   1. Provide adequate ventilation to maintain a concentration of vapors below the threshold limit value (TLV).

   2. Where flammability is not of concern, breathing air equipment can afford protection against inhalation of toxic fumes.
b. Skin Contact, Skin Absorption, Oral Ingestion Protection:

1. Long-sleeved shirt, rubber gloves, skin cream, and washing of hands and face before eating or smoking will generally afford adequate protection for solvents. Refer to the appropriate MSDS sheet for specific requirements.

Control of Flammable and Combustible Liquids (Under 200 Degree Flashpoint)

1. Bulk Storage
   a. All tanks for bulk storage of flammables are to be installed in accordance with federal standards. Special attention is directed to the installation of proper flame arresters on both fill and vent piping.
   b. Smoking is prohibited within a distance of 50 feet (50') from any installation as described above or within 50 feet (50') of pumps, fill, or vent piping.
   c. Large containers (55 gallon drums) of lubricating oil, linseed oil, turpentine, paints, kerosene, and similar type oils or solvents, must be stored outside buildings.

2. Small Quantity Handling
   a. An approved safety can must be used to transport, handle, or dispense small quantities of flammable and combustible liquids (gasoline, kerosene, turpentine, solvents, etc.).
   b. Contents of all safety cans must be identified, using labels or stencil.
   c. Lubricating, linseed, and motor oils need not be stored in safety cans. However, these oils should never be stored in open containers (such as pans or buckets); and the cans should be labeled or stenciled as to its content.

Re-fueling Vehicles and Equipment

1. All motor vehicles or equipment operating on the project (which are powered by or operating in connection with an internal combustion engine using gasoline, diesel fuel, lp gas, or similar fuels) shall not be re-fueled with the engine running or operating.

2. All ignition switches shall be in the "off" position during re-fueling operations.
This procedure outlines the inspection techniques to be utilized for a complete project safety and health inspection.

**The Audit Committee**

A committee shall be appointed weekly by the Safety Department to make a complete project inspection. The Safety Department will head the committee and assign the following on a rotating basis:

1. Client representatives
2. Each contractor superintendent

Safety audits will be more effective if a system is followed and certain techniques are used.

**The Auditing System (4 Elements)**

1. **Pre-Audit Preparation**

   Before starting, the team should meet to familiarize themselves with the areas to be audited in terms of:

   a. The extent of the area to ensure complete coverage.

   b. The variety of work activities to be reviewed.

   c. The rules and procedures of the area(s) which, based on experience, define the safe way to do the job.

   d. The injury and incident experience of the area(s), and the result of previous audits which define some of the potential hazards area personnel encounter in their day-to-day work.

   e. The importance of taking immediate corrective action and further actions to prevent recurrence.

Based on this review, particularly the area's injury and incident experience, or previous audit findings, the team may decide to concentrate on some specific activity, such as material handling, or elements of the safety process such as the use of tools, or the wearing of personal protective equipment. The more familiar the team is with the area, the better the quality of the audit.
2. **Conducting the Audit**

Using the information developed during the pre-audit preparation, the team will now conduct the physical part of the audit to assess compliance with the area rules and procedures. Recognizing that rules and procedures may not cover every detail of the area's activity, the team will also evaluate the employees' safety judgment.

The focus will be primarily on employees, with the objective of helping them perform their work activity safely. Infractions, if observed, should be discussed immediately with the personnel involved to alert them to the hazard. Unsafe acts must be stopped and unsafe conditions corrected. An accurate count must be kept of the number of people observed during the audit and a note made of the infractions, along with the corrective action taken. Remember, as the audit is conducted, give recognition to all of those people who are performing their work activity in a safe manner.

3. **Preparing the Audit Report**

After completing the audit, the team should meet together again to fill out an audit report containing the following information:

a. the area designation
b. date of audit
c. names of auditors
d. distribution of the audit report, which has been established by supervision

Each infraction observed and the corrective action taken should be noted on the report. It is at this point that the classification process begins.
4. **Classification**

Each audit observation must be classified in terms of its injury potential. In this way, those actions having a high injury potential can be given priority. While each team must take corrective action immediately when they see a high risk situation, the act of classifying the observations after the audit is finished affords an opportunity for the team to confirm its actions, and to develop a broader view of the safety awareness and behavior of the group audited. To make this process easier, four classifications have been developed according to the injury potential.

a. **Unsafe Act**

An unsafe act is an activity which constitutes a clear and immediate threat to the safety of any individuals involved. What this means is that if a person is doing something and because of it can be hurt, or can hurt someone else, then it is an unsafe act.

b. **Unsafe Conditions**

An unsafe condition is a condition which constitutes a clear and present threat and is a hazard to any individual encountering the condition. An unsafe condition can be likened to a trap waiting to be sprung. There is no real hazard until someone springs the trap on themselves or someone else.

c. **Rule or Procedure Violation**

A rule or procedure violation is any action or condition which contravenes any stated rule or procedure. Rules and procedure violations, if allowed to continue, will eventually result in injury.

d. **Unsafe Practice**

An unsafe practice is an activity, condition, or situation which has the potential to cause injury, but which, by virtue of the degree of hazard presented, does not constitute a clear and immediate threat.
This procedure defines the minimum standards for safely performing excavation and digging work. The supervisor in charge or competent person should in all cases not feel limited only to the provision contained herein. He or she should review the circumstances of the total job and using his or her best judgment, take all necessary precautions to ensure total safety on the job.

**Definitions**

**Competent Person** - One who has had specific training and is knowledgeable about soil analysis, the use of protective systems, and the requirements of the federal standards. A list of trained competent persons should be maintained by the Safety Office.

**Restricted Egress** - An excavation which cannot be easily exited without help from other individuals and/or ladders, ropes, etc.

**Registered Professional Engineer** - An engineer certified by a State Board of Registration for Professional Engineers.

**Stop Logs** - Barriers used to prevent vehicles and/or equipment from getting closer than four (4) feet from an excavation.

**Procedure**

1. Those persons responsible for making and approving excavations, digging, and shoring shall be familiar with all client and federal standards.
   a. Excavations must comply with 29 CFR 1926 Subpart P. 1926.650 - "Excavations".
   b. Underground lines, equipment, and electrical cables shall be identified and located prior to beginning work.

2. All responsible persons shall be aware of the following:
   a. Excavations less than four (4) feet in depth do not require shoring.
   b. Excavation between four (4) and ten (10) feet in depth must have a shoring or sloping plan developed in accordance with the aforementioned standards.
   c. Excavations greater than ten (10) feet in depth require plans developed by the Engineering Department.
Section 20: Excavation and Digging Procedure

Safety Regulations

1. A ladder, ramp, or other safe means of egress shall be located in trench excavations that are four (4) feet or more in depth, spaced not more than twenty-five (25) feet apart. Ladders shall extend three (3) feet above the edge and shall be secured.

2. Underground hazards shall be identified and excavations and digging shall be conducted in a manner designed to minimize the danger caused by unknown hazards.

3. Equipment and piping such as water lines, process lines, electrical cables, sewer piping, etc., which may be encountered during excavation or digging shall be considered and identified before work begins. The Engineering Department will provide drawings at the request of the supervisor in charge and help to identify and locate underground facilities. Personnel involved with the excavation should keep in mind that all underground facilities may not be shown on the drawings or may not be located exactly as shown.

4. Drawings showing any underground electrical facilities within ten (10) feet of the digging area must be at the job site.
   a. The area in which the digging is taking place shall be "highlighted" on the drawing.
   b. The Engineering Department shall be contacted anytime an unknown cable, conduit, or duct is encountered which is not shown on the drawings. They will also be contacted anytime any unknown utilities are encountered.

Pre-Excavation

1. Determine the line and depth of the excavation required.

2. Identify all underground facilities from the drawings.

3. Initiate the required excavation permit (Figure 20-1).

4. Discuss with employees involved in the excavation work the location of all known underground facilities. Be sure to caution them on the possibility of unknown hazards existing.
5. Shoring and sloping plans, if required, must be approved by the craft superintendent. Any non-standard plans must be approved by a registered professional engineer.

6. Soil inspections will be logged on the Soil Condition Inspection Report (Figure 20-2).

**Supervisor's Responsibilities**

1. Supervision of the excavation.

2. Communication with all involved personnel about hidden hazards and identification of known underground facilities from engineering drawings and other sources.

3. Define and mark the extent of the excavation.

4. Monitor operations when water removal equipment is employed to prevent accumulation.

5. Submit to the craft superintendent a written sloping or shoring plan for all excavations between four (4) and ten (10) feet in depth and obtain from the Engineering Department a plan for excavations more than ten (10) feet in depth.

6. Determine the need for and then initiate the required permits.

7. Ensure that the Engineering Department has the necessary information with which to update drawings of underground facilities.

8. Determine if materials used are in good serviceable condition.

9. Ensure that proper personal protective equipment is used.

10. Stop excavation work if there is evidence of a cave-in or slide.

11. Ensure material is not placed within 4'-0" of the excavation.

12. Engineering design should minimize trenches or excavations of excessive depth. This lessens the possibility of injury due to falls into open excavations. At excavations of six (6) feet or greater, install perimeter protection barriers capable of meeting approved strength ratings for temporary 200 lbs. deflection restraint systems (See section 15).
### Competent Person Responsibilities

1. Inspect the excavation daily for evidence of possible cave-in or slides.

2. Ensure that all work shall cease until the necessary precautions have been taken to safeguard employees if evidence of potential cave-in or slides are found.

3. Inspect the excavation after every rainstorm or other hazard increasing occurrence in order to determine the need for increased protection against cave-in or slides.

4. Inspect soils based on one visual and one manual analysis per sample along the entire length and depth of the excavation.

5. Ensure that any trench boxes used are certified by a Registered Professional Engineer and stamped as such.

6. Ensure that shoring timber meets federal standards.

### Excavation Requirements

1. The walls and faces of all excavations which are four(4) feet or more in depth shall be guarded by a shoring system or sloping walls and faces.

2. In excavations which personnel may be required to enter, all materials shall be effectively stored and retained no closer than four (4) feet from the edge of the excavating. Stop logs shall be used where applicable.

3. Materials used for sheeting, cribbing, bracing, or shoring shall be in good serviceable condition and shall meet or exceed the federal standards.

4. When necessary, diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering an excavation.

5. Barricade tape shall be erected around all excavations.

6. Wooden or "hard" barricades shall be erected around all unattended excavations.

7. Where personnel or equipment is required to cross over excavations, walkways or bridges with guardrails shall be provided.

8. Uncovered underground facilities shall be properly supported.
9. Extra precautions shall be taken if it is necessary to place or operate power shovels, trucks, backhoes, or other heavy objects close to an excavation. For excavations over four (4) feet, the sides shall be sheet piled or shored and braced to resist the extra pressure caused by such loads.

10. Soil types shall be listed on the excavation plan.

11. Soil types are as listed:

   a. **Type A Soil** - Cohesive soil with an unconfined compressive strength of 1.5 tons per square foot or greater. Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam, and in some cases, silty and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A. No soil will be considered Type A if:

      - it is fissured.
      - it has been subjected to vibration from heavy traffic, pile driving, or similar effects.
      - it has been previously excavated.
      - it is part of a sloped layered system on a slope of four (4) horizontal to one (1) vertical or steeper.

   b. **Type B Soil** - Cohesive soil with an unconfined compressive strength greater than 0.5 tons per square foot but less than 1.5 tons per square foot. Granular cohesionless soils include angular gravel, silt, silt loam, sandy loam, and in some cases, silty and sandy clay loam. Previously excavated soils except those classified as Type C soil. Soil that meets the unconfined compressive strength or cementation requirements of Type A but is fissured or subject to vibration. Dry rock that is not stable. Material that is part of a sloped, layered system on a slope less steep than four (4) horizontal to one (1) vertical, but only if the material would otherwise be classified as Type B. Most soils fall into this category until they become predominantly granular or saturated at which time they become Type C.

   c. **Type C Soil** - Cohesive soil with an unconfined compressive strength of 0.5 tons per square foot or less. Granular soils including gravel, sand, and loamy sand. Submerged soil or soil from which water is freely seeping.
Submerged rock that is not stable. Material in a sloped, layered system on a slope of four (4) horizontal to one (1) vertical or steeper.

12. Soil will be typed as follows:

   a. **Visual Analysis** - Crumble a soil sample of approximately two (2) square inches in a graduate cylinder or thirty-two (32) ounce glass jar full of water. Coarse grained material will settle to the bottom and fine grained will layer out on top.

   b. **Manual Analysis** - Using a soil sample of approximately two (2) square inches, roll into threads two inches (2") long and one eighth of an inch (1/8") in diameter. If it can be held in a vertical position from the top it will be considered cohesive.

   c. **Drying Analysis** - Tamp a soil sample into a brick of six (6) inches by one (1) inch and set out to dry. If it cracks it is considered fissured. If not, and it can only be broken with considerable force, it is considered unfissured cohesive soil. If it can be broken by hand into small clumps with relative ease, it is considered fissured. Further break up and pulverization will determine if it will be considered fissured cohesive or cohesive granular soil. This procedure will only be used in tandem with a manual analysis listed above in 12.b. It is not considered a sufficient sampling criteria on its own merits.

**Sloping Requirements**

1. **Maximum Allowable Slopes:**

   - Type A  3/4:  1(53 degrees)
   - Type B  1:  1(45 degrees)
   - Type C  12:  1(34 degrees)

2. Sloping diagrams for Type A Soil: (See Attachment 20-A).

3. Sloping diagrams for Type B Soil: (See Attachment 20-B).

4. Sloping diagrams for Type C Soil: (See Attachment 20-C).

5. Sloping is to be designed by the competent person at a maximum of ten (10) feet. Excavations deeper than this will be designed by the Engineering Department.
Shoring Requirements

1. Timber Shoring
   a. All timber shall be inspected prior to use and daily when in use by the competent person.
   b. Timber must be full dimensional mixed oak (850 PSI bending strength) or equivalent, or nominal dimension Douglas Fir (1500 PSI bending strength) or equivalent. In submerged or saturated soil, tongue and groove boards three (3) inches thick must be used as uprights.
   c. Careful determination of the spacing requirements shall be made prior to the selection of timber sizes. Careful note of the top and bottom waler/cross braces and vertical spacing shall be made.
   d. Wales shall be oriented with the greatest dimension horizontal.
   e. Timber shoring will be built from the top down and pulled from the bottom up to ensure personnel safety.
   f. Timber shoring is a bracing procedure. As such, the uprights shall be pushed directly into the banks with no space allowed between them in order to create a pre-load on the shoring system. Tightening of cross braces is generally down with wedges driven between the cross braces and the walers.
   g. Plywood shall not be used as a structural component of a shoring system. When used in conjunction with other shoring methods it will serve to protect personnel against loose material unraveling from the walls. Plywood shall be a minimum of one and one eighth of an inch (1c") CDX or three quarters of an inch (3/4") White Artic Birch (Fin Form).
   h. Surcharge loads will be limited to two (2) feet of soil or twenty thousand (20,000) pounds of equipment.
   i. Gravity loads on the cross members will be limited to two hundred and forty (240) pounds per one (1) linear foot.
   j. Screw jacks will consist of a static foot and a length of pipe not more than six (6) feet long and two (2) inches std. in diameter. It will have one (1) threaded foot with an adjuster lever nut to vary the length of the jack and create a pre-load.


Section 20: Excavation and Digging Procedure

k. Screw jacks shall be installed at a true ninety (90) degree angle to ensure a purely compressional load and prevent kick out.

l. Daily inspections shall include an attempt to tighten the screw jack with a cheater pipe (if applicable).

m. Screw jack feet must be nailed to the timber.

n. Screw jacks shall be installed from the top down and pulled from the bottom up.

o. Timber shoring jobs will not be started before the Timber Shore Problem Sheet (Attachment 20-D) is filled out and filed with the Soil Condition Inspection Report.

2. Pneumatic Shoring

a. Any pneumatic shoring utilized shall be used following the manufacturers data.

b. Pneumatic shoring shall be installed from the top down and removed from the bottom up.

c. Pneumatic shores shall be subject to hydraulic shoring regulations.

3. Hydraulic Shoring

a. Any hydraulic shoring utilized shall be used following the manufacturers data.

b. Hydraulic shoring shall be installed from the top down and removed from the bottom up.

c. Fluids used shall be a mix of vegetable oil and water. No petroleum products shall be used.

d. Top cylinders on vertical shores shall be no more than eighteen (18) inches below the top of an excavation, and bottom cylinders no more than four (4) feet above the bottom of an excavation.

e. Top cylinders on horizontal wales shall be no more than two (2) feet below the top of an excavation, and bottom cylinders no more than four (4) feet above the bottom of an excavation.
f. Surcharge and gravity loads are restricted to no more than one hundred (100) pounds of gravity on a one (1) foot span and no more than twenty thousand (20,000) pounds of equipment surcharge.

g. Spoil piles will be maintained at a minimum of four (4) feet in distance from the edge of the excavation.

h. Oversleeves are required on two (2) inches in diameter cylinders on excavations in excess of eight (8) feet in width.


**Shielding Requirements**

1. All shields must be approved by a Registered Professional Engineer.

2. Any modifications to shields must be approved by a Registered Professional Engineer.

3. Shields must be installed to prevent lateral movement in event of a cave-in.

4. Shields may ride two (2) feet above the bottom of an excavation provided they are calculated to support the full depth of an excavation and there is no chance of caving in under or behind the shield.

5. Personnel must enter and leave the shield in a protected manner, such as a ladder within the shield or a property sloped ramp at the end.

6. Personnel must not remain in a shield during installation, removal or movement of the shield.

7. Shields with open ends shall have the ends sloped, shored, or shielded to prevent cave-in.

8. When used in excavations deeper than a shield height, correctly specified stacker shields may be used or the top of the excavation may be sloped back at the soil type allowable angle from a point eighteen (18) inches below the top of the shield.

9. All shields must extend a minimum of eighteen (18) inches above the top of the excavation vertical wall whether it is slopped from there or not.
FIGURES
ATTACHMENTS
EXCAVATION PERMIT

Project No. __________________ Area __________________
Requested by __________________ Phone __________________ Date __________________
Date Required __________________ Charge Code __________________
Ref. Dwg./Rev. No. __________________

Permission is requested to excavate to an approximate depth of ______ feet, width of ______ feet, and length of ______ feet at the following location: (attach sketch if there is no reference dwg.)

The reason for the excavation is:

The following objects are known to be buried in this area:

<table>
<thead>
<tr>
<th>Object</th>
<th>Location</th>
<th>Approximate Depth of Bury</th>
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Initiated by: __________________

Noted by:

Electrical Superintendent __________________ Date __________________
Pipe Superintendent __________________ Date __________________
Safety Superintendent __________________ Date __________________

Work Complete: __________________
Signed/Date __________________

Figure 20-1. Excavation Permit
## SOIL CONDITION INSPECTION REPORT

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Soil Sample: Longitude and Depth</th>
<th>Soil Type</th>
<th>Water in Excavation</th>
<th>Weather Changes</th>
<th>SLOPING or SHORING Type</th>
<th>Changes Since Last Inspection</th>
<th>Competent Persons Initials</th>
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**NOTES:**

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COMPETENT PERSON'S SIGNATURE

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Figure 20-2. Soil Condition Inspection Report
EXCAVATING IN TYPE A SOILS

(All slopes listed below are in the horizontal to vertical ratio)

1. All simple slope excavations 10 feet or less will have a maximum allowable slope of 1:4.

2. All bench excavations 10 feet or less will have a maximum allowable slope at 1:4, and maximum bench dimensions are as follows:

   - **TYPE-A SIMPLE BENCH**
     - 10' MAX.
     - 4' MAX.

   - **TYPE-A MULTIPLE BENCH**
     - 10' MAX.
     - 5' MAX.
     - 4' MAX.
Unsupported vertically sided lower portion - Max. 8 foot depth

3. All excavations 8 feet or less which have an unsupported vertically sided lower portion will have a maximum vertical side of 3 feet.

4. All excavations 10 feet or less which have vertically sided lower portions that are supported or shielded will have a maximum allowable slope of \( \frac{3}{4} : 1 \). The support or shield system must extend at least 18 inches above the top of the vertical side.
1. All simple slope excavations 10 feet or less will have a maximum allowable slope of 1:1.

2. All bench excavations 10 feet or less will have a maximum allowable slope of 1:1. All bench excavations 10 feet or less will have a maximum allowable slope of 1:1.

This bench allowed in cohesive soil only

This bench allowed in cohesive soil only

Attachment 20-B - Excavating in Type B Soil
(Sheet 1 of 2)
3. All excavations 10 feet or less which have vertically sided lower portions will be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations will have a maximum allowable slope of 1:1.
1. All simple slope excavations 10 feet or less will have a maximum allowable slope of 1½:1.

2. All excavations 10 feet or less which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1½:1.
TIMBER SHORE PROBLEM SHEET

Excavation Depth _______ Length _______ Width _______ Soil Type _______

TIMBER DIMENSIONS

A. Upright Clearance _______
B. Depth of 1st Wale _______
C. Spacing to 2nd Wale _______
D. Spacing to 3rd Wale _______
E. Height of Lowest Wale From Bottom _______
F. Mudsill Used? _______
G. Uprights Embedded? _______
H. Wales Oriented with Longest Dimensional Horizontal? _______
I. Surcharge Load Limits 2 Feet of Spoil or 20,000 lbs. Equipment or Under? _______

SIDE VIEW

TOP VIEW

Upright Dimensions _______ Upright Spacing Close? _______ Tight? _______
Cross Brace Dimensions: Top Row _______ 2nd Row _______ 3rd Row _______
Horizontal Spacing (A) _______
Provisions for Trench Ends: Sloped (Ratio or Angle) _______
Shored (Mechanical or Timber) _______
Other _______
Ladders or Steps if Over 4 Feet Deep? _______
Are ladders placed every 25 feet of length of trench? _______

Attachment 20-D - Timber Shore Problem Sheet
The top of the shield should extend about 18" above the top of the trench to prevent material from rolling or falling into the shield.

CORRECT

INCORRECT

- The bar does not extend above the top of the trench.
- The trench is not sloped at the correct angle to a point 18" below the top of the shield.
- There is too much space between the shield and the trench walls. Side shifting would occur in the event of a cave-in.
Some shields can be stacked and pinned together, according to manufacturer's specifications. There should be little or no space between trench walls and shield(s) to prevent side-shifting in event of a cave-in. Top of shield should extend 18" above top of excavation, or excavation should be sloped to correct angle to a point 18" below top of shield system.

The excavation is sloped in the ascent angle to a point 18" below the leg of the shield to prevent any material from rolling into it.
The following safety procedure has been outlined to ensure that employees who are working on lead-coated surfaces and in areas of lead emissions (from blasting, grinding, cutting, welding, or otherwise causing lead to be disturbed and the lead count to exceed the action level (30 ug/m3)), are provided with the safety equipment and instructions necessary for these environments.

All work identified as having potential employee exposures to lead must be conducted in compliance with 29 CFR 1926.62 of the Occupational Safety and Health Administration and will be performed in accordance with this procedure until an Exposure Assessment (29 CFR 1926.62 (d)) is done. Once the assessment is completed, the Corporate Safety Department will review it and make the appropriate recommendations for review and implementation.

There are twelve (12) basic components of this procedure, and compliance with all applicable rules and regulations shall be mandatory. These components are: **Training**, **Hazard Communication**, **Medical Examinations & Surveillance**, **Air Monitoring**, **Respiratory Protection**, **Personal Protective Equipment**, **Hygiene Practices and Facilities**, **Housekeeping & Maintenance**, **Documentation & Retention of Records**, **Waste Disposal**, **Job Work Procedure**, and **Pre-Job Safety Planning**.
I. Training

II. Hazard Communication
   A. Exposure Potential
      1. Paint Primer/Pigments
      2. Removal Processes
         a. Sandblasting
         b. Power Tool Removal
         c. Chemical Stripping
         d. Hydroblasting
   B. Routes of entry into body
      1. Inhalation
      2. Ingestion
      3. Absorption
   C. Safety Equipment
   D. Containment/Open Air Removal

III. Medical Surveillance
   A. Blood Lead Screening
      1. How Often
      2. Acceptable Norms
   B. Medical Removal
      1. Medical Treatment
      2. Medical Removal Protection

IV. Air Monitoring
   A. How Often
   B. Personnel/Area Sampling
   C. Employee Access to Records 29 CFR 1910.20
V. Respiratory Protection
   A. Respirator Selection
   B. Fit-Testing
   C. Protection Factors
   D. Care of Respirators
   E. Use of Respirators

VI. Personal Protective Equipment

VII. Hygiene Practices and Facilities
   A. Shower/Decontamination Procedure
   B. Warning Signs
      1. No Eating in work area
      2. No Smoking in work area
      3. No Drinking in work area

VIII. Housekeeping and Maintenance

IX. Documentation and Retention of Records

X. Waste Disposal
   A. Contaminated Clothing
   B. Contaminated Debris/Water

XI. Work Procedures
   A. Before Work Starts
   B. Lunch/Breaks
   C. End of Shift
   D. Employee/Crew Responsibilities

XII. Pre-Job Safety Planning
LEAD REMOVAL TRAINING  
(Sample Program)

I. Training

Prior to working on a lead removal project, each employee will be trained in the proper work procedure. All employees must understand the correct methods of worker protection to ensure their safety and health is not jeopardized. Training is conducted in accordance with 29 CFR 1910.1025, Appendix B (X), and 29 CFR 1926.62(l)(2). All training will be documented.

II. Hazard Communication

A. Lead pigment in paint has been used as a rust inhibitor for years. From an occupational health standpoint, dry paint containing lead, if it is intact, poses little if any hazard. The hazard arises when the lead coating is disturbed in some way. Disturbance may occur when welding, grinding, burning, or when abrasive blasting is performed on painted steel. The high temperature generated during burning and welding processes melts the lead and converts it into a fume. Abrasive blasting pulverizes coatings into very fine particles. These airborne fumes of lead present a serious hazard to workers.

B. Workers are exposed to lead in one of two (2) ways:

1. Inhalation of airborne lead is inhaled.
2. Ingestion when employees fail to thoroughly wash lead off their hands before eating, or smoking contaminated cigarettes.

   Lead accumulates in the body causing lead poisoning which, in large doses, can cause death. Exposure to smaller doses over long periods of time can cause damage to the blood-forming, nervous, urinary, and reproductive systems. The most severe forms of lead poisoning cause damage to the central nervous system and to the brain.

C. To assure that employees are not exposed to lead either through inhalation or ingestion, the following safety equipment must be utilized on the jobsite:

1. Respiratory Protection
2. Protective Clothing
3. Shower & Wash Facilities

4. Warning Signs:

**WARNING**

LEAD WORK AREA
POISON!

NO EATING, DRINKING OR SMOKING

5. Barricaded Areas

All employees will receive orientation on the hazards of working in a lead environment prior to the start of work. The orientation will be documented on a Hazard Communication Roster Sheet.

III. Medical Examination & Surveillance

A. Blood Lead Screening

1. Employees will be provided with medical surveillance, consisting of monitoring of blood lead and ZPP levels prior to assignment for the first time to an area in which airborne concentrations of lead are at or above the action level (30 ug/m3).

2. For new employees assigned to perform lead removal, monitoring of blood lead and ZPP levels will be rechecked at two (2), four (4) and six (6) months after continued lead exposure, and then every six (6) months thereafter when there is continued lead exposure at or above the action level.

3. Monitoring of blood lead and ZPP levels will be given every six (6) months to any employee who is at or above the action level for a period of 30 days or longer per year.

4. Employees shall be notified, in writing, within five (5) working days after the receipt of monitoring results of the employee's blood lead and ZPP level.
Section 21: Lead Coated Surfaces Safety Procedure

B. Medical Removal

1. Blood lead levels at or above the 40 ug/dl

   After an examination reveals that an employee is at or above 40 ug/dl, the employee shall:

   a. Be removed from the lead exposure area and reassigned to other duties.

   b. Be given a follow-up examination within a two week period.

   c. Be given a follow-up examination every two months until two (2) consecutive blood samples indicate a blood level below 40 ug/dl of whole blood.

   d. Be given a medical examination per requirements of 29 CFR 1926.62(j)(3).

2. Blood levels at or above the 50 ug/dl

   After an examination reveals that an employee is above the allowable lead level of 50 ug/dl, the employee shall be provided with medical removal protection benefits as described in 29 CFR 1926.62(k). The employee may return to former job status when:

   a. Two (2) consecutive blood sampling results indicate that the employee's blood level is at or below 40 ug/dl;

   b. Medical opinion that the employee no longer has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to lead;

   c. Employee has been given a medical examination per requirements of 29 CFR 1926.62(j)(3).

Prior to leaving employment (for any reason), a blood test will be offered to any employee who has been monitored for lead but who has performed lead work since his or her last medical evaluation.
Section 21: Lead Coated Surfaces Safety Procedure

IV. Air Monitoring

A. Air monitoring will be conducted as described in 29 CFR 1910.25(d) and 29 CFR 1926.62(d). Employees will be provided with monitoring results within five (5) days of receipt.

B. Personnel air monitoring results will be provided to all employees immediately upon receipt from the air monitoring company. Each employee will sign, on the appropriate form, acknowledging they have been notified of the results. If they have any questions regarding the air monitoring results, they should see their supervisor or contact the Safety Department.

V. Respiratory Protection

A. Prior to working in a lead contaminated area, each employee will be issued respiratory protective equipment applicable to their specific job assignment. In addition, the employee will be fit tested semi-annually and trained in the proper use, cleaning, and storage of his or her equipment.

1. Removal Outside Containment

a. Blasters shall wear approved air-supplied blasting hoods with a half-mask negative pressure respirator with high efficiency cartridges underneath.

b. Employees power tooling, hand removing, or waterwashing lead-contaminated coatings shall wear a half-mask respirator with high efficiency (HEPA) cartridges.

c. Employees welding, burning, or cutting on steel painted with lead paints shall wear an approved air-supplied respirator.

2. Removal Inside Containment

a. Blasters shall wear approved air-supplied blasting hoods with an air-supplied half-mask respirator underneath.

b. Employees power tooling, hand removing, or waterwashing lead contaminated coatings shall wear a full-face air-supplied respirator.

c. Employees welding, burning, or cutting on steel painted with lead paints shall wear a full-face air-supplied respirator.
VI. **Personal Protective Equipment**

A. Employees shall wear disposable coveralls or will be issued washable coveralls on a daily basis. This will be done at the company's expense.

B. Each employee will be issued a pair of shoe covers, rubber boots, or similar foot covers, and will be responsible for their cleanliness at the end of each shift. Employees will not be allowed to wear contaminated clothing off of the jobsite.

C. Each employee will be issued a pair of impervious gloves (rubber or rubber material combination).

D. Employees working in a high concentration of airborne dust will wear a head cover (such as a hood) under their hard hats.

E. Ear protective devices shall be provided in high noise areas.

F. Hard hats and safety glasses shall be provided and worn on all job sites.

G. Miscellaneous safety equipment such as safety belts, safety harnesses, and lanyards will be provided and issued accordingly.

**Employees will not be permitted to wear any personal clothing (other than underwear and socks) while working in a lead-contaminated environment.**

VII. **Hygiene Practices and Facilities**

A. Employees will be provided with a wash area and a shower when working in lead-contaminated areas.

B. Employees shall wash their hands and face before lunch and breaks.

C. Employees are not allowed to eat, drink, smoke, dip, or chew while working in lead-contaminated areas.

D. Employees working in lead-contaminated areas shall shower at the end of their work shift and take their soiled underwear and socks home on a daily basis.

**A good program of personal hygiene must be followed to insure that lead-contaminated dust is not taken home to the employee’s family or friends.**
E. Portable Shower/Change Trailer

1. Employees enter the trailer in the locker room area (clean room and remove street clothes and place in locker).

2. Employees dress out in protective gear (throwaways or washables) and leave by the front door.

3. At break time, employees wash hands and face in wash basin provided.

4. At shift's end, employees enter the dirty room, discard contaminated clothing into drum, and shower. They then enter the clean room from the shower room and dress in their street clothes.

5. Employees do not enter the clean room until shift's end and then only after decontamination (showering in the shower room).

6. All employees' gear is washed and placed in a 5-gallon closed-top bucket daily at shift's end for use the next day.

7. Throwaways are scrapped on a daily basis in proper receptacles, marked "Possible Lead Contamination."

8. Disposal of lead equipment and materials shall meet all applicable local and state standards. (See Section X).

VIII. Housekeeping and Maintenance

A. Areas of work which may be contaminated with lead dust must be kept clean and materials collected and kept in appropriate containers.

B. Contaminated clothing must be placed in closed top containers prior to washing or removal from the job site. If these are to be washed by an outside company, a letter documenting that the clothing contains lead must be provided for the company receiving the contaminated clothing.

C. All protective clothing and equipment must be stored in a designated contaminated area.

D. Compressed air shall not be used for cleaning of the work area.
IX. Documentation and Retention of Records

Documentation of this procedure shall be done by the Safety Department or designated person on the job. This person will see that all forms are signed and completed as outlined. Documents include safety meeting rosters, shower rosters, and safety equipment rosters. Rosters shall be maintained for a period of not less than 40 years or 20 years plus duration of employment, which ever is longer.

X. Waste Disposal

A. Containers of contaminated protective clothing and equipment shall be labeled as follows:

CAUTION: CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD-CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.

B. Disposal of lead contaminated abrasives, contaminated water, and other contaminated debris will be handled in accordance with local, state, and federal regulations and in accordance with specific guidelines as established by the client/owner.

C. Contaminated abrasives will be collected and placed in containers provided by client/owner. These containers will be placed in the storage area established by the client/owner.

D. When waterwashing or waterblasting, containment dikes will be lined to collect the contaminated water. The collected water will be transferred to the storage container provided by client/owner.

E. Any other contaminated debris will be placed in containers provided by client/owner. These containers will be placed in the established waste storage area.

F. Should there be an accidental release of contaminated materials to the ground, immediately notify the client/owner.
XI. Work Procedures

A. Before Work Starts

1. All employees shall comply to the medical examination section (Section III) of this procedure prior to beginning any work in a lead environment. The supervisor is responsible to assure that this section is in compliance.

2. A pre-work safety meeting shall be conducted to assure that all employees understand the safety requirements of this job and the hazards relating to exposure to lead-contaminated dust and fumes. This safety meeting will inform the employees of their responsibilities and impress compliance to the safety procedures so outlined.
   a. Employees shall report to their foreman for issuance of the safety equipment.
   b. Employees shall be issued their safety equipment by the supervisor or Safety Department to ensure that employees comply to the proper dress code of coveralls, gloves, hard hats, safety glasses, head covers as required, and foot covers.
   c. Following issuance of all pertinent protective clothing, the employees will report to work.
   d. Street clothing will be left in the clean area of the shack or trailer.

B. Lunch/Breaks

1. Employees shall be brushed off or vacuumed off as they leave the work site for the area in which they will take their break or lunch. A HEPA vacuum is the preferred method of removing the lead contamination.

2. Employees shall remove their respiratory equipment and gloves and place them in the respective storage area.

3. Employees shall wash their face and hands in the lavatory or wash basin provided in the dirty side of the trailer.

4. Employees shall take their break or lunch, secure their safety equipment, and then return for work.
C. End Of Shift

1. Employees shall be brushed or vacuumed off by a co-worker as they leave the work site. A HEPA vacuum is the preferred method of removing contamination.

2. Employees shall go to their respective safety equipment storage areas and, after cleaning the equipment, shall store it in the area and/or seal it in containers provided for that purpose.

3. Blast hoods shall be hung in an upright position where contaminated equipment/material is stored.

4. Employees shall enter the shower area and discard their contaminated coveralls in a covered-top container, properly labeled as a lead-contaminated container. The employee will shower. Each employee will be issued a clean towel, either washable or disposable. The employee will then discard the towel in a covered top container, properly labeled. Each employee will sign the shower roster as they leave the shower area. The Safety Department will verify compliance to the above.

5. Employees shall dress into street clothes and leave the area.

6. Employees shall take their soiled underwear and socks home on a daily basis.

D. Employee/Crew Responsibilities

1. All employees shall comply with the safety requirements outlined in the lead safety work procedure.

2. Employees shall have a change of underwear and clean socks on a daily basis. Soiled underwear and socks shall be taken home on a daily basis.

3. If the employee is an abrasive blaster, the air-supplied hood, after being cleaned, shall be hung upright in the shack in which boots, hoods, and other slightly contaminated equipment may be stored.

4. Employees shall wear protective devices including respirators while working in areas which require them. They shall not remove the devices until they remove themselves from the areas of contamination.
5. Employees shall inspect their safety equipment daily and assure that it is in good condition prior to entering the work areas. Anytime any safety equipment is in need of repair, it shall be brought to the attention of the supervisor for immediate action to be taken.

6. Anytime the scope of the work changes, there is the possibility of additional safety requirements. In this case, a safety meeting may be held to discuss the changes/additions to the responsibilities of the supervisor/hourly employees.

XII. Pre-Job Safety Planning.

A. A Safety Action Plan (SAP) shall be developed for each lead removal job prior to commencement of the removal activities. The SAP must give a detailed listing of the hazards involved, review any applicable historical assessment data, review applicable engineering controls, review housekeeping controls, and detail method of lead removal.

After the SAP is complete, it shall be reviewed with all employees assigned to the project. The employees will acknowledge this review and their understanding by signing an appropriate meeting roster form.
LEAD REMOVAL
JOB SAFETY ACTION PLAN

Job Location ___________________  Job Number ___________________  Date ____________

Job Description______________________________________________________________________

PRE-JOB SAFETY INSPECTION

Check applicable items relating to the above job.

<table>
<thead>
<tr>
<th>PERSONAL PROTECTIVE EQUIPMENT</th>
<th>HAZARDS (Physical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety glasses, goggles, face shield</td>
<td>Fall potential</td>
</tr>
<tr>
<td>Gloves: (circle one)</td>
<td>Pinch point</td>
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<tr>
<td>cotton, leather, impervious</td>
<td>Slip/trip hazard</td>
</tr>
<tr>
<td>Hearing protection</td>
<td>Heavy objects</td>
</tr>
<tr>
<td>Safety harness &amp; lanyard</td>
<td>Other (specify) ______________</td>
</tr>
<tr>
<td>Respirators, negative pressure</td>
<td></td>
</tr>
<tr>
<td>Respirators, supplied air</td>
<td></td>
</tr>
<tr>
<td>Slicker suit</td>
<td></td>
</tr>
<tr>
<td>Tyvec suit</td>
<td></td>
</tr>
<tr>
<td>Nomex coveralls</td>
<td></td>
</tr>
<tr>
<td>Nearest safety shower &amp; eye wash</td>
<td></td>
</tr>
<tr>
<td>Rubber boots</td>
<td></td>
</tr>
<tr>
<td>Barricades, physical - tape</td>
<td></td>
</tr>
<tr>
<td>Washing facility &amp; restroom</td>
<td></td>
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<tr>
<td>Drinking water</td>
<td></td>
</tr>
<tr>
<td>Toe protectors</td>
<td></td>
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<tr>
<td>Other (specify) ______________</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>HAZARDS (Environmental)</th>
<th>HAZARDS (Physical)</th>
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<tbody>
<tr>
<td>Airborne particulates</td>
<td>Fall potential</td>
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<tr>
<td>Electrical shock</td>
<td>Pinch point</td>
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<tr>
<td>Heat stress</td>
<td>Slip/trip hazard</td>
</tr>
<tr>
<td>Hot/Cold surfaces or materials</td>
<td>Heavy objects</td>
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<tr>
<td>Restricted lighting</td>
<td>Other (specify) ______________</td>
</tr>
<tr>
<td>Noise</td>
<td></td>
</tr>
<tr>
<td>Restricted egress/access</td>
<td></td>
</tr>
<tr>
<td>Sharp objects</td>
<td></td>
</tr>
<tr>
<td>Other (specify) ______________</td>
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</table>

<table>
<thead>
<tr>
<th>HAZARDS (Chemical)</th>
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<tbody>
<tr>
<td>Chemical burns - skin/eyes</td>
<td>Equipment has any type of energy source</td>
</tr>
<tr>
<td>Flammable</td>
<td>Can start manually or automatically</td>
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<tr>
<td>Ingestion hazard</td>
<td>Contains systems which have gas, liquids or solids</td>
</tr>
<tr>
<td>Inhalation hazard</td>
<td>Potential for electrocution</td>
</tr>
<tr>
<td>Skin contamination</td>
<td>Potential for entanglement/entrapment</td>
</tr>
<tr>
<td></td>
<td>Potential for chemical exposure</td>
</tr>
<tr>
<td></td>
<td>Potential for release of toxic agents</td>
</tr>
<tr>
<td></td>
<td>Potential for release of any stored energy</td>
</tr>
<tr>
<td></td>
<td>Other (specify) ______________</td>
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</table>

<table>
<thead>
<tr>
<th>HAZCOM INFORMATION</th>
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<tbody>
<tr>
<td>Right To Know</td>
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<tr>
<td>MSDS for chemicals - document training</td>
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</table>

<table>
<thead>
<tr>
<th>CONFINED SPACE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not intended for continuous occupancy</td>
<td></td>
</tr>
<tr>
<td>Have limited openings</td>
<td></td>
</tr>
<tr>
<td>Over 4’ in depth</td>
<td></td>
</tr>
<tr>
<td>Potential atmosphere contamination</td>
<td></td>
</tr>
<tr>
<td>Moving parts</td>
<td></td>
</tr>
<tr>
<td>Electrical hazards</td>
<td></td>
</tr>
<tr>
<td>Potential for contamination by liquids, solids or gases</td>
<td></td>
</tr>
<tr>
<td>Potential of isolation of occupants from help</td>
<td></td>
</tr>
</tbody>
</table>
PHYSICAL OPERATIONS

- Tools - Hand, proper use of
- Tools - Power, proper use of
- Handling and storage
- Lifting
- Mechanical lifting devices
- Pre-Lift inspection of device and rigging
- Proper rigging practices discussed
- Manual lifting techniques reviewed
- Ladders properly secured & inspected
- Scaffold properly erected and tagged
- Welding and cutting
- Qualified welder/burner
- Spark containment
- Shields
- Grounding
- Fire extinguisher
- Qualified fire watch
- Flashback arresters
- Proper regulators

EQUIPMENT

- Cranes/pickers
- Forklift
- Manlift
- Spider
- Other (specify)_
- Do operators have current card?
- Does equipment have current inspection?

ENGINEERING CONTROLS

- Enclosure
  - Full _____ Partial _____
- Wetting Agent
- HEPA Vacuums
- Dust Collector
- Other (Specify)

AIR COMPRESSOR - BREATHING AIR

- CO Drager tubes
- Whip Restraints
- Hoses, no defects or leaks
- Hoses, clips, pins or wire
- Filters
- Incompatible fittings
- High temp shut-off
- NIOSH approved hood
- Functional "Dead Man" control
- Dust masks under hood
- Ear plugs
- Fire extinguishers

PRE-JOB INSTRUCTIONS


MSDSs TO BE REVIEWED


Safety Reference Manual 21-15 (01/08/03)
Asbestos-containing Materials (ACM) are a known cancer causer. Asbestos is the name of a class of magnesium-silicate minerals that occur in fibrous form. Minerals that are included in this group are chrysotile, crocidolite, amosite, anthophyllite and actinolite asbestos. These materials were used (and in some rare cases still are used) in the manufacture of heat-resistant clothing, automotive brake and clutch linings, and a variety of building materials, including floor tile, roofing felt, ceiling tile, fire resistant drywall, etc. The potential for an ACM to release breathable fibers depends on its degree of friability. Friability means that the material can be crumbled with hand pressure and is therefore likely to emit fibers. Under no circumstances are untrained or unauthorized personnel to enter any barricaded areas marked as Asbestos.

**Terms and Definitions**

Asbestos-containing material (ACM) means any material containing (one-percent) or more of asbestos.

Building/facility owner is the legal entity, including a lessee, which exercises control over the management and recordkeeping functions relating to a building and/or facility in which activities are covered by this standard.

Negative exposure assessment means a demonstration by the employer that employee exposure during a specific operation is expected to be consistently below the PEL.

Surface Material means material that is sprayed-on, troweled-on or otherwise applied to surfaces such as acoustical plaster on ceilings and fireproofing materials on structural members, other materials on surfaces for acoustical, fireproofing, and other purposes.

Permissible Exposure Limit (PEL) means the airborne concentration of asbestos of 0.1 fibers per cubic centimeter of air (0.1 f/cc) as averaged over 8 hours.

Excursion Limit (EL) means the airborne concentration of asbestos of 1.0 fibers per cubic centimeter of air (1.0 f/cc) as averaged over 8 hours.

Thermal System Insulation (TSI) means ACM applied to pipes, fittings, boilers, breaching, tanks, ducts, other structural components to prevent heat loss or gain.

Presumed Asbestos-Containing Material (PACM) means thermal system insulation and surfacing material found in buildings constructed before 1981, unless an asbestos survey has been done to rebut the assumption.

Intact means that the ACM has not crumbled, been pulverized, or otherwise deteriorated so that it is no longer likely to be in its original shape for form.
Disturbance means contact which releases fibers from ACM or PACM or debris containing ACM or PACM. This term includes activities that disrupt the matrix of ACM or PACM, render ACM or PACM friable, or generate visible debris. Disturbance includes cutting away small amounts of ACM or PACM no greater than the amount which can be contained in one standard sized glove bag or waste bag in order to access a building component.

Closely Resemble means that in order to be compared to current projects, workplace conditions from past projects must have used the same types of engineering controls and work practices.

Amended water means water to which surfactant (wetting agent) has been added to increase the ability of the liquid to penetrate ACM.

Competent Person means in addition to the definition in 29 CFR 1926.32(f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f). In addition, for Class I and Class II work, one who is specially trained in a training course which meets the criteria of EPA’s Model Accreditation Plan (40 CFR 763) for project designer or supervisor, or its equivalent. For Class II and Class IV work, one who is trained in an operations maintenance (O&M) course developed by EPA (40 CFR 763.92(a)(2)).

Industrial Hygienist means a professional qualified by education, training, and experience to anticipate, recognize, evaluate, and develop controls for occupational health hazards.

FOUR MAJOR CLASSES OF ASBESTOS WORK ACTIVITIES

The revised asbestos standard identifies four major classes based on work activities and the type of asbestos-containing material (ACM) or presumed asbestos-containing materials (PACM) being removed or handled. Each class has specific requirements for exposure assessments, engineering controls and work practices, respiratory protection, hygiene facilities and practices, protective clothing, and employee information and training.

CLASS I

Class I work is defined as asbestos work activities involving the removal of thermal system insulation and surfacing ACM and PACM. OSHA feels that this class has the highest potential for exposures above the PEL requirements.

Exposure Assessment

Each employer is required to conduct an initial exposure assessment for work or workplace operations covered by the asbestos standard. The Exposure Assessment must be done by a Competent Person before or at the start of the operation.
Each employer is required to conduct daily monitoring that is representative of each employee assigned to work within a regulated area. Until this employee exposure monitoring and sampling has been documented or it has been demonstrated that the employee exposure will be below the PEL through objective data, the employer will assume that Class I work activities will exceed the PEL and excursion limit.

The objective data must be from prior asbestos jobs within the last 12 months of the current job or a project which closely resembles work activities.

**Engineering Controls and Work Practices**

1. For all asbestos removal regardless of class the employer shall use:
   - Vacuum cleaners equipped with HEPA filters to collect ACM debris and dust.
   - Wet methods or wetting agents, to control employee exposure.
   - Prompt clean-up and disposal of waste and contaminated waste in sealed containers.

2. The standard defines the following specific work practices and control methods which must be used for Class I work activities:
   - Isolate HVAC system with two (2) layers of six (6) millimeter plastic.
   - Impermeable drop clothes must be placed below all removal activities.
   - All objects in the regulated area must be covered with impermeable drop cloths or plastic sheeting secured by duct tape.
   - If the PEL will be exceeded or the employer cannot produce a negative exposure assessment, the regulated area must be ventilated to move contaminated air from the breathing zone of a worker towards a HEPA filtration system or device.

**Negative Pressure Enclosure**

1. Minimum of four (4) air changes per hour.

2. Minimum of 0.02 inches of differential water pressure. Must be verified by manometer.
3. Must maintain pressure throughout and must be inspected and smoke tested before each shift.

4. Electricity must be deactivated unless ground fault circuit interrupters are used.

**Glove Bag System**

1. Used on straight runs of piping surfaces at temperatures less than 150 degrees Fahrenheit.

2. Bags must be six (6) millimeter thick plastic with seamless bottom.

3. Glove bags can only be used once and are not allowed to be moved along the pipe.

4. Work must be performed by at least two (2) persons.

**Negative Pressure Glove Bags**

1. Same requirements as glove bag but HEPA vacuum or other device must be used to maintain negative pressure. This can be accomplished before starting the task and prior to the removal of the glove bag.

**Negative Pressure Glove Box Systems**

1. Must be a rigid box made of metal or other material that can stand the weight of ACM.

2. Box must have a hole at base of box for waste disposal.

3. Must have a negative pressure generator and a second generator on site as a back-up.

**Water Spray Process System**

1. Can only be used on cold pipe which must be surrounded on three (3) sides by a rigid frame.

2. Must have 360 degrees high pressure water spray that forms an aerosol around the pipe to make a barrier between the worker and ACM.
3. System must warm-up for ten minutes and be operated by at least three (3) persons.

4. Workers must have an additional 40 hours of training to operate the machine.

**Mini-Enclosure**

1. Can be used if the work will be completely enclosed by the enclosure.

2. Must be constructed to accommodate no more than two (2) workers.

3. Must be constructed of six (6) millimeter plastic or equivalent and placed under negative pressure by means of a HEPA vacuum.

4. Must be inspected and smoke tested before each shift.

**Alternative Control Methods**

1. Must enclose, contain, or isolate the source of ACM from breathing zone of the worker.

2. A Certified Industrial Hygienist or a Licensed Engineer trained as a project designer must certify in writing that the plan is adequate to reduce employee exposure below the PEL under worst conditions. Also, control methods must keep levels of asbestos outside the perimeter equal to or less than 0.01 fibers/cubic centimeters; therefore, appropriate monitoring must take place outside of the barricaded area.

3. Before conducting work involving more than 25 linear feet or 10 square feet, the evaluation and certification must be sent to the OSHA's National Office of Technical Support.

**Respiratory Protection**

1. Required for all work where employees are exposed above the PEL or excursion limit.

2. Unless a negative exposure assessment has been demonstrated, the employer must provide a full facepiece supplied-air respirator operator in the pressure demand mode equipped with an auxiliary positive pressure self-contained breathing apparatus (SCBA) or a HEPA egress cartridge.
Protective Clothing

1. Required for all work where employees are exposed above the PEL or excursion limit.

2. Required for all asbestos jobs if a negative exposure assessment has not been done for any employee performing Class I work activities which involve the removal of more than 25 linear or 10 square feet of thermal system insulation or surfacing ACM or PACM.

Hygiene Facilities and Practices

These facilities and practices are based on whether the amount of ACM to be removed is less than or greater than 25 linear feet or 10 square feet.

**Greater Than 25 Linear Feet or 10 Square Feet**

For Class I work activities which involve the removal of more than 25 linear or 10 square feet of thermal system insulation or surfacing ACM or PACM, a decontamination area consisting of an equipment room, shower area, and a clean room in series will be required.

Workers must enter and exit the regulated area through the decontamination area. Specific procedures must be followed for entry and exit from the regulated areas.

Separate lunch areas must be provided for employees.

**Less than 25 Linear Feet Or 10 Square Feet**

For Class I work activities which involve the removal of less than 25 linear feet or 10 square feet of thermal system insulating or surfacing ACM or PACM, the employer must establish an equipment room or area adjacent to the regulated area for decontamination of employees and equipment.

The decontamination area must have a plastic drop cloth on floor or horizontal working surfaces and be large enough to accommodate the workers and their equipment.

Employee Information and Training

Training must be the equivalent in curriculum, training method, and length to the EPA Model Accreditation Plan (MAP) for asbestos workers. If workers were not AHERA trained prior to April 4, 1994, they will be required to attend 32-hours of class room instruction with 14-hours of hands-on training and an annual 8-hour refresher. (See 40 CFR Part 763, Subpart E Appendix C).
CLASS II

Class II work is defined as asbestos work activities involving the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics. This work activity does not include work involving thermal insulation or surfacing material.

Exposure Assessment

A Competent Person must conduct an exposure assessment immediately before or at the initiation of the operations to determine the expected exposures to employees.

Each employer is required to conduct daily monitoring that is representative of each employee assigned to work within a regulated area.

Engineering Controls and Work Practices

All Class II work and asbestos removal must be supervised by a Competent Person, and the following work practices shall be used:

- Vacuum cleaners equipped with HEPA filters to collect ACM debris and dust.
- Cutting, abrading, or breaking of the material is prohibited unless the employer can show that other methods less likely to result in asbestos fiber release cannot be used.
- Wet methods or wetting agents, to control employee exposure.
- The material must be removed in an intact state unless it is not possible.
- Material must be immediately bagged or kept wet until transferred to a closed container before the end of the shift.
- Prompt clean-up and disposal of waste and contaminated waste in seal containers.

Indoor Class II Removal

If a negative exposure assessment has not been done, if changes in the job conditions may result in exposures above the PEL, or if the ACM will not be removed substantially intact, one of the following engineering control methods must be used:

- Critical barriers placed over all openings to the regulated area.
Use of another barrier or isolation method that prevents migration of airborne asbestos from the regulated area. This must be verified by area or clearance monitoring of less than or equal to 0.01 fibers/cubic centimeter.

Impermeable drop cloths must be placed below all removal activities.

Use control methods from Class I work, except that glove bags or glove boxes must fully enclose the Class II material.

**Removal of Vinyl and Asphalt Flooring Material**

The following procedures must be used for removal of ACM floor tile or floor tile in buildings constructed before 1981 that have not been verified through bulk sampling and analysis:

- Flooring or backing must not be sanded.
- Vacuums equipped with filter, dust bag, and metal floor tool (not brush) must be used to clean floors.
- Wet methods must be used during cutting, delamination, and scrapping of glue or backing from floor tile. If heat is used and floor tile is removed intact, wetting is omitted.
- Rip-up of resilient sheeting floor material or dry sweeping is prohibited.
- Tiles must be removed intact unless this is shown to be impossible.
- Mechanical chipping must be performed in a negative pressure enclosure.
- Resilient flooring material including mastic and backing will be assumed as ACM unless an Industrial Hygienist or Certified Industrial Hygienist determines it is asbestos-free through recognized analytical methods.

**Removal of Roofing Material**

The following procedures must be used when removing roofing material which contains ACM:

- Roofing level heating and ventilation air intake must be isolated or the ventilation system must be shut down.
- Roofing material must be removed intact and wet methods must be used to the extent feasible.
Cutting machines must be continually misted unless a Competent Person determines it will substantially decrease worker safety.

All loose dust left by sawing must be HEPA vacuumed immediately.

Unwrapped and unbagged material must be lowered to ground by air-tight chute, crane, hoist, or placed in an impermeable waste bag, or wrapped in a plastic sheet, and lowered to the ground before the end of the work shift.

Unwrapped roofing materials when lowered must be placed in a closed receptacle in a manner that does not cause dispersion of airborne asbestos dust.

Removal of Transit Siding, Shingles, and Panels

The following procedures must be used when removing transit components:

- Cutting, abrading, or breaking of the material is prohibited unless the employer can show that other methods less likely to result in asbestos fiber release cannot be used.
- All material must be sprayed with amended water before removal. It is also good practice to have the area continuously sprayed.
- Nails holding material in place must be cut with flat, sharp instruments.

Removal of ACM Gaskets

The following procedures must be used when removing gaskets containing ACM:

- If a gasket is visibly deteriorated and unlikely to be removed intact, removal must be done within a glove bag as described in Class I work activities.
- All materials must be sprayed with amended water before removal and all scrapping of residue must be done wet.
- Wet gaskets must be placed in a disposal container.

Alternative Control Methods

If a modified or different method is used the following must be done:

- A representative employee exposure sample measured using the revised control methods must show that the PEL will not be exceeded under any anticipated circumstances.
A Competent Person must certify in writing that the plan is adequate to reduce employee exposure below the PEL under worst conditions and that the methods meet the requirements of the OSHA standard. The evaluation must be based on the employee exposure results that closely resemble the results obtained with similar trained employees performing the method.

**Respiratory Protection**

Respiratory protection is required as follows:

- Required for all work where employees are exposed above the PEL or excursion limit.
- Where ACM is not removed in its original shape and form.
- When work is not performed using wet methods.
- For asbestos jobs where a negative exposure assessment has not been done.

**Protective Clothing**

Protective clothing such as coveralls or similar whole-body clothing, head covers, gloves, and foot coverings are required for any employee exposed to airborne concentrations that exceed the PEL or the short-term exposure limit (STEL).

**Hygiene Facilities and Practices**

The following are required for Class II work operations where exposures exceed the PEL or where a negative exposure assessment is not produced before the start of the operation.

- The employer must establish an equipment room or area that is adjacent to the regulated area for decontamination of employees and equipment.
- The decontamination area must have a plastic drop cloth on floor or horizontal working spaces and be large enough to accommodate the workers and their equipment.
- Workers must enter and exit the regulated area through the equipment room.
- Work clothing must be cleaned with a HEPA vacuum before it is removed.
- All surfaces of equipment and containers filled with ACM must be cleaned before removal from the equipment room or area.
Employee Information and Training

Training must be the equivalent in curriculum, training method, and length to the EPA Model Accreditation Plan (MAP) for asbestos workers. If workers were not AHERA trained prior to April 4, 1994, they will be required to attend 32-hours of classroom instruction with 14-hours of hands-on training and an annual 8-hour refresher. (See 40 CFR Part 763, Subpart E Appendix C)

For work that involves only the removal or disturbance of one type of ACM under Class II, workers must be trained in the requirements of the standard and such training will include hands-on training and shall take at least 8-hours.

CLASS III

Class III asbestos work is defined as repair and maintenance activities, where ACM (including thermal system insulation and surfacing material) is likely to be distributed.

Exposure Assessment

Each employer is required to conduct an initial exposure assessment for work or workplace operations covered by the asbestos standard. The exposure assessment must be done by a Competent Person before or at the start of the operation.

Periodic monitoring must be conducted on all work where exposures are expected to exceed the PEL and at intervals sufficient to document the validity of the exposure prediction, or daily monitoring that is representative of each employee assigned to work within a regulated area is required.

Engineering Controls and Work Practices

The following work practices and engineering controls must be used to minimize employee exposure:

- Vacuum cleaners equipped with HEPA filters to collect ACM debris and dust.
- Wet methods or wetting agents, to control employee exposure.
- Prompt clean-up and disposal of waste and contaminated waste in sealed containers.
- Where feasible, local exhaust ventilation must be used to perform work.
Impermeable drop cloths, glove bags, or mini-enclosures must be used where the disturbance of ACM involves drilling, cutting, abrading, sanding, chipping, breaking, sawing, or the disturbance of thermal system insulation or surfacing material.

Impermeable drop cloths and plastic barriers or their equivalent, or Class I control methods must be used to isolate the operations where the employer has not conducted a negative exposure assessment for a job, or where exposure data shows that the PEL has been exceeded.

**Respiratory Protection**

Respiratory protection is required as follows:

- Required for all work where employees are exposed to the PEL or excursion limit.
- All work performed within a regulated area where employees performing other work are required to wear respirators.
- Work which involves the disturbance of thermal system insulation or surfacing material or where the employer has not conducted a negative exposure assessment.

**Protective Clothing**

Protective clothing such as coveralls or similar whole-body clothing, head covers, gloves, and foot coverings are required for any employee exposed to airborne concentrations that exceed the PEL or the STEL.

**Hygiene Facilities and Practices**

The following is required for Class III work operations where exposures exceed the PEL or where a negative exposure assessment is not conducted before start of the operation.

- The employer must establish an equipment room or area that is adjacent to the regulated area for decontamination of employees and equipment.
- The decontamination area must have a plastic drop cloth on floor or horizontal working spaces and be large enough to accommodate workers and their equipment.
- Workers must enter and exit the regulated area through the equipment room.
Work clothing must be cleaned with a HEPA vacuum before it is removed.

All surfaces of equipment and containers filled with ACM must be cleaned before removal from the equipment room or area.

**Employee Information and Training**

Training must be equivalent in curriculum and training method to the awareness training course developed by EPA for maintenance and custodial workers who conduct activities that may result in the disturbance of ACM. (See 40 CFR 763.92 (a)(2)) Course shall include hands-on training and shall take at least 16-hours.

**CLASS IV**

Class IV work is defined as maintenance and custodial activities during which employees contact ACM and PACM and activities to clean up waste and debris containing ACM and PACM.

**Exposure Assessment**

Each employer is required to conduct an initial exposure assessment for work or workplace operations covered by the asbestos standard. The exposure assessment must be done by a Competent Person before or at the start of the operation.

Periodic monitoring must be conducted on all work where exposures are expected to exceed a PEL and at intervals sufficient to document the validity of the exposure prediction.

**Engineering Controls and Work Practices**

The following work practices and engineering controls must be used to minimize the exposure to employees:

- Vacuum cleaners equipped with HEPA filters to collect ACM debris and dust.
- Wet methods or wetting agents, to control employee exposure.
- Prompt clean-up and disposal of waste and contaminated waste in sealed containers.

**Protective Clothing**

Protective clothing such as coveralls or similar whole-body clothing, head covers, gloves, and foot coverings are required for any employee exposed to airborne concentrations that exceed the PEL or the STEL.
Hygiene Facilities and Practices

For Class IV work operations performed in regulated area, workers must follow hygiene practices of the higher classification in the work area. Class II decontamination facilities must be used for clean up of debris, thermal insulation, or surfacing ACM or PACM material.

Employee Information and Training

Training must be equivalent in curriculum and training method to the awareness training course developed by EPA for maintenance and custodial workers who conduct work in buildings containing asbestos. The course must give information on the location of asbestos containing material in the building and must be at least two (2) hours in length.

MULTI-EMPLOYER WORK SITE

Employers performing work requiring the establishment of a regulated area shall inform other employers on the site of the following:

- The nature of the employer's work with asbestos and/or PACM.
- The existence of and requirements pertaining to regulated areas.
- The measures taken to ensure that employees of other employers are not exposed to asbestos.

Employers Working Adjacent to Regulated Areas

Employers working adjacent to asbestos regulated areas must comply with the requirements of this standard to protect their employees. For example, if the employees of an employer working next to a Class I asbestos job are exposed to asbestos, the employer must move employees or conduct an initial exposure assessment. In addition, employers must take steps to ensure the integrity of the enclosure of the regulated area and/or rely on the asbestos contractor to accomplish this task.

General Contractors

Even though General Contractors may not be qualified as Competent Persons, they must determine whether the asbestos contractor is in compliance with the standard and shall require that such contractor come into compliance with the standard when necessary.
This procedure sets forth the guidelines necessary to ensure the safety and health of personnel and protection of equipment when entrance into confined spaces is required through the proper preparation of equipment, establishment of necessary precautions prior to entry, and the monitoring of conditions throughout the job sequence.

Vessel entry or entry into a confined space is a potentially hazardous act and must receive careful and thoughtful consideration. To assure that this consideration is given to each entry, a confined space entry permit may be required from both the client and the Safety Department.

The hazards from which employees must be protected and the required clothing or equipment for this protection will depend upon the condition of the vessel or confined space.

Definitions

Confined Space - Enclosures having limited means of egress such as, but not limited to, storage tanks, tank cars, process vessels, bins, boilers, column skirts, and other tank-like compartments; open-topped spaces more than four feet (4') in depth such as pits or floating roof tanks; ventilation or exhaust ducts, sewers, underground utility tunnels, and similar structures.

Entry - Physical entry is defined as the insertion of the head or any part of the body into a confined space.

Maintenance - The group responsible for performing the work. (Note: This includes utility mechanics and construction personnel).

Operating - As used herein, the word "operating" refers to the group responsible for the equipment or area where the confined space entry is to be performed.

Responsibilities

1. Accountability for the execution of this procedure rests with the superintendent who has the responsibility for the equipment being worked on.

2. Operating First Line Supervisors are responsible to ensure that preparations are complete and that the precautions are in place prior to a confined space entry.

3. Preparing and approving a vessel entry permit: Construction personnel will sign off on an approved vessel confined space entry permit prior to employees working in the vessel.
Section 23: Entry Into Vessels and Confined Spaces

Procedures

1. **Vessel Entry**
   a. Vessels are to be emptied, cleaned, purged, and ventilated.

   - There is no single practice that can assure a safe atmosphere in a vessel. The Construction Superintendent is responsible for specifying the purging, cleaning, and ventilating method to be used, but the following is considered a general recommendation:

     **Step 1**
     Discharge liquids or solids from the equipment. Pump/drain out as much sludge, sediment, residues, solids, and/or liquids as possible.

     **Step 2**
     If the material last stored in the vessel will not react with water, flush with water and if necessary, fill with water and boil. Be sure of adequate venting capacity.

     **Step 3**
     Purge with inert gas if the equipment has contained flammable material by introducing the gas at the top and removing from the bottom, if the equipment that contained the gas is heavier than the purging gas. Reverse the process if the equipment contained gas lighter than the purging gas.

     **Step 4**
     Provide air ventilation with grounded approved air-moving equipment. Air-moving equipment should exhaust and not feed to the vessel. Air should be admitted into the vessel near the bottom and removed at the top. Care is to be taken that the intake air is free of vapors. Even though many vapors are heavier than air, it is essential to remove them at a point where there will be a maximum diffusion and the least chance of flammable gases pocketing near a possible source of ignition. Blower motors must be explosion proof when used in hazardous areas.

   b. All power and energy sources shall be physically disconnected at the immediate site of the entry if they present a life threatening risk. This includes lifting power wiring leads (not just removing fuses or closing a breaker) and disconnecting piping on pneumatically driven equipment. Physical immobilization shall be performed when necessary to prevent movement. This may involve chaining, blocking, pinning, or physically disconnecting to prevent movement.
c. Connections to vessels are to be isolated at their nearest points to the vessel by blanking, blind flanging, disconnecting, or capping and must be able to withstand upstream pressures and to keep out foreign materials. Instrument leads and pressure regulating stations are not to be overlooked.

d. Any radiation sources are to be placed in their safe/off positions. The Radiation Protection Officer must be called to conduct a measurement of stray radiation.

e. No person will ever enter a vessel, regardless of equipment used, that contains a combustible/explosive atmosphere (when the test for combustibles exceeds 10% LED).

f. All initial testing specified on the permit must be completed, initial safe test result logged, and meet minimum requirements prior to entry. Re-testing indicated on the permit must be performed as specified and after breaks or shift changes.

g. Supplied-air hose line respirators or self-contained breathing apparatus will be provided nearby even though the atmosphere in the confined space is safe and free of toxic material. If supplied-air breathing cylinders are used, each cylinder will be checked to ensure that 19.5 to 23% oxygen is contained in the cylinder and the results recorded on a tag to be attached to the cylinder.

If the confined space atmosphere changes while work is being performed to an oxygen content below 19.5%, greater than 23%, or the combustibles exceed 10% LED, the work is to be stopped and all persons inside the vessel are to exit until a safe condition can be restored. There shall be no re-entry into an atmosphere in which combustibles exceed 10% LED or oxygen content exceeds 23%. Re-entry into oxygen deficient atmospheres requires prior authorization and respiratory equipment.

h. Only grounded 12 volt (max.) lighting sources are to be used in vessels with the transformer kept outside the vessel. Flashlights, mine safety lights, etc. of less than 12 volts are approved for use if the area is acceptable through testing of the atmosphere.
i. Harnesses are to be used on persons entering the confined space. Lifelines will normally be attached. Only in those cases where it is agreed by those persons authorizing the permit that greater safety for the individual is served by leaving the lifeline unattached (but nearby) will lifelines be allowed to remain unattached.

j. A Qualified Attendant will be at the opening with a pre-arranged means or procedure to communicate with persons in the vessel.

k. A proven tested means shall be provided to remove employees from fixed vessels with top entry and other entries where personnel removal is significantly hindered. A "Manhole Safety Davit" is recommended, but other mechanical hoisting mechanisms are acceptable.

l. Warning signs will be placed in the area of confined space to indicate an entry is in progress.

m. All compressed gas/oxygen cylinders, except breathing containers, are to be located outside the confined space. All hoses from compressed gas cylinders that will extend into the confined space should be inspected prior to use for signs of fraying or other damage that could result in leakage of compressed gas or oxygen into the confined space during such use.

n. A Confined Space Permit is to be completed for each vessel that will be entered. Supervisors of the employees entering a confined space shall review the preparations and precautions with them prior to their initial entry. A copy of the vessel isolation sketch or list shall be attached to the permit.

2. Confined Space Entry Other Than Vessels

a. Supervisors of the employees entering a confined space shall review the preparations, precautions, and any other pertinent information in the permit with them prior to their initial entry.

b. All power and energy sources shall be physically disconnected at the immediate site of the entry if they present a life threatening risk. This includes lifting power wiring leads (not just removing fuses or closing a breaker) and disconnecting piping on pneumatically driven equipment. Physical immobilization shall be performed when necessary to prevent movement. This may involve chaining, blocking, pinning, or physically disconnecting to prevent movement.
c. All testing shall be completed and must meet minimum standards for combustibles, oxygen, toxic materials, maximum ambient temperature of 95 degrees Fahrenheit unless methods are taken to reduce heat stress, i.e. work-rest regimentation, cooling vest, etc., and/or other tests specified on the Confined Space Permit. Initial safe test result shall be logged on the permit prior to entry.

d. Harnesses are to be on persons entering the confined space. Lifelines will normally be attached. Only in those cases where it is agreed by those persons authorizing the permit that greater safety for the individual is served by leaving the lifeline unattached (but nearby) will lifelines be allowed to remain unattached.

e. A Qualified Attendant will be at the opening with a pre-arranged means or procedure to communicate with persons in the confined space.

f. Warning signs will be placed at the entry location.

g. All compressed gas/oxygen cylinders except breathing containers, are to be located outside the confined space. All hoses from compressed gas cylinders that will extend into the confined space shall be inspected prior to use for signs of fraying or other damage that could result in leakage of compressed gas or oxygen into the confined space during such use.

h. No person shall enter a confined space, regardless of equipment used, that contains a combustible/explosive atmosphere (when the test for combustible exceeds 10% LED).

i. When trenches or openings are created while preparing for or performing work on the job, the area around them shall be barricaded. The circumstances must be considered in deciding what type of barricade is sufficient.

j. Other applicable Department/Client Rules and Procedures shall be followed.

k. Refer to the attached generic vessel/confined space entry permit for other precautions and preparations.
FIGURES
ATTACHMENTS
# Confined Space Entry Permit

## General Information

### Description of the Confined Space

<table>
<thead>
<tr>
<th>Date Issued</th>
<th>Time Issued</th>
<th>Date Expires</th>
<th>Time Expires</th>
</tr>
</thead>
</table>

### Entry Supervisor

### Attendant(s)

**Communication Between Attendant(s) - Entrants:**
- [ ] Voice
- [ ] Sight
- [ ] Radio
- [ ] Other

### Description of Work

### Checklist for Isolation and Unauthorized Access Prevention

<table>
<thead>
<tr>
<th>External Barrier(s) in Place</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>Initial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Lockout/Tagout</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical Lockout/Tagout</td>
<td></td>
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<td></td>
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<tr>
<td>Lines/Pipes Encased</td>
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<tr>
<td>Lines/Pipes Blocked</td>
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<tr>
<td>Lines/Pipes Blocked</td>
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<tr>
<td>Hot Work Permit</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Warning Signs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
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</tbody>
</table>

**Report Any Unauthorized Entry To:**

Safety Department and Project Management

<table>
<thead>
<tr>
<th>Phone No.</th>
<th>Radio No.</th>
<th>Pager No.</th>
</tr>
</thead>
</table>

### Pre-Entry Checklist

#### Purging, Inserting, or Flushing

- [ ] Yes
- [ ] No
- [ ] N/A

- [ ] Nitrogen
- [ ] Steam
- [ ] Water
- [x] Other (Specify):

#### Mechanical Ventilation

- [ ] Fresh Air Injection
- [ ] General (eg, fans)
- [ ] Local Exhaust

- [ ] Initial
- [ ] Continuous
- [ ] Partial

<table>
<thead>
<tr>
<th>Description</th>
<th>Initial</th>
<th>Continuous</th>
<th>Partial</th>
</tr>
</thead>
</table>

### Specific Hazardous Tasks

Certain tasks performed in confined spaces greatly increase the risks to entrants. Check all tasks to be performed.

- [ ] Welding/Grinding
- [ ] Thermal Cutting
- [ ] Soldering/Brazing
- [ ] Electrical
- [ ] Other, Explain:

- [ ] Painting or Cleaning with Solvents
- [ ] Cleaning/Sweeping/Vacuuming
- [ ] Scraping/Removing Residue
- [ ] Chemical Use

---

**Safety Reference Manual** 23-7 (01/08/03)
CONFINED SPACE ENTRY PERMIT

INITIAL ATMOSPHERIC TEST PERFORMED

CAUTION: Toxic or flammable gases or vapors may stratify in the confined space. Be sure to test at various levels and locations within the confined space. Always check the oxygen content first.

<table>
<thead>
<tr>
<th>HAZARD TESTED</th>
<th>ACCEPTABLE RANGE</th>
<th>READING</th>
<th>DATE AND TIME</th>
<th>TESTER INITIALS</th>
<th>ACCEPTABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Oxygen</td>
<td>19.5–23%</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% LEL</td>
<td>10% or Less</td>
<td>%</td>
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<tr>
<td>PEL=</td>
<td>PPM=</td>
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<td>PEL=</td>
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<td>PEL=</td>
<td>PPM=</td>
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</tbody>
</table>

RESCUE PROCEDURE

PLAN DESCRIPTION:


ON-SITE RESCUE CONTACTS

<table>
<thead>
<tr>
<th>PHONE NUMBER</th>
<th>RADIO NUMBER</th>
<th>PAGER NUMBER</th>
<th>OUTSIDE SOURCES AND PHONE</th>
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<tbody>
<tr>
<td></td>
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<td>FIRE DEPARTMENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>AMBULANCE</td>
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<td></td>
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<td></td>
<td>HOSPITAL</td>
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<td></td>
<td>OTHER</td>
</tr>
</tbody>
</table>

SPECIAL EQUIPMENT NEEDED

☐ RESPIRATORS (Type)________
☐ SAFETY HARNESS/WRISTLETS
☐ LIFELINES
☐ HOISTING APPARATUS
☐ VENTILATION EQUIPMENT
☐ TEMPORARY LIGHTING (Type)
☐ NON-Sparking TOOLS
☐ PROTECTIVE CLOTHING
☐ OTHER:____________________

ENTRY SUPERVISOR'S SIGNATURE | DATE | PERMIT ISSUER SIGNATURE | DATE


(01/08/03)
<table>
<thead>
<tr>
<th>TIME</th>
<th>ATMOSPHERICCONDITION</th>
<th>ACCEPTABLE RANGE OF HAZARDOUS</th>
<th>ACCEPTABLE RANGE OF HARMFUL</th>
<th>ACCEPTABLE RANGE OF IRRITANT</th>
<th>ACCEPTABLE RANGE OF ODOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Oxygen Content (%) 3% O2</td>
<td>19.5% - 23%</td>
<td>0% - 10%</td>
<td>PEL = ppm</td>
<td>ppm</td>
</tr>
<tr>
<td>Time</td>
<td>Combustible Gas (%) LEL</td>
<td>0% - 15%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initials</td>
<td>Other (Specify)</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

| Date | Oxygen Content (%) 3% O2 | 19.5% - 23% | 0% - 10% | PEL = ppm | ppm |
| Time | Combustible Gas (%) LEL | 0% - 15% | | | |
| Initials | Other (Specify) | | | | |
The purpose of this policy is to establish guidelines concerning drugs of abuse and alcohol in the workplace and to maintain a work environment that is safe for employees and conducive to high work standards.

Substance abuse is a serious workplace problem. The National Institute on Drug Abuse reports that approximately 68 percent of all illegal drug users are employed either full or part time. The National Institute on Alcohol Abuse reports that nearly one in every ten people in the country has an alcohol problem. According to experts, up to half of all injuries can be traced to drugs and alcohol. Studies have shown that compared to alcohol and drug-free workers, substance abusers:

1) Are far less productive.
2) Miss more workdays.
3) Are more likely to injure themselves or someone else.
4) File more workers' compensation claims.

Policy

The use or possession of unauthorized drugs, alcoholic beverages, or inhalants and/or being under the influence of these drugs or alcoholic beverages is prohibited on any Company work location, including project sites. Employees at a Company work location are also prohibited from having a measurable presence of drugs or alcoholic beverages in their body as determined by a urine or blood test. Prohibited drugs include, among others, marijuana, hashish, cocaine, hallucinogens, depressants, inhalants, and stimulants not prescribed for current personal treatment by a licensed physician.

Entry into any Company work location, including project sites, offices, vehicles, vessels, and aircraft is conditional on the Company's right to search the entrant and his or her personal effects and vehicle for prohibited drugs and paraphernalia, alcoholic beverages, or possession of unauthorized property or equipment.

Authorized Company representatives may make periodic and unannounced searches of any Company work location or anyone entering a work location. Work locations may include project sites, vehicles, vessels, aircraft, offices, rooms, and lockers. Such searches can be made of Company employees as well as employees of contractors doing business with the Company.

The Company may employ drug and alcohol testing programs at any Company location. Positive test results indicating the presence of a prohibited substance in an employee's urine or blood will be considered sufficient evidence to establish a violation of this Company policy and may result in disciplinary action against current employees or preclude an applicant from employment.

Violation of Company policy or refusal to submit to a search or a drug or alcohol test will be cause for disciplinary action, including immediate termination of employment.
Procedure

The Company's Substance Abuse Program is administered by the personnel department. This office shall issue procedures for the implementation of this policy including procedures for searching employees and their personal effects while on Company property and procedures and forms for the administration of the testing program.

Employee Confidentiality

Information generated in association with the drug/alcohol testing program is inherently sensitive and will be treated as confidential. In implementing this policy, care should be taken to:

- Conduct all investigations, searches, and testing as privately as is practicable.
- Limit the number of management personnel involved in such tests, searches, and investigations. Information should be limited to the person responsible for employment and/or project manager, supervisor, and/or safety office.
- Caution management personnel not to communicate confidential information about such searches or investigations or about the results of drug tests to persons not authorized to receive it, including family members, friends, etc.
- Limit written memos and limit their distribution.
- Keep drug/alcohol test results separate from personnel files.

Policy Statement Acknowledgement

As a result of the drug and alcohol policy, all company employees will have been notified of the policy and of the drug/alcohol testing program. Prior to implementation of the testing program, the Company work location will assure that the employees are aware of the current drug and alcohol policy and testing program.

The Company Substance Abuse Policy will be posted on bulletin boards, in employment offices, and in other conspicuous locations for employee notification.

Where drug/alcohol testing is to be performed, all incumbent and new employees will be informed about the policy and will sign the policy statement. This form will be part of the individual's permanent personnel record to document the individual's notification. If the individual refuses to sign, the statement will be read to him/her and signed by a witness before filing. (Attachment 24-A).
The notice of the Company's Substance Abuse Policy must be posted on bulletin boards, and in other conspicuous locations for employee notification. (Attachment 24-B). Warning signs will also be posted at all jobsite entrances describing the substance abuse polices (Attachment 24-C).

**Supervisors' Training Program**

The Supervisors' Training Program will be company-wide.

Project supervisory and other selected personnel will have completed the training program prior to implementation of a substance abuse testing program. The training program is the responsibility of the location and will consist of the following curriculum:

- Drugs of Abuse Awareness
- Company Policy Review
- Drug/Alcohol Testing
- Supervisors' Responsibility and Handling of Cases
- Drug/Alcohol/Contraband Search Procedure

**Pre-Employment Drug Testing**

Pre-employment drug testing will be conducted on all applicants companywide.

The "Substance Abuse" policy, will be conspicuously posted at the employment office and/or where applicants are processed for employment.

Notice will be given to job applicants, along with the job application, that testing will be conducted as a condition of employment. The applicant, upon signing the Policy Acknowledgment, authorizes the drug test.

The drug test will be taken immediately prior to the pre-employment physical examination or prior to assignment if no physical examination is required. If any substance is found to have been added to the specimen, that will be considered as evidence of failure to cooperate and will preclude employment or result in termination if hired conditionally.

Urine tests will be conducted using the designated laboratory. The results will be confidentially transmitted to the personnel office and/or designated person responsible for hiring.
In locations where laboratory testing is utilized, if conditions require immediate employment, the employee may be conditionally assigned to work pending results of the drug test, with the understanding that failure to pass such test will terminate such employment. If the test is positive, the person will be confidentially notified of the results.

Pre-Employment Collection Procedure

1. Print date, time, applicant's name, and specimen collector's (technician) name on container label.

2. Complete the Chain of Custody form, except for signatures.

3. Give applicant a specimen vial and proceed to the restroom.

4. Have applicant void into the specimen vial, with collector witnessing the voiding.

5. If applicant is accompanied by an opposite sex specimen collector, search restroom prior to applicant entering. Have applicant remove coats, caps, etc. Do not let applicant carry bags, purses, etc. into restroom. Applicant will be permitted to provide a specimen without collector present.

6. Have applicant seal the urine container with evidence tape and initial the tape.

7. Verify applicant's name, date, and time on container label.

8. Place label around the container of urine.

9. Verify applicant's name, social security number, and medication questions on the Chain of Custody form.

10. Have applicant, along with a witness (the specimen collector), sign the Chain of Custody form.

11. Attach the Chain of Custody form to the urine container with a rubber band and place into the prepaid, self-addressed envelope or box. If using an envelope, after it is sealed, have the applicant and witness sign across the sealing edge of the envelope.

12. If there is to be a delay in sending specimen to the laboratory, refrigerate overnight. Do not delay shipment more than 24 hours after collection.

13. If the envelopes are to be sent to the laboratory by U.S. mail, the collector will deposit the envelopes into the mail.
14. If specimens are to be sent to the laboratory by a courier service:
   a. The collector must roll up the envelope and secure with a rubber band.
   b. Place all envelopes into courier package.
   c. Fill out courier mailing label.
   d. Have courier pick up package from collector.

   NOTE: Some courier services will not accept biological specimens, or they may have specific guidelines for their packaging. Check with your local courier.

**Random and Group Drug Testing**

The intent of random and group drug testing is to enforce the company's Substance Abuse Policy.

When random testing is utilized, the selection of jobsite employees will be based on a TRUE random selection. Ten percent random selection of the work force is suggested, but could include up to one hundred percent if necessary.

Once the selection has been determined, the concerned division will coordinate the procedure through Corporate Safety to ensure the testing is in accordance with the Substance Abuse Program.

Management will be requested to send no more than two employees at a time to the collection area. At the collection area, the employee will be asked if he/she is familiar with the Substance Abuse Policy. The employee will be asked if he/she has any objection to submitting a urine specimen. Ascertain that a written and signed consent form from the employee to be tested is on file. If there is not one on file, obtain one before testing.

An employee has a right to refuse, but a refusal is in fact a failure to cooperate with an ongoing policy and will result in immediate termination.

An employee who refuses to submit to a random drug test must be advised of the company's Employee Assistance Program (EAP) and must enroll in a rehabilitation program approved by the EAP if they want to be considered for rehire.

**Random Collection Procedures**

1. Print date, time, employee's name, and specimen collector's (technician) name on container label.
2. Complete the Chain of Custody form, except for signatures.

3. Give employee the specimen vial and proceed to the restroom.

4. Have employee void into the specimen vial, with collector witnessing to the voiding.

5. If employee is accompanied by an opposite sex specimen collector, search restroom prior to entering. Have employee remove coats, caps, etc. Do not let employee carry bags, purses, etc. into the restroom. Employee will be permitted to provide a specimen without collector present.

6. Have employee seal the urine container with evidence tape and initial the tape.

7. Verify employee's name, date, and time on container label.

8. Place label around the container of urine.

9. Verify employee's name, social security number, and medication questions on the Chain of Custody form.

10. Have employee, along with a witness (the specimen collector), sign the Chain of Custody form.

11. Attach the Chain of Custody to the urine container with a rubber band and place into the prepaid, self-addressed envelope or box. If using an envelope, after it is sealed, have the employee and witness sign across the sealing edge of the envelope.

12. If there is to be a delay in sending the specimens to the laboratory, refrigerate overnight. Do not delay shipment more than 24 hours after collection.

13. If the envelopes are to be sent to the laboratory by U.S. mail, the collector will deposit the envelopes into the mail.

14. If specimens are to be sent to the laboratory by a courier service:
   a. The collector must roll up the envelope and secure with a rubber band.
   b. Place all envelopes into courier package.
   c. Fill out courier mailing label.
Accidents - Drug and Alcohol Testing

Any employee who experiences an on-the-job injury requiring medical attention by a physician must be tested for both drugs and alcohol when experiencing on-the-job injuries requiring medical attention by a physician.

Exception: State law or conditions and client/contract prohibition.

NOTE: Any exception must be approved by the Safety Department.

Employees involved in non-injury accidental mishaps resulting from their actions or lack of action will be tested for drugs only.

Verify that a written and signed consent form has been obtained from the employee to be tested. Physicians may require their own consent form to be signed before obtaining a specimen from the employee.

Contact must be made with all physicians and medical facilities that treat company employees. Jobsite personnel must make personal contact with physicians and medical facilities and follow up with a written explanation of the drug and alcohol testing procedures.

Testing for accidents will be performed only by a designated laboratory. A urine specimen and a blood specimen must be collected by the medical facility and sent to the laboratory. It is unacceptable for the medical facility to run the test(s).

An employee has a right to refuse to submit to a drug and/or alcohol testing examination, but a refusal is in fact a failure to cooperate with an ongoing policy and will result in immediate termination.

Accidents - Collection Procedures

1. One specimen vial of urine and one specimen vial of blood must be collected. One Chain of Custody form must be completed.

2. Print date, time, his/her name, and specimen collector’s name (technician) on container label.

3. Complete the Chain of Custody form, except for signatures.
4. Give him/her a specimen vial and proceed to the restroom.

5. Have him/her void into the specimen vial, with collector witnessing to the voiding.

6. If employee is accompanied by opposite sex specimen collector, search restroom prior to employee entering. Have employee remove coats, caps, etc. Do not let employee carry bags, purses, etc. into restroom. Employee will be permitted to provide a specimen without collector present.

7. Have him/her seal the urine container with evidence tape and initial the tape.

8. Verify name, date, and time on container label.

9. Place label around the container of urine.

10. Verify name, social security number, and medication questions on the Chain of Custody form.

11. Have employee, along with a witness (the specimen collector), sign the Chain of Custody form.

12. Attach the Chain of Custody to the urine container and the blood container with a rubber band and place into the prepaid, self-addressed envelope or box. If using an envelope, after it is sealed, have the applicant and witness sign across the sealing edge of the envelope.

13. If there is to be a delay in sending specimen to the laboratory, refrigerate overnight. Do not delay shipment more than 24 hours after collection.

14. If the envelope is to be sent to the laboratory by U.S. mail, the collector will deposit the envelope into the mail.

15. If the envelope is to be sent to the laboratory by a courier service:
   a. The collector must roll up the envelope and secure with a rubber band.
   b. Place all envelopes into courier package.
   c. Fill out courier mailing label.
   d. Have courier pick up package from collector.

NOTE: Some courier services will not accept biological specimens, or they may have specific guidelines for their packaging. Check with your local courier.
16. It is unacceptable for the medical facility to run the test(s).

**Search Procedures**

Searches should be conducted only in the presence of two (2) witnesses, one (1) of whom must be management above the supervisor level. If the person to be searched is a female, one (1) of the witnesses should be a female. The security supervisor should be present if assigned to the facility.

Searches should be conducted as privately as possible. Do not make a public display or spectacle of the event. Do not use force.

Ask the person to open carried containers (lunch box, briefcase, or purse) for inspection. Food items should not be touched. Ask the individual to move or rearrange contents to enable the search.

Ask the person to open his/her coat, remove a hat, or lift a pants leg to inspect a boot. Do not touch the person. No one shall be forcibly searched. Ask the person to empty his/her pockets and turn them inside out. Do not touch or "pat" the person to determine pocket contents.

If the employee objects to the search or refuses to cooperate, the employee should be told that submission to such a search is a condition of employment, and failure to cooperate in an ongoing policy will result in disciplinary action, up to and including discharge. If the employee continues to refuse to cooperate, the search should be terminated and the refusal reported to the project/facility manager for appropriate personnel action.

The search should continue of desk, locker, large tool box, etc. If locks must be cut to effect the search, be prepared to replace them immediately following the search and give the key to the employee.

If during the course of a search, an employee is found to be in possession of **illegal drugs or drug paraphernalia**, whether on the person or in the person's vehicle or belongings, he/she shall be terminated.

Any contraband or prohibited item seized will be described in writing and a receipt given to the employee. Seized items, along with a copy of the descriptive receipt, will be turned over to the project/facility manager and may be turned over to the proper law enforcement authorities. Seized contraband should be placed in containers and marked for future identification. Prepare a detailed written report about the incident and obtain written statements from witnesses.
If the employee is suspected of being under the influence of alcohol, drugs or controlled substances, be sure to provide the employee with transportation home. Do not allow the employee to drive himself or herself home.

Both random and special searches may be conducted.

**Random Searches**

Periodic random searches may be conducted of personal articles and vehicles at entrance gates, employee lockers, and company vehicles. Such searches need not involve 100% of the employees.

**Special Searches**

When there is reason to believe by observation of suspicious activities or physical evidence that a single employee or group of employees may be in possession of illegal drugs or alcohol, they may be required, as a condition of employment, to submit to searches of their clothing, personal lockers, company vehicles, purses, lunch boxes, briefcases, or other containers, desks, or personal vehicles (while such vehicles are on company property).

Department of Transportation (D.O.T.) does require in its standards that an employee can be "tested for cause" by observation of another employee and his/her supervisor based on the fact he or she is in a safety sensitive position according to the standard. (Refer to Title 49, Part 40 - Subpart A, B, and C for more information).
FIGURES
ATTACHMENTS
SUBSTANCE ABUSE POLICY

The use or possession of unauthorized drugs or alcoholic beverages, and/or being under the influence of these drugs or alcoholic beverages is prohibited on any Company work location, including project sites. Employees at a Company work location are also prohibited from having a measurable presence of unauthorized drugs or alcoholic beverages in their body as determined by a urine or blood test. Prohibited drugs include, among others, marijuana, hashish, cocaine, hallucinogens, and depressants and stimulants not prescribed for current personal treatment by a licensed physician.

Entry into any Company work location, including project sites, offices, vehicles, vessels, and aircraft, is conditional on the Company’s right to search the entrant and his or her personal effects and vehicle for prohibited drugs and paraphernalia, alcoholic beverages, or possession of unauthorized property or equipment.

Authorized Company representatives may make periodic and unannounced searches of any Company work location or anyone entering a work location. Work locations may include project sites, vehicles, vessels, aircraft, offices, rooms, and lockers. Such searches can be made of Company employees as well as employees of contractors doing business with the Company.

The Company may employ drug and alcohol testing programs at any Company location. Positive test results indicating the presence of a prohibited substance in an employee's urine or blood will be considered sufficient evidence to establish a violation of this Company policy and may result in disciplinary action against current employees or preclude an applicant from employment.

Violation of Company policy or refusal to submit to a search or a drug and alcohol test will be cause for disciplinary action, including immediate termination of employment.

I have read and understand the above policy:

______________________________   ___________________________   _____________
Employee Signature          Social Security Number    Date

CONSENT FOR DRUG AND ALCOHOL TESTING

The use of prohibited drugs and alcohol is a violation of company policy.

As a condition of employment, I give my consent for a blood or urine sample to be collected from me and submitted for a drug and/or alcohol test. Further, I hereby consent to the release of the test results to the company for its use. I understand that any positive result or refusal to submit to testing may terminate or preclude my employment.

Date: ___________________   Employee Name (Print): ____________________________
Social Security Number: ____________________________
Employee Signature: ____________________________
Witness Signature: ____________________________

Attachment 24-A. Substance Abuse Policy Acknowledgement and Testing Consent Form
NOTICE

The use of, possession of, being under the influence of, or the presence in a person's system of illegal Drugs, and/or unauthorized Alcoholic beverages is against Company Policy.

As a condition of employment, you may be required to submit a search or drug and alcohol test.

Violation of Company Policy may be terminated or preclude your employment with the Company.
NO PROHIBITED DRUGS and Drug Paraphernalia, alcoholic beverages, firearms, explosives or weapons are allowed in any office, work location, vehicle or vessel, or facility of ________________________.

As a SAFETY PRECAUTION, entry into or upon any office or work location of ________________________ is conditioned upon the company's right to search the person and personal effects of any entrant for prohibited drugs and drug paraphernalia, alcoholic beverages, firearms, explosives, or weapons.

Searches are made by authorized personnel from time to time without prior announcement.

Attachment 24-C. Notice of Searches for Prohibited Substances
The purpose of the Control of Hazardous Energy Procedure is to protect life and property by establishing controls to prevent inadvertent operation of energized electrical circuits, opening of valves in pipelines containing hazardous materials, operation of power equipment or any other stored energy application.

This procedure covers individual responsibilities for use of lockout/tagout and the proper sequence of events to follow when locking and tagging systems or components that have stored hazardous energy.

**Application**

This procedure shall apply to all Construction personnel and their associated work.

Operating facilities requiring control of hazardous energy by Construction must first be locked and tagged by responsible Operations personnel after which Construction procedures will be followed.

Violation of this procedure, i.e., improper removal of a tag/lock or operating a valve, switch or device to which danger tags are attached is cause for disciplinary action which may include termination.

**Responsibilities**

A. Superintendent/Supervisor shall:

1. Coordinate procurement of danger tags and locks as required by this procedure. Each tag shall be uniquely numbered.

2. Establish and maintain a list of Competent Persons.

3. Issue and log blocks of tags to the supervisors in charge of the work.

4. Assure that all supervisors and trades are properly trained in the requirements and responsibilities of the control of hazardous energy.

B. Front-line Supervisors shall:

1. Ensure that all employees under their supervision fully understand and comply with this procedure.

2. Submit to the Superintendent a list of all authorized personnel within his/her discipline to act as his/her designee if needed.

3. Ensure that tags are correctly filled out.

4. Hang and remove tags and locks and log request forms and tags in the Log Book.
Section 25: Control of Hazardous Energy

5. Review the adequacy of the tagging/locks for the crafts under his supervision by signing the safety tag log and control tag stubs.

6. Check to assure tags and locks are properly installed and blocking is adequate before work proceeds.

C. Requestor (Any Supervisor or Subcontractor Trade) shall:

1. Complete a tagging request form which includes identifying the components and/or boundaries of systems to be isolated and submit request to the Project Superintendent.

2. Coordinate system and isolation activities that affect multi-discipline and/or subcontractors to assure adequate tagging to protect specific areas of work.

3. Verbal request may only be used when just one tag/lock is required and when working voltages are 110 volts or less, PSI less than 100 lbs., no hazardous or radioactive materials are involved and the employees are the sole owner and have full control of the system being worked on.

D. Project Superintendent

If tagged equipment becomes urgently needed for service and the person named on the tag is absent from the site, every effort shall be made to locate him/her or their immediate supervisor. In the event the person or supervisor cannot be located, only the Project Superintendent shall have the authority to sign the tagging release.

Danger Tag Description - Use

1. Only the standard Contractor Danger tags and approved locks shall be used.

2. Danger tags and locks shall be installed by the Supervisor upon receipt of a written request from the superintendent or engineer. Both portions of the tag shall be filled out completely including the name of the responsible superintendent or engineer. Danger tags are then installed on the designated equipment and the stubs shall remain under the control of the Trade Superintendent. All information on the tag should be printed and in ink. Tags shall plainly identify the equipment or circuits being worked on.

3. All tags shall be dated and signed with an employee number shown and securely attached.

4. When a component such as a valve is to remain in a specific position during the work activity, the position of the component shall be written on the tag.
5. All circuits or components shall be properly checked by the appropriate methods to ensure they are in a safe working condition before any work shall start.

6. Separate danger tags and locks are used for each discipline or crew requiring safe working conditions and are to be removed as soon as work is complete.

7. *Danger tags and locks are to be installed and removed only by the Trade Supervisor or his/her designee.*

8. Tags are never to be reused. They must be destroyed after being properly logged and returned by the Trade Supervisor.

9. Alterations to tags are not permitted.

10. Locks and tags required beyond one shift may remain no more than 30 days without approval from the Project Superintendent.

**Padlocks - Must Be Accompanied By a Danger Tag**

1. The use of padlocks will be controlled by the Trade Supervisor and shall be used when there is a potential for danger to personnel, release of hazardous materials, or damage to equipment or other property.

2. When padlocks are used to lock out a particular system or component, they shall be accompanied by a danger tag. After the tag is installed and a lock has been installed, the key will remain in the possession of the Trade Supervisor. Only the responsible Trade Supervisor(s) may install or remove locks. Danger tags used with a lock should indicate that a lock was used with the tag.

3. Push button or butterfly controls may not be used for purposes of lockout.

4. Lines containing hazardous chemicals, acid, volatile liquids, steam and electrical services require locks as well as tags. This includes lines under pressure with a PSI of 100 lbs. or more.

**Sequence of Events for Placing Danger Tags and Locks**

A. The Supervisor or Trade Supervisor(s) shall:

1. Obtain a log number from the Project Superintendent and enter on the request form.

2. List the system or subsystems which will be affected on the request.

3. Write a brief description of the work to be performed on the request, and determine blocking points required for safe working conditions.

4. Obtain the required number of danger tags from the Project Superintendent.
Section 25: Control of Hazardous Energy

(a) Enter the equipment/component and its specific condition on the danger tag on the request form.

(b) Indicate the discipline that the tag is being requested for on the tag.

(c) On the request form, enter in the appropriate tag number with the component and condition.

5. When the necessary information on the tags and tagging request has been completed, the Engineer or Trade Supervisor(s) will sign and date the request in the appropriate block and forward the tags and request to the Project Superintendent.

B. The Project Superintendent or his/her Designee shall:

1. Review the tagging request for completeness and verify that blocking is adequate for the work described.

2. Sign and date the tagging request and install tags and locks.

3. After the equipment/component is in the specified condition, ensure that the safety tag is visible and secured to the equipment or component.

4. Remove the stub and initial and date the tagging request.

5. When tagging is completed, notify the Trade Supervisor that tagging is in place.

6. Remove the tags and locks when work is completed and systems/equipment/components may be returned to normal.

Exceptions

A. Supervisory Control of Hazardous Energy:

1. Where the above lockout procedure becomes impractical because of the magnitude or complexity of large jobs such as shutdowns or minimizing the potential of radiation and physical exposure, a supervisory control of hazardous energy may be implemented.

2. A meeting between all involved Craft Supervision, responsible Supervisor and Subcontractor personnel will be held prior to the start of any work to review lock and tag requirements and to establish a clear understanding among all parties as to what is deactivated or not.
3. A statement is needed from the responsible Supervisor and involved Craft Superintendent(s) indicating whether or not the job is considered high potential and complex. If so, then the requirements for feedback from Foreman level back to Superintendent level to ensure a clear understanding of what is deactivated and what is not, as well as our outer limits of work assignments, must be instituted.

4. Upon satisfactory completion of the requirements above, the Superintendent will place the key to all locks installed in a clear plexiglass lockout box. Those witnessing the lockout shall assign a certification card and place it under the lid of the lock box so that it may be read by those involved in the work.

5. At this point, a multiple lock device shall be placed on the lock box and the Contractor representative and the appropriate Project Superintendent shall place their locks and tags on the lock box.

6. Every lock and tag placed on a supervisory lockout lock box must remain until the expiration date of the lockout procedure.

7. A copy of the approved Supervisory Lockout Procedure shall be posted at the lock box. The lock box shall be numbered to correspond with the number of the procedure.

8. On all supervisory controls of hazardous energy, the Project Superintendent shall be the last construction member to request his/her danger lock and tag.
This procedure outlines the requirement for compliance with the following:

1. Federal Highway Administration (FHWA) (49 CFR Parts 391 and 394)
2. Research and Special Programs Administration (RSPA) (49 CFR Part 199)

The rule applies to safety-sensitive positions in the following professions: mass transit drivers, commercial drivers, and gas pipeline workers. The rule also requires pre-employment, post-accident, random, reasonable cause and return-to-duty (post-rehabilitation), drug testing. Testing must be in accordance with 49 CFR Part 40.

**Positive Test Results**

Contractors may not use any person to perform a safety-sensitive function who tests positive or refuses to be tested. Employees who have had a verified positive test result may not be returned to duty in a safety-sensitive position until they have successfully completed a rehabilitation program, passed a return-to-duty drug test, and have been recommended by the Medical Review Officer (MRO) and an Employee Assistance Program (EAP) for return to duty.

**Education and Training**

The rule requires drug abuse prevention education and training for supervisors and employees. Supervisory training must include one 60 minute period of training on physical, behavioral, and performance indicators of probable drug use. In addition, education on the following drugs tested under Department of Transportation (DOT) regulations is required:

1. Marijuana
2. Opiates
3. Cocaine
4. Amphetamines
5. Phencyclidine (PCP)

The education and training program must be performed on an annual basis.
Training

Depending on the type of vehicle being driven, the operator must obtain a Commercial Drivers License (CDL) with the appropriate endorsements (e.g., must have passed an approved hazardous materials course to drive a fuel truck). The CDL must be current and the operator must have a current physical and medical questionnaire on file (physicals must be conducted annually). All state motor carrier regulations shall apply and are applicable. The state shall perform all the vehicle testing and driving skills testing. The contractor shall assure that appropriate DOT drug testing program is in place and working properly.

Department of Transportation (DOT) Regulations (53FR47003)

Applies to: Safety-sensitive positions in the following professions: mass transit drivers, commercial drivers, airline/railroad personnel, merchant seaman and gas pipeline workers.

Type of Drug Testing Required: Random, post-accident, reasonable suspicion, periodic and pre-employment, and return-to-duty.

Prohibited Drugs: Marijuana, cocaine, opiates, amphetamines and PCP.

Testing Guidelines: The Department of Health and Human Services (HHS) "Mandatory Guidelines for Federal Workplace Drug Testing Programs" (53FR11970) states that employers must use a HHS-certified lab.

Medical Review Officer: Test results shall be reviewed by a Medical Review Officer who must be a licensed physician with knowledge of substance abuse disorders.

Counseling and Rehabilitation: Employee Assistance Program that meet the minimum requirements of the DOT are required.

Driver Testing: For drivers who operate vehicles designated to transport more than fifteen (15) passengers including the driver; hazardous materials drivers requiring DOT placarding; or drivers operating vehicles that have a gross vehicle weight rating (GVWR) or gross combination weight rating of 26,001 or more pounds.

Federal Highway Administration (FHWA)

Summary: The rule establishes minimum standards for drug testing programs of interstate motor carriers, including testing of drivers for the use of controlled substances.
Applies to: Motor carriers and drivers who operate commercial motor vehicles in interstate commerce when:

1. The vehicle has a GVWR or gross combination weight rating (GCWR) of 26,001 or more pounds.
2. The vehicle is designed to transport more than fifteen (15) passengers, including the driver.
3. The vehicle is used in the transportation of hazardous materials in a quantity requiring placarding.

Testing: Pre-employment, periodic, reasonable cause, post-accident, and random testing are required under the FHWA rule. Testing must be conducted in accordance with 49 CFR Part 40.

Large Employers: Each employer with 50 or more drivers as of March 17, 1994 shall implement the requirements of Part 382 on January 1, 1995.

Small Employers: Each employer with fewer than 50 drivers as of March 17, 1994 shall implement the requirements of Part 382 on January 1, 1996.

Positive Test Results: Drivers who test positive are medically unqualified to drive, and drivers refusing to be tested may not drive. Furthermore, drivers who test positive or refuse to be tested after a fatal accident are disqualified for one (1) year.

Recordkeeping/Reporting Requirements: The contractor shall retain information concerning the drug test(s) and results. The MRO will conduct individual consultations and inform the jobsite of any determinations. Accident reports filed with the FHWA must include results of any subsequent drug test(s).

Procedure

This policy covers employees who will require DOT drug testing and formal education.

1. Review the company policy on alcohol and drug abuse.

2. Use the Drug Abuse and Alcohol Policy and discuss the Employee Assistance Program to complete this step. (See Section 24 for the Drug abuse policy)
   a. Read the company's policy statement and the use of alcohol or drugs in the workplace.
b. Review items or actions which constitute policy violation and the subsequent disciplinary action.

c. Review the types of drug testing that will be required for all employees in safety-sensitive positions. These types of testing are:

(1) Pre-Employment
(2) Post-Accident
(3) Random
(4) Reasonable Cause
(5) Return-To-Duty (Post-Rehabilitation)

d. Review which employees are subject to testing.

e. Review the company's procedures for obtaining a sample.

(1) Show employees a copy of the drug testing custody and control form.
(2) Show employees an example of the test sample collection kit.
(3) Describe how a test sample will be collected.
   - Location of collection site
   - Collection site personnel
   - Collection process

f. Describe how the testing procedures are designed to protect the employees' rights to privacy and confidentiality.

g. Review the company's procedures on reasonable cause testing.

Testing

1. Pre-employment testing

   a. An applicant should be tested prior to the first time a driver performs safety-sensitive functions for the employer.
b. There are certain exemptions for pre-employment testing. Refer to Part 383.301(b) for detailed requirements.

2. Post-accident testing
   a. As soon as practicable following an occurrence involving a commercial motor vehicle operating on a public road in commerce, each employer shall test for alcohol and controlled substances.
   b. Alcohol tests shall be administered within two hours following the accident.
   c. Controlled substance abuse tests shall be administered within 32 hours following the accident.

3. Random testing
   a. The alcohol random testing rate shall be ten percent.
   b. The controlled substance abuse testing rate shall be fifty percent.

4. Reasonable suspicion testing
   a. Employers shall require drivers to submit to an alcohol test when the employer has reasonable suspicion to believe that the driver has violated provisions of safety-sensitive functions.
   b. The determination that a reasonable suspicion exists must be based on specific, contemporaneous, articulable observations concerning the appearance, behavior, speech or body odors of the driver.

5. Return-to-duty testing
   a. Each driver having failed a substance abuse or alcohol test shall undergo a return-to-duty test and successfully pass prior to being employed.
   b. Alcohol testing shall indicate a result of less than 0.02.
   c. A controlled substance test shall indicate a verified negative result for controlled substance use.
DOT REQUIRES SCREENING AND TRAINING FOR THE FOLLOWING FIVE DRUGS

- MARIJUANA
- COCAINE
- OPIATES
- AMPHETAMINES
- PHENCYCLIDINE (PCP)
Search/Seizure Procedures

The search/seizure procedure must result from an observed phenomenon or fact.

This procedure must be applied by a supervisor (a second supervisor shall be present as a witness).

If an employee observes a suspicious phenomenon or act, the employee must report the incident to the immediate supervisor. The supervisor must then actually observe the phenomenon or act. He cannot initiate this procedure solely on hearsay or speculation.

After the supervisor's actual/physical observation of the incident, then this procedure may be initiated.

The following procedures will then apply:

1. The confrontation must take place in the presence of a witness (preferably a second supervisor).
2. The employee must be taken to a private area.
3. The employee will be requested to empty all his/her pockets.
4. Any carry/shoulder items (i.e. knapsacks, purses, gym bags, lunch boxes, thermos, etc.) will be searched.
5. The employee will be asked to open any containers.
6. Personal lockers, tool boxes, etc. (on company or client property) will be opened.
7. Any locks or lockers that cannot be opened by available keys or combinations may be forced/cut open (but will be secured after the search). If these items are client property, client will be informed of the action and their permission obtained prior to initiating this step.
8. Any company vehicle will be thoroughly searched.
9. Any personal vehicle on company property/parking lots may be searched. Employee will be asked to open glove compartments, trunk, mounted tool boxes, and any container/box found. Do not force any item open unless it is specific company property.
10. Any item that is seized will be itemized and properly described.
11. A receipt will be given to the employee for any item that is seized.
Remember:

1. Should the employee exhibit any form of physical impairment, initiate the reasonable cause and the transportation procedure.

2. Always have a supervisor and witness (preferably a second supervisor) present.

3. Confront the employee in a private location.

4. Conduct the procedure in a professional manner.


6. Never hesitate to call for assistance.

7. Ensure you fill out the search/evidence documentation form.

Search Procedures Must Be Conducted As Follows:

1. In the presence of two (2) witnesses.

2. In private.

3. Employee must open containers.

4. Employee must empty pockets, etc. Do not touch employee.

5. Search lockers, large boxes. May cut lock but be prepared to replace it and give key to employee.

6. Any contraband seized will be described in writing and a receipt given to the employee. Document the entire collection procedure.

7. Provide employee with transportation home if suspected of being under the influence of drugs or alcohol.
SEARCH/EVIDENCE (DISCREPANCY) DOCUMENTATION FORM

Department/work location: __________________________________________________________

Employee: _____________________________ Social Security No.: ______________________

Date: _____________________________ Time: _____________________________

Investigated by:

Name: _____________________________ Position: _____________________________

Location of search: Reason for search (Circle item(s) applicable)

Routine Periodic
Contractual Reasonable suspicion (or cause)

Location of evidence or prohibited items: __________________________________________

Description of evidence, items or substances (continue on back, if necessary):

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Were local authorities called? YES NO

Name of agency/person who received call: ________________________________________

________________________________________________________________________

Time: _____________________________

________________________________________________________________________

Reporting supervisor's signature _____________________________ Date

Witness’ Signature _____________________________ Date
Conducting Tests For Reasonable Cause

This procedure will outline the steps necessary to conduct a drug test for "Reasonable Cause" on any employee that is governed by Department of Transportation regulations.

All supervisors and employees must be thoroughly briefed in this procedure and understand how to properly document and complete the "Behavior/Incident Documentation Form."

1. If an employee notices a fellow worker behaving in a suspicious manner (i.e. staggering, slurred speech, etc.) or notices the possible smell of alcohol on the breath, he/she should immediately notify his/her supervisor and discuss the present situation. In the event that contact with the supervisor cannot be achieved, the employee should attempt to contact the highest level of supervision in the immediate area and explain the situation to that supervisor.

2. If a supervisor notices an employee behaving in a suspicious manner, he/she should also include a witness, preferably another supervisor if at all possible, and relate the present situation.

3. Never attempt to approach an employee to conduct this procedure without the presence of another supervisor or a second witness. Remember that the witness must sign the incident report.

4. Take the employee to a private location and read the following:

"I have been observing you and it appears that you are under the influence of either alcohol or drugs. We are not doctors, so we are requesting that you take alcohol and drug screening tests to make a determination of your condition. If you refuse to take the tests, you will be in violation of company policy for refusing to submit to a urinalysis and/or blood ethanol testing examination and will be immediately terminated. If you take the tests, you will be suspended pending the results. If you take the tests and they are negative, you will be compensated for all lost time. Should the results prove to be positive, you will then be terminated."

"Do you understand?"

"What is your answer?"

Read the statement and the questions clearly and in a voice tone loud enough to allow the employee and witness to hear everything simultaneously.
If the employee refuses to cooperate with the procedure, then escort him/her off the work site and make every effort possible to obtain another means of transportation for the employee. "a relative, friend, taxicab, etc."

If the employee becomes belligerent at the work-site, refuses any assistance, or insists on driving his/her personal vehicle, then you should contact the proper authorities and inform them of the situation.

There should always be a witness present.

5. Make arrangements with your designated collection site to have the employee tested.
   a. At the collection site have the employee sign the drug testing and consent form and complete the required forms that accompany the specimen sample.
   b. The collection site may also have required their own release form to be completed at the same time. Be sure to get a copy of all forms to include with your written report.
   c. Make sure that the samples are properly sealed, all required forms are completed and initialed, and the specimens and forms are placed in the appropriate mailer for the designated carrier or courier. Make arrangements for their pick-up.
   d. Remind the employee that he is suspended pending results.
   e. Offer the employee transportation. Do not allow the employee to drive.

NOTE:

No employee should be tested for any substance of abuse without giving their written consent.

Notification of the incident to the appropriate Safety Manager and complete documentation of employee's action, with the witness signature, should be completed within twenty-four (24) hours of the occurrence.
Behavior / Incident Documentation Form

Department/work location:_____________________________________________________

Department of incident:_______________________________________________________

Employee or subject name:_____________________________________________________

Date of observation: ___________________ Time: ____________________________

Observations recorded by:_____________________________________________________

Additional witnesses:_________________________________________________________

Length of time observed:_____________________________________________________

Description of behavior/incident:_____________________________________________

_________________________________________________________________________

Did employee refuse to submit to testing?_____________________________________

Did the employee leave the workplace on his/her own?_________________________

Circumstances of employee's departure:_______________________________________

Time departed: ___________ Location:________________________

Vehicle (if any):___________________________________________________________

Vehicle license #:_________________________________________________________

Were authorities called? ___________________________ Time: ____________________

Name of agency called:_______________________________________________________

Witness(es) observing departure:____________________________________________

Additional comments (continue on back, if necessary):__________________________

_________________________________________________________________________

_________________________________________________________________________

Reporting supervisor’s signature ___________________________ Date

Witness’ Signature ___________________________ Date
Signs and Symptoms of DOT Prohibited Drugs

DOT Regulations expressly prescribe minimum federal safety standards to detect and deter the use of controlled substances defined in 49 CFR Part 40 as:

1. marijuana,
2. cocaine,
3. opiates,
4. amphetamines, and
5. phencyclidine (PCP)

The following are specific signs and symptoms for these prohibited drugs. You should become familiar with these warning signs and watch for them. If you observe these warning signs, do not disregard them. They are cause for action regardless of the employee's performance.

MARIJUANA

A crude drug made from the plant cannabis sativa. Marijuana is addictive, although many believe it is not. Common names are grass, weed, pot, reefer, joint, loco weed, mary jane, and roach.

Possible Indicators

- Rapid loud talking
- Forgetfulness in conversation (i.e., "What was I saying?" or may simply trail off)
- Appears intoxicated but has no smell of alcohol
- Appears sleepy or stuporous in the latter stages
- Inflammation in whites of eyes; pupils unlikely to be dilated
- Increase in appetite especially after smoking
- Odor similar to burnt rope on clothing or breath
- Excessive laughter or inappropriate happiness
- Distorted sense of time passage, tendency to over-estimate time intervals
- Tendency to drive cars slowly, below speed limit
Presence of roach clips (e.g. paper clips, bobby clips, hemostats, or tweezers)

Bongs or water pipes

Use of eye drops to hide bloodshot eyes

Effects on Driving

Thinking and reflexes slowed, making it hard to respond to sudden, unexpected events.

Ability to "tract" through curves, brake quickly maintain speed and proper following distance is affected. Tracking can be affected up to ten (10) hours after use.

Driving skills are impaired for at least 4-6 hours after use.

Visual and depth perception are distorted. Can create confusion about traffic movement and appropriate diving response.

Overestimates time intervals.

Difficulty with complex decisions. Performance impeded when the task is complex. Inability to display continuous attention or to digest information processing.

Less likely to control vehicle speed and proper positioning in response to wind gusts and driving through curves.

Over-concentration and shortened memory span will prevent detection of warning signals.

Lengthened glare recovery. Recovery time after driving into bright headlights is significantly lengthened.
COCAININE

A drug extracted from the leaves of the coca plant. Cocaine is a central nervous stimulant and highly addictive. Common names are coke, snow, and crack.

Possible Indicators

- Runny nose; reddened and sore nose, cold or chronic sinus/nasal problems, nosebleeds
- White powder in container and/or around nose
- Unexplained bursts of energy
- Free-basing instruments such as an ether, small torch, mixing plates or containers
- Use or possession of paraphernalia including small spoons, razor blades, mirror, little bottles of white powder, and straws
- Restlessness or nervousness
- Irritability and anxiety
- Repetitive and nonpurposeful behavior
- Long periods without eating or sleeping, likely to be emaciated
- Dilated pupils
- Respiratory problems

Effects on Driving

- Too quick to compensate in acceleration, braking and shifting
- Feeling overly confident in driving judgment and skills
- Small (social) amounts of cocaine/crack can produce lapses in attention and concentration. Driver is unable to display continuous attention to driving.
- Cocaine is short acting, therefore within an hour, the person feels less alert and is extremely fatigued and sleepy. Frequently drivers fall asleep at the wheel.
After euphoria, driver exhibits restlessness, irritability and anxiety. Driver
demonstrates anger and hostility toward other drivers as well as being impatient
and taking more risks.

False sense of security, overly confident in driving judgment and skills. Inability
to see impending danger.

Extreme danger of convulsions, seizures, cardiac arrest and/or stroke. Involuntary muscles simply do not work; possible collision; usually no warning of
impending danger.

Distorted vision - difficulty in seeing. The pupils are so dilated that sunlight or
bright headlights may cause much pain and discomfort.

Erratic muscle movement producing muscle spasms.

Overstimulated reflexes.

Drivers may suffer from auditory and visual hallucinations as well as cocaine
psychosis in which they lose sight of where they are going - lose touch with
reality.

AMPHETAMINES / STIMULANTS

Stimulants used to increase alertness and physical activity. In pure form, they are yellowish
crystals that are manufactured into tablets or capsules. Amphetamines include three closely
related drugs: amphetamine, dextroamphetamine, and methamphetamine.

Common names are speed, meth, hearts, pep pills, bennies, uppers, peaches, cartwheels, and
sky-rockets.

Possible Indicators

- Unusual energy, accelerated movements and activities
- Lack of sleep, insomnia
- Dryness of mucous membranes (e.g. dry mouth and lips)
- Possible loss of appetite
- Dilated pupils
Irritability, anxiety, aggressiveness, panic and nervousness
Excessive sweating and shakiness
Talkative but conversation often lacks continuity; changes subjects rapidly

**Effects of Driving**

- Studies reveal that small doses of amphetamines given to subjects for a limited time, generally improve performance of several driving skills. However, these subjects tend to overestimate their performance and take more risks.
- Actual driving records indicate that people who take amphetamines are more accident prone.
- Stimulants combat fatigue and keep drivers awake, but also make the driver edgy, less coordinated and more likely to be involved in traffic collisions. Drivers who use stimulants may be four times as likely to be involved in collisions than non-user.
- Extreme fatigue experienced by drivers both physically and mentally during the down period. Inability to concentrate and make sound judgments.
- Drivers experience severe mental depression, fatigue and irritability. Drivers tend to be more aggressive on the road.
- Use of amphetamines causes food and sleep deprivation which can lead to speed or amphetamine psychosis in which the driver is out of touch with reality and does not know where he is going.

**OPIATES**

Sometimes referred to as narcotics, opiates are a group of drugs which are used medically to relieve pain. Some opiates come from the resin taken from the seed pod of the Asian Poppy, e.g., opium, morphine, heroin, and codeine. Other opiates are synthesized or manufactured. Common names are horse, smack, junk, H, morpno, dollies, heroin, opium, morphine, and codeine.

**Possible Indicators**

- Mental dullness
- Loss of appetite
- Slurred speech
- Short lived euphoria or feeling good effects
- Pinpoint pupils that fail to respond to light
- Scars ("tracks") on inner arms or parts of body from needle injections
- Drowsiness and lethargy
- Apathy and decreased physical activity
- Nausea and vomiting
- Respiratory depression
- Overdose can result in coma and death
- Use or possession of paraphernalia including syringes, bent spoons, bottle caps, eye droppers, rubber tubing, cotton and needles

**Effects on Driving**

- False sense of security, driver may take more risks.
- Euphoric high followed by a period of stuporous inactivity in activity in which driver may spend time daydreaming.
- Difficulty in focusing. Because pupils are constricted to pinpoint size, vision is impaired.
- Blurred and/or double vision is also experienced with opiate use just as it would be with any other depressant drug.
- Extreme fatigue and drowsiness - leading to falling asleep at the wheel.
- Driver could easily go into a coma with the use of opiate drugs.

**PHENCYCLIDINE (PCP)**

This drug was first developed as an anesthetic in the 1950's and taken off the market because it sometimes caused hallucinations. It is available in various forms: a white crystal-like powder, a tablet or a capsule. Common names are PCP and angel dust.
Possible Indicators

- Hallucinations
- Irrational speech or unpredictable behavior; mood may swing from passiveness to violence for no apparent reason
- Symptoms of intoxication
- Disorientation; agitation and violence if exposed to excessive sensory stimulation
- Fear and terror
- Rigid muscles, strange gait
- Deadened sensory perception (may experience severe injuries while appearing not to notice)
- Mask-like facial appearance
- Subject to flashbacks
- Comatose (unresponsive) if large amount consumed; eyes may be open or closed

Effects on Driving

- The driver using this drug is extremely dangerous on the road. PCP's effects are so varied and so bizarre that one cannot predict the dangers involved.
- User feels they are the superior being on the road. Sense of invulnerability and power causing driver to take more risks on the road.
- Drug would contribute to a very aggressive, hostile and violent driver with very little patience and no fear of death.
- Driver would tend to anger very quickly.
- Subject to auditory and visual hallucinations; would react to something not there and be involved in a collision.
- Visual distortion - blurred and/or double vision.
Lack of paranoia such as found with LSD users. Drivers feel that it is okay to use this drug and drive because they cannot be hurt or they are invulnerable.

As the driver may experience convulsions, coma, and/or death, the possibility exists for a collision.

Loss of perception of time. Time appears to slow down.

Driver's impulses are dulled and coordination fails.

**Signs and Symptoms of Other Substances**

Abuse of the following can create the same problems as the regulated substances.

**ALCOHOL**

Common names are booze and juice.

**Possible Indicators**

- Mental slowdown, inability to grasp the meaning of facts
- Chronic fatigue
- Weight loss
- Facial changes, skin slack and unhealthy looking
- Difficulty in getting to sleep at night
- Odor on the breath
- Use of breath sweeteners
- Difficulty focusing, glazed appearance of the eyes
- Impairment in social functioning, low frustration, tolerance, impulsiveness, anxiety, over-sensitivity, isolation, defiance, violent mood swings and manipulation of others; uncharacteristic passive behavior
- Absenteeism, particularly at the beginning of the week
- Unexplained bruises and accidents
Loss of memory (black outs)

Availability and consumption of alcohol becomes the focus of social or professional activities

DEPRESSANTS

Common names are downers, goof balls, yellows, yellow jackets, red devils, peanuts, pines, and red birds.

Possible Indicators

- Loss of motor coordination
- Drowsiness
- Drifting off or inattention
- Slurred speech
- Dilated pupils
- Actions similar to alcohol intoxication
- Lack of facial expression or animation; flaccid appearance
- Overdose can result in coma and death

PRESCRIPTION DRUGS

Used to reduce stress, these drugs can be abused.

Possible Indicators

- Sluggishness or hyperactivity
- Impaired reflexes
- Numbs emotions
- Addiction and brain damage
Project Description

Project Location: ______________________________________________________

Type of Project: ______________________________________________________

Assessment Date: _____________________________________________________

Date Project to Start: _________________________________________________

Size of Site: _________________________________________________________

Duration of Project: _________________________________________________

Manpower: __________________________________________________________

Safety and health hazards expected: ______________________________________

___________________________________________________________________

___________________________________________________________________

Emergency response team name & telephone: ______________________________

Safety Department telephone number: _________________________________

Site characterization and analysis:

Excavations: Yes: _________ No: _________

Soil Hazards: Yes: _________ No: _________

Bodies of water present: Yes: _________ No: _________

Hazardous chemicals on site: Yes: _________ No: _________

Air Emissions possible: Yes: _________ No: _________
Pre-Assessment

Based upon the pre-assessment conducted at the project location, list any environmental hazards that could potentially pose a problem with on-site personnel and/or surrounding communities:

Site Map

Include a copy of the site map for the project location. Also, include the site topography and all locations of accessibility by air and/or roads or pathways to the project. Locate any pathways and low-lying areas where the accumulation of hazardous substances could collect and disperse to other areas of the project site or to the soil, air, or any bodies of water. It is good management practice to post a copy of the map at the project location for employees to review on a daily basis.

Work Zones

Prior to commencing work, locate all hazardous task areas for the project. These zones shall be identified by the proper barricades and signage. If fencing is deemed appropriate by project management, then proper fencing shall be erected around hazardous task locations within the project. All project personnel shall be trained in the pertinent safety and health procedures of the work area they are in. Only qualified personnel shall be given access to the work zones in which hazardous tasks are being performed. Project management may also want to locate the specific work zones on the site map.

Engineering Controls

List all of the available engineering controls that will be used on the project:
Training

Site management and the Safety Department shall ensure that the appropriate training is being conducted for all affected personnel on the jobsite. The training should include the following elements:

- Hazard recognition
- MSDS evaluation of hazardous chemicals on site
- Non-routine tasks
- Personal protective equipment (PPE)
- Decontamination procedures
- Reporting of a spill or hazardous leaks
- Proper handling procedures of equipment and materials
- Corrective action
- Using the "buddy system"

The training shall be conducted by a qualified person in accordance with local and state codes and regulations. The Safety Department and/or site management shall conduct location specific training as the need arises.

Permits

Does the state require a specific permit(s) to be completed and reviewed prior to the commencement of work?

Yes: ____________  No: ____________

If yes, then ensure the project manager has the appropriate copies and approvals for the project location on site.
Personal Protective Equipment

List any of the required PPE needed for the project by type and manufacturer:

Types of respirators:  
Air supplied:  

Air purifying:  

Chemical suits:  
Coverall suits:  
Eye protection:  
Face protection:  
Face shields:  

Chemical goggles:  
Glasses:  
Bubble hoods:  
Rubber boots and gloves:  

Medical History and Examinations

Based upon the type of work being performed, certain medical examinations and consultations must be performed by a licensed physician. The following elements should be considered when establishing medical evaluations for certain hazardous tasks.

Written medical history: ____________________________

Medical examination: ____________________________

Blood work-up: ____________________________

Urinalysis: ____________________________

Pulmonary Function test: ____________________________

Any past medical complaints: ____________________________

Recommended limitations: ____________________________

Physician written opinion: ____________________________

Under normal circumstances, medical evaluations are performed on an annual basis. Refer to any federal and/or state requirements for evaluations other than the annual physical.

Medical Surveillance

An on-going medical surveillance program shall be initiated at the project location. The Safety Department shall evaluate and determine the craft classifications that shall participate in the medical evaluation program. An initial baseline test shall be performed on each employee that will be assigned a hazardous task. The elements discussed in the medical history section shall be used to determine the extent of the testing and evaluations.

Inspections

The project management team shall appoint a qualified person to conduct daily, weekly, and/or monthly inspections of the jobsite in accordance with the environmental safety and health plan. The inspector will focus his/her efforts on the accident prevention plan for the project when auditing locations that could pose environmental problems or releases to the environment. The following checklist should be used to determine the potential risk to the project for an environmental release. All documentation should be retained in the project files.
Section 27: Environmental Safety & Health

Paint storage locations:
  Integrity of dike: ________________________________
  Storm run-off: ________________________________
  Drum integrity: ________________________________
  Date of accumulation: __________________________
  Spill preventative measures in place: ________________
  ________________________________
  ________________________________
  ________________________________
  Area barricaded: ______________________________
  Proper signage: ______________________________
  No Flammables: ______________________________

RCRA storage locations:
  Integrity of dike: ______________________________
  Storm run-off: ______________________________
  Valves locked & tagged: _________________________
  Drum integrity: ______________________________
  Labeled properly: ______________________________
  Date of accumulation: __________________________
  Spill preventative measures in place: _______________________
  ________________________________
  ________________________________
  ________________________________
  Area barricaded: ______________________________
  Proper signage: ______________________________
Fuel storage areas:

- Integrity of dike: ________________________________
- Storm run-off: ________________________________
- Tank integrity:
  - Signs of rust or deterioration: ________________________________
  - ________________________________
- Proper signage: ________________________________
- "No Smoking" signs in place: ________________________________
- Fire extinguisher in place: ________________________________

Other:

List any other areas of the project that could have an adverse environmental impact on the construction site: ________________________________

Describe the engineering controls in place to prevent a release or spill:

- ________________________________
- ________________________________
- ________________________________
- ________________________________
- ________________________________
- ________________________________
Document any corrective actions on the areas listed above:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Air Monitoring

Based upon the project requirements, describe the type(s) of monitoring equipment to be used on the project.

Direct reading instruments: ____________________________________________

________________________________________________________________________

________________________________________________________________________

Time lapse meters: ________________________________________________

________________________________________________________________________

________________________________________________________________________

High and low flow pumps: ________________________________

________________________________________________________________________

The following types of hazards shall be identified when conducting air monitoring at the project location. This is not an all-inclusive listing, but should be used as a guideline when making determinations of the appropriate air monitoring required for employees and the environment:

- Radiation
- Benzene
- Asbestos
- Lead
- Cadmium
Spill Prevention Plan

A spill prevention plan shall be established prior to starting work at the project location. Different states require that a spill prevention control and countermeasure plan be reviewed and approved by a Registered Professional Engineer. The following elements, at minimum, shall be included in the spill prevention plan.

Name and owner of the property/facility: ________________________________

Operator of the property/facility: ________________________________

Location of the property/facility: ________________________________

Date/year of initial facility operation: ________________________________

Description of the property/facility: ________________________________

Topographical maps, maps, flow diagrams, drainage: ________________________________

Potential cause(s) of spills: ________________________________
Preventative measures established: __________________________________________

__________________________________________

__________________________________________

__________________________________________

Corrective actions to be taken: __________________________________________

__________________________________________

__________________________________________

__________________________________________

Regional Administrator name & location (if applicable): ______________________

__________________________________________

__________________________________________

SPILL PREVENTION AND COUNTERMEASURE PLAN

- Dikes, berms or retaining walls sufficiently impervious?
- Curbing sufficient to contain spill?
- Culverting, gutters or other drainage system intact?
- Weirs, booms or other barriers available?
- Spill diversion ponds in place?
- Retention ponds if needed?
- Sorbent materials on hand?
- Employees properly trained in response techniques?
- Curbing, drip pans in place and inspected?
- Collection systems in place?
- Sewers identified and marked accordingly?
- Other run-off areas identified?
Written contingency plan in place?

Drainage from diked storage areas should be restrained by valves or other positive means to prevent a spill or other excessive leakage of oil or other hazardous substances into the drainage system, soil (ground), or water. Diked areas may be emptied by pumps or ejectors; however, these should be manually activated and the condition of the accumulation should be examined before starting to be sure the substance will not be discharged into the ground or bodies of water. Site drainage ditches, road ditches and all low-lying areas should be inspected regularly for the accumulations of oil or other hazardous substances that could affect the environment. Any such accumulations shall be removed.

Vehicular traffic granted onto the project location should be warned verbally or by appropriate signs to be sure that the vehicle, because of its size, will not endanger above-ground piping and any storage areas on the site. Facility lighting should commensurate with the type and location of the project. Consideration should be given to: discovery of spills occurring during hours of darkness, and the prevention of spills occurring through acts of vandalism.

Each project location should appoint a designated representative who shall be accountable for the spill prevention plan.

Procedure

The environmental safety and health plan should be completed for any project that an adverse impact on the environment may occur. The Safety Department should be contacted if any questions arise while completing the plan.
Section 28: Fleet Safety Program

1.0 GENERAL

In order to achieve a level of zero accidents in our operations involving motor vehicles, safety procedures and rules must be followed. This program seeks to provide guidelines for the safe operation of motor vehicles as well as the safety of our employees and the public.

2.0 PURPOSE

To reduce the exposure of vehicle accidents/incidents, we will strive to incorporate driver safety orientation, defensive driver training, vehicle inspection, preventative maintenance, accident/incident reporting, and accident/incident investigation. We will establish procedures to insure that only licensed drivers with acceptable driving records operate company-owned and/or personal vehicles operated on behalf of the company during the course of company business.

3.0 SCOPE

This program applies to all drivers of company-owned, personal vehicles, and/or rental cars operated on behalf of the company during the course of company business.

4.0 DEFINITIONS

For the purpose of this program, the following definitions have applications to all driving situations, in a company vehicle or in a personal vehicle operated on behalf of the company during the course of company business. It is the purpose of this program to track and record all such activity and to assess an individual's qualifications to operate a vehicle in light of such activity.

MOTOR VEHICLE RECORD (MVR)

Record of a driver's accidents/incidents and/or traffic violations.

MAJOR VIOLATIONS

- Driving while intoxicated within the past five (5) years
- Driving under the influence of drugs within the past five (5) years
- Negligent homicide arising out of the use of a vehicle
- Using a motor vehicle for the commission of:
  - A felony
  - An aggravated assault
  - A grand theft
  - A hit and run
  - A speed contest
- Reckless driving/speeding contest
- Making a false accident report
- Careless driving
- Leaving the scene of an accident
- Ticket issued for more than three (3) moving violations within three (3) years
- Driving while license is suspended or revoked
- Attempting to elude a police officer
- Any other offense or activity reasonably designated by the company to constitute a major violation

MINOR VIOLATIONS

Minor violations are understood to be all moving violations not listed as major violations.

MOVING VIOLATION

The commission or omission of an act by a person operating a motor vehicle that could directly result in injury or property damage and is also a violation of a statute, ordinance, rule, or regulation.

ACCIDENT/INCIDENT INVOLVEMENT

A driver shall be considered to be involved in an accident/incident if any motor vehicle which they are driving, shall come in contact with any person, animal, other vehicle, or other inanimate object in a manner which results in death, injury or property damage. Any such accident/incident shall be considered an accident/incident regardless of whether anyone was killed or injured, whether on private or public property.

COMMERCIAL MOTOR VEHICLE (CMV)

- Has a gross combination weight of 26,001 or more pounds inclusive of a towed unit with a gross vehicle weight rate (GVWR) of more than 10,000 pounds;
- Has a gross vehicle weight rate (GVWR) of 26,001 or more pounds;
- Is designed to transport 16 or more passengers, including the driver; or
- Is any size transporting hazardous materials requiring placards.

SMALL VEHICLE

A small vehicle is any vehicle with a gross vehicle weight rate (GVWR) of 26,001 pounds or less.

LARGE VEHICLE/TRUCK

A large vehicle is any vehicle with a gross vehicle weight rate (GVWR) of 26,001 pounds or more.
DUI

For the purposes of this program, DUI means driving while under the influence of alcohol or drugs as defined by DOT (for CDL drivers, and drivers of commercial motor vehicles), OR, as defined by the State regulations for all other drivers (may be termed DUI, DWI, DWAI, etc., depending on the State).

GROSS VEHICLE WEIGHT RATING (GVWR)

Means the value specified by the manufacturer as the loaded weight of a single vehicle.

LICENSE TYPES

Commercial Driver's License (CDL) plus the DOT medical card is required for the operations of any commercial vehicle over 10,000 pounds.

Consult the respective state’s driving handbook for specific driving qualifications and license class.

Non-Commercial Driver's License is a required license for the operation of any non-commercial motor vehicle.

Consult the respective state’s driving handbook for specific driving qualifications and license class.

FLEET SAFETY ADMINISTRATOR

(NAME) is the designated Fleet Safety Administrator for the (COMPANY)'s Fleet Safety Program. He/she is responsible for coordinating initial setup and continued operation of the program throughout the company and shall report to the president, CEO, or COO on the status and operation of the program. He/she shall keep the president, CEO, or COO informed of safety related accident/incidents within a predetermined time after an occurrence. He/she shall also conduct a semi-annual analysis of all claims for bodily injury and property damage, theft reports and report any suggested changes to the president, CEO, or COO along with a summary of losses by type and cause. All trends shall be reported and reviewed with all upper management personnel.

The Fleet Safety Administrator will perform the following duties:

- Responsible for the management of the fleet safety program.
- Conduct reviews of the fleet safety program and make recommendations to the president, CEO, or COO.
- Assist with accident/incident investigations.
- Participate in fleet safety meetings and/or group training.
- Report all vehicle accidents/incidents to the president.
Section 28: Fleet Safety Program

- Follow-up and ensure person(s) responsible for reporting incidents and filing accidents investigation forms in a predetermined time frame.
- Conduct audits to ensure the fleet safety program is being implemented and followed at all levels.

PROJECT MANAGERS/SUPERINTENDENTS/SUPERVISORS

Project Managers/Superintendents/Supervisors will be responsible for the selection, orientation, training, and supervision of company drivers. They shall implement scheduled servicing and inspections and conduct formal investigations with the vehicle administrator following any vehicle accident/incident, including injuries to persons or damage to property.

Project Managers/Superintendents/Supervisors will be responsible for maintaining a list of approved driver's for their project.

5.0 PROGRAM DESCRIPTION

The Project Manager/Superintendent/Supervisor is responsible to make sure that only licensed drivers with satisfactory driving records (in accordance with this program) operate company-owned and/or personal vehicles operated on behalf of the company during the course of company business.

Drivers of personal vehicles must also complete a signed agreement (Appendix A - Personal Vehicle Program) and submit a proof of insurance naming the company as an additional insured. The adequacy of insurance coverage will be determined by the Fleet Safety Administrator.

Prior to being authorized to operate a company-owned and/or personal vehicle operated for the company during the course of company business, a Motor Vehicle Report (MVR) will be secured on each employee that will drive or have the potential to drive on the company's behalf. Employees whose driving records do not meet the standards of the Fleet Safety Program will not be permitted to drive until such time as all conditions of the Fleet Safety Program are met. Employees who do not meet the MVR requirements will be placed on the "no drive" driver list.

Motor Vehicle Reports (MVR) shall be secured on a semi-annual basis or at minimum, annually, for all employees that will drive or have the potential to operate a vehicle on the company's behalf.

6.0 PROCEDURES

The Fleet Safety Program will be administered by the Fleet Safety Administrator.
Section 28: Fleet Safety Program

It is the responsibility of the Project Manager/Superintendents/Supervisors to apply this program to determine which employees may periodically drive a company-owned vehicle and/or personal vehicles operated for the company during the course of company business based on the employee's Motor Vehicle Report (MVR) and the Fleet Safety Administrator's determination. (Appendix D - Criteria for Evaluating Motor Vehicle Records (MVR) of Candidate Drivers and Appendix E - Criteria for Evaluating Motor Vehicle Records (MVRs) of Current Drivers.)

The Project Manager/Superintendent/Supervisor will procure a copy of the driver candidate's driving record from the Motor Vehicle Report (MVR) and insure the candidate's driving record meets the Fleet Safety Programs requirements as set forth in the program.

The Project Manager/Superintendent/Supervisor shall ensure that a photocopy of the candidate's license type will correspond to the type of vehicles to be operated.

Motor Vehicle Reports (MVR) shall be reviewed prior to hiring any candidate driver and allowing them to drive a company-owned and/or personal vehicles operated for the company during the course of company business.

Each candidate driver will be required to complete a Motor Vehicle Record (MVR) Release Form (Appendix B - Motor Vehicle Record Release Form).

A printed report of the candidates driving record will be returned to the Fleet Safety Administrator. The Fleet Safety Administrator will notify the requesting Project Manager/Superintendent/Supervisor whether or not the candidate driver is approved to operate company-owned and/or personal vehicles operated on behalf of the company during the course of company business.

All candidate drivers that are approved will be issued a company document stating they are an approved driver and this document will be kept with the employee at all times while driving a company-owned and/or personal vehicles operated on behalf of the company during the course of company business. Employees shall also be issued a hardhat decal that states they are an approved driver.

Each approved driver will be required to receive a company fleet safety orientation by the Project Manager/Superintendent/Supervisor and sign a acknowledge release form (Appendix F - Fleet Safety Orientation Acknowledgement Form).

The Project Manager/Superintendent/Supervisor will instruct each approved driver to report any license revocation, suspension, accident/incident or driving restriction immediately. Failure to report any of these by the end of the next business day will result in a disqualification as a company approved driver.
Seat belt use is mandatory for drivers and occupants of company-owned, personal vehicles and/or rental cars operated on behalf of the company during the course of company business.

Transportation or storage of firearms, explosives, knives, and any other type of explosive materials or weapons shall not be permitted in company-owned, personal vehicles, and/or rental cars operated for the company during the course of company business.

Transportation or storage of illegal drugs is strictly prohibited in a company-owned, personal vehicles, and/or rental cars operated for the company during the course of company business.

Driving under the influence of drugs and/or alcohol, as defined by state statute or DOT regulation, is strictly prohibited in a company-owned, personal vehicles and/or rental cars operated for the company during the course of company business.

7.0 VEHICLE MAINTENANCE

Proper inspection and care of equipment is an important aspect of any safety effort. The company’s vehicle inspection, and maintenance program includes:

PREVENTATIVE MAINTENANCE AND INSPECTIONS

Each company vehicle receives documented, scheduled routine maintenance in accordance with the manufacturer’s recommendations.

Vehicle inspections are to be performed by the operator prior to the beginning of the workday to ensure the vehicle (company-owned and/or personal vehicles operated for the company during the course of company business) is fit for safe operation. A quarterly inspection using a checklist (Appendix L - Vehicle Safety Checklist) shall be completed by a qualified driver of the vehicle. Any problems or concerns noted during this inspection should be reported immediately to the driver’s immediate supervisor. Copies of reports should be forwarded to the Fleet Safety Administrator and the Maintenance Manager.

The basic steps are as follows:

- Walk around the vehicle, and trailer, if in use, and inspect all lights for proper operation. Check for any hazardous conditions (i.e., loose attachments, jagged edges, rips, or tears).
- Inspect tires for rips, tears, flats and/or worn spots, which may cause a failure.
- Check all fluids. This includes oil, water (antifreeze), brake and power steering fluids before starting engine. Add fluids if necessary.
- After starting the engine, check brakes for operation. This includes the trailer.
- Any problems must be documented and reported to the equipment person responsible for the repair.

- Do not drive any vehicle in unsafe conditions.

As part of your daily inspection, a perimeter inspection shall be performed around the vehicle prior to entry to reduce the potential of backing into or striking stationary objects.

Vehicle maintenance will include, at a minimum, the suggested maintenance schedule provided by the manufacturer in the warranty and the operator's manual provided with the vehicle.

Documentation of all maintenance performed must be readily available. This applies to company-owned and/or personal vehicles operated on behalf of the company during the course of company business.

All vehicle maintenance shall be preformed by ASE certified mechanics or at minimum qualified mechanics.

All vehicle parts shall be, at minimum, the quality suggested by the manufacturer.

Any problems or concerns noted during these inspections shall be reported immediately to the driver's supervisor.

8.0 QUALIFICATIONS FOR DRIVERS OF COMMERCIAL MOTOR VEHICLES

Each individual, before becoming approved as a driver of a commercial motor vehicle as (vehicle with a gross vehicle weight rate of 26,000 pounds or more) will:

Be a minimum of 21 years of age.

Be required to possess a commercial driver's license (CDL) with proper endorsements.

Be required to pass a driving test administered by the company for the particular equipment the individual may operate.

Undergo a Motor Vehicle Record (MVR) review. The Motor Vehicle Record must meet the company's standards.

Commercial motor vehicle drivers will be required to meet all Department of Transportation (DOT); regulations and requirements, including substance abuse testing procedures.
9.0 **QUALIFICATIONS FOR DRIVERS OF SMALL VEHICLES (Cars, Passenger Vehicles, and Pickup Trucks)**

Each individual, before becoming an approved driver of a company-owned, personal vehicles, and/or rental cars operated for the company during the course of company business will:

- Be 21 years of age or at a minimum 19.
- Be required to undergo a Motor Vehicle Record (MVR) review.
- Be required to possess a current valid Class A, B, C, D, or E driver's license. (Depending on state.)
- Be required to pass a driving test administered by the company.
- Be required to pass substance abuse testing.

10.0 **MOTOR VEHICLE REPORT (MVR)**

It is our company policy and requirement that a Motor Vehicle Report (MVR) will be secured on all candidate drivers and all current employee that have the potential to drive a company-owned and/or personal vehicles operated on behalf of the company during the course of company business.

A Motor Vehicle Report (MVR) will be examined prior to the start of employment. *(Appendix D - Criteria for Evaluating Motor Vehicle Records (MVRs) of Candidate Drivers.)*

A Motor Vehicle Report (MVR) shall be secured on a semi-annual basis or at minimum, annually, for all employees that will drive or have the potential to operate a vehicle on the company's behalf.

Any job offer made to a candidate driver for a position with the potential for driving duties will be contingent upon an MVR meeting the required standards. Continued employment with driving privileges also requires an MVR meeting the standards outlined within this program.

The standards for Motor Vehicle Records (MVRs) are as follows:

- All operators must have a valid driver's license for at least three (3) years.
- No candidate driver will be hired with a "discretionary" or "poor" Motor Vehicle Record (MVR) based on the chart list below.
- Driving records must remain "acceptable" or "clear" as graded on the chart below, for continued employment with driving duties in a company-owned, personal vehicles, and/or rental cars operated for the company during the course of company business.
Any exceptions of these guidelines must be referred to senior management and fleet safety administrator for approval.

The auto liability insurance carrier shall be consulted on any/all Motor Vehicle Records (MVRs) not meeting the minimum requirements.

Motor Vehicle Record Grading Criteria (last 3 years):

<table>
<thead>
<tr>
<th>Number of Violations</th>
<th>Number of At-Fault Accidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0 Clear</td>
</tr>
<tr>
<td>1</td>
<td>1 Acceptable</td>
</tr>
<tr>
<td>2</td>
<td>2 Acceptable</td>
</tr>
<tr>
<td>3</td>
<td>3 Acceptable</td>
</tr>
<tr>
<td>4</td>
<td>4 Acceptable</td>
</tr>
<tr>
<td>Any Major Violation</td>
<td>Any Major Violation</td>
</tr>
</tbody>
</table>

Minor Violations
Any moving violation other than a major except:

- Motor vehicle equipment, load or size requirement
- Improper/failure to display license plates (if they exist)
- Failure to sign or display registration
- Failure to have driver's license in possession (if valid license exists)

Major Violations

- Driving while intoxicated within the past five (5) years
- Driving under the influence of drugs within the past five (5) years
- Negligent homicide arising out of the use of a vehicle
- Using a motor vehicle for the commission of:
  - A felony
  - An aggravated assault
  - A grand theft
  - A hit and run
  - A speed contest
- Reckless driving/speeding contest
- Making a false accident report
- Careless driving
- Leaving the scene of an accident
- Ticket issued for more than three (3) moving violations within three (3) years
- Driving while license is suspended or revoked
- Attempting to elude a police officer
- Any other offense or activity reasonably designated by the company to constitute a major violation
Employees can be disqualified from driving a company-owned and/or personal vehicles operated for the company during the course of company business as the result of any of the following:

- Revocation or suspension of a driver's license within the past three (3) years as the result of accidents or moving violations.
- One major violation within the past three (3) years.
- Three (3) or more minor violations within the past three (3) years.

11.0 DRIVER RECORDS AND CORRECTIVE ACTIONS

Personnel files will include a photocopy of current driver's license, and the most current Motor Vehicle Report (MVR), a Commercial Driver's License (CDL) history, and corrective actions documentation for employees who drive company-owned and/or personal vehicles operated for the company during the course of company business.

Levels of corrective action shall be determined by the Fleet Safety Administrator as follows:

Counseling: One moving violation and/or an accident in a three (3) year period.

Counseling and Defensive Driver Training: Two moving violations in a three (3) year period and/or a preventable accident.

Suspension: Two preventable accidents, three or more moving violations or any major violation.

(See Appendix I - Driver Evaluation Form)

12.0 REPORT ACCIDENTS, DRIVER'S LICENSE REVOCATION, SUSPENSION, AND RESTRICTIONS

Drivers must report and provide a copy of major and minor driving offenses, driver's license revocation, suspension or restriction, immediately to their immediate supervisor.

The Project Manager/Superintendent/Supervisor is responsible to send a copy each offense, revocation, suspension or restriction to the Fleet Safety Administrator with five working days.

An employee who fails to report these actions by the end of the next business day will be immediately disqualified as a driver of company-owned and/or personal vehicles operated for the company during the course of company business.

The employee will be immediately placed on the "no drive" list.
Any driver whose driver's license is revoked, suspended, or restricted is to report this action to their Project Manager/Superintendent/Supervisor immediately following such action. Drivers who report this action will be suspended from driving company-owned and/or personal vehicles operated for the company during the course of company business until the case is resolved.

Failure to report such action will result in the immediate disqualification as a driver of company-owned and/or personal vehicles operated for the company during the course of company business.

A restricted license will be reviewed by the Fleet Safety Administrator to determine if the driver may continue to drive on the company's behalf.

All employees involved in a vehicle accident are required to report to a company-approved medical provider to have a drug and alcohol test performed. This must be done the day of the incident.

All drivers shall carry an "Accident Kit" containing an accident/incident report in all company-owned and/or personal vehicles operated for the company during the course of company business (Appendix M). This report must be filled out in the event of an accident/incident while at the scene. This report must be turned into the Project Manager/Superintendent/Supervisor immediately upon return to the jobsite or office.

All fines and expense incurred as a result of operating violations are the responsibility of the driver.

13.0 FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION

*Please refer to Section 26 of the Safety Reference Manual for more information regarding Federal Motor Carrier Regulations.

Important FMCSA Websites

These links highlight specific subject matter most frequently requested by the public. The variety of topics featured can assist you in finding information you need to know about a particular Federal Motor Carrier Safety Administration program or activity. Please look for the question(s) you are interested in and go to the appropriate Website. We hope you find this information helpful.

1. What is the Federal Motor Carrier Safety Administration's official Website address?

2. How can I locate the nearest field office?
   www.fmcsa.dot.gov/aboutus/aboutus.htm

3. Where can I obtain information about Federal safety regulations and interpretations?
   www.fmcsa.dot.gov/rulesregs/fmcsrhome.htm


6. Where can I find statistics and analysis regarding the truck and bus industry? ai.volpe.dot.gov/

7. How can I obtain a motor carrier's Profile? www.safersys.org

8. Where can I find carrier safety ratings, inspections, and accident summary data? www.saferwsys.org


11. Where can I file forms and pay fees for registration, insurance, and fines? div.dot.gov/

12. How can I change the name and address of my business online? div.dot.gov/

13. Where can I find the latest information about safety programs? www.fmcsa.dot.gov/safetyprogs/safptprogs.htm (FMCSA)

14. How can I learn about the "Share the Road Safety" program? www.sharetheroadsafety.org


17. How can I obtain information about a motor carrier, broker, or freight forwarder's application, insurance, and process agent? fhwa-ii-volpe.dot.gov/
Please refer to the following Parts/Sections of the DOT: Federal Motor Carrier Safety Regulations.

- Part 383 – Commercial Driver’s License Standards; Requirements and Penalties
- Part 390 – Federal Motor Carrier Safety Regulations; General
- Part 391 – Qualifications of Drivers
- Part 392 – Driving of Commercial Motor Vehicles
- Part 395 – Hours of Service of Drivers
- Section 396.11 – Driver Vehicle Inspection Reports

14.0 CELL PHONE USAGE AND DISTRACTIONS

CELL PHONES

We have implemented these guidelines for using a telephone while driving a company vehicle. Except where local or state laws otherwise provide, all employees having the privilege of driving a company vehicle and/or a personal vehicle operated for the company during the course of company business must comply with the following:

- Whenever possible, vehicles should be equipped with “hands free” telephone systems.
- Vehicle drivers using a telephone system must safely pull off of public roadways if:
  - Conversation(s) become complicated, lengthy, heated or emotional.
  - Drivers need to reference information or write down notes.
- Know how to use your telephone: (That way you can keep your eyes on the road.)
  - Use special features such as speed dial or 1 touch dialing.
  - Position your phone within easy reach.
- Suspend all conversations during hazardous or stressful driving conditions:
  - Poor weather conditions such as rain, sleet, snow, and ice.
  - Heavy traffic conditions such as driving in a city or traveling around an accident area.
- Drive sensibly and continually assess the traffic. Whenever possible, place calls when your vehicle is not moving or pulling into traffic. Plan your calls to coincide with times your vehicle is stopped at a traffic light, stop sign, or otherwise stationary.
- Keep all conversations as brief as possible.

NOISE

If your vehicle is equipped with a radio keep it to a volume where you can clearly hear outside sirens, emergency vehicles, trains, and horns of other drivers.
CIGARETTE/CIGARS

Some states have implemented a no smoking policy in the workplace, which includes a company-owned and/or personal vehicles operated for the company during the course of company business.

LOOSE ARTICLES

All vehicles company-owned and/or personal vehicles operated for the company during the course of company business shall be keep in a clean organized manner to reduce the opportunity to loose articles to distract while driving.

Company employees observed driving company vehicles in non-compliance with this policy are subject to action in accordance with the disciplinary section of the Safety and Health Program.

15.0 FATIGUE

Fatigue behind the wheel is a very real danger. All employees driving a company-owned and/or personal vehicle operated on behalf of the company during the course of company business must consider the following:

- First and foremost, try to get enough rest.
- If possible, don't drive alone. Passengers can take turns driving and also serve as conversation partners to help keep you awake.
- Avoid long drives at night. The glare of lights, both on your dashboard and outside your vehicle, increases the danger of highway hypnosis.
- Adjust your vehicle's environment to keep you awake and alert. Keep the temperature cool, with open windows or air conditioning in the summer and frugal amounts of heat in the winter.
- Turn the radio on, change the station frequently but avoid soft, sleep inducing music.
- Try to avoid using cruise control.
- Watch your posture, drive with your head up and your shoulders back. Legs should not be fully extended, but flexed at a 45° angle. Keep your body involved with your driving.
- Take breaks at least every few hours.
- Avoid driving immediately after large meals.
- Get out of your vehicle to stretch and take a quick walk.
- Drink something that contains caffeine – coffee, tea, and or soda.

If anti-fatigue measures fail and you start noticing signs of fatigue, find a safe, guarded rest area, truck stop, hotel, motel, or service station to sleep.
16.0 DRIVER TRAINING

Driving safety training is a critical element in the company fleet safety program. Driver training is required at a variety of times including:

Orientation – New hires shall receive driving safety as a part of the safety orientation. This will include classroom training and a behind the wheel “road test”. Classroom material will include: a complete review of the Vehicle Use Agreement Form (Appendix I), a review of DVIR requirements, a discussion on seat belt requirements, and a review of JJ Keller, NSC, DIB, Smith-System, or similar driver safety programs. The road test shall be administered by the Fleet Safety Administrator, or other qualified person.

Other requirements for the road test are found in (Appendix J – Road Test – Driver Performance Evaluation).

Periodic Refresher – Every three (3) years all drivers must receive classroom driving safety training, as well as a behind the wheel “road test”. The classroom material and agenda are shown in Appendix G. Completion of driver training shall be documented and tracked by the Fleet Safety Administrator.

As Needed – Driving safety training (classroom and behind the wheel) will also be required prior to being reclassified from “non-driving” to “approved driver”, and, on the basis of: a violation of company driving policy, accidents or incidents, observations & complaints, or others as deemed necessary by the Fleet Safety Administrator. This training shall also include a road test as described above.

Each approved driver shall sign an orientation release form (Appendix F).

Please see the attached Driver Training Outline (Appendix G).

17.0 AUDITS

A company fleet safety audit shall be preformed at least annually by the Fleet Safety Administrator, or other qualified personnel, to inspect the following:

- DOT files are current and in-compliance
- The maintenance files are current on all vehicles
- Review all drivers training files to ensure that are current and up-to date
- All MVRs are current
- Review all vehicle claims
- Review the fleet safety program to ensure that it is being implemented effectively at all levels

18.0 MANAGEMENT COMMITMENT

The company president shall meet at least annually with the Fleet Safety Administrator to review the company’s fleet safety program and all vehicle related claims. Please see the company policy statement (Appendix C - Fleet Safety Policy Statement).
19.0 USE OF VEHICLES

The use of company-owned and/or personal vehicles operated for the company during the course of company business shall be restricted to only a company-approved driver.

Family members are prohibited from driving a company vehicle unless otherwise approved by management.

20.0 SECURING LOADS

All materials transported by a company vehicle shall be properly secured before the vehicle moves. The driver will also check to ensure the load is secured within the first couple of miles of the trip.

21.0 RESOURCES

- America Trucking Association (ATA) - www.trucking.org
- America Society of Safety Engineers - www.asse.org
- Combined Accident Reduction Efforts, Inc. (C.A.R.E) - www.careofnorthamerica.org
- Daeccher Consulting Group - www.safetyteam.com
- Department of Transportation (DOT) - www.dot.gov
- Driver Institute of Behavior (DIB) - www.mcalpin.com/institut2.html
- JJ Keller - www.jjkeller.com
- National Safety Council (NSC) - www.nsc.org
- Network of Employers for Traffic Safety (NETS) - www.trafficsafety.org
- Occupational Safety and Health Administration (OSHA) - www.osha.gov
- Safety First - www.safetefirst.com
- Smith Systems - www.smith-system.com
- Traffic Safety Institute (TSI) - www.trafficsafety.eku.edu
FIGURES
ATTACHMENTS
APPENDIX A
Personal Vehicle Program (Description)
(A Signed Agreement Form Needs to be Completed)

The Company, in consideration for use of the employee's vehicle for company business, agrees, subject to the following terms and conditions, and those attached to this sheet, to pay to the employee the following compensation:

- Compensation - How many dollars per month?
- Plus - How many per eligible business and commuting mile(s)?

These rates will be reviewed periodically and adjusted as economic conditions warrant.

ALL EMPLOYEES AGREE TO THE FOLLOWING:

1. **Notification** - Drivers are to notify the company's home office immediately after an occurrence, of any citation for a motor vehicle code violation, and any accident involving this vehicle (while on Company business or during any commuting).

2. **Mileage Log** - A mileage log of business and eligible commuting miles (example attached) will be kept and turned in to the home office monthly showing all eligible mileage. (*Office employees may only report miles in excess of 25 miles per round trip daily to and from home to office.*)

3. **Influence of Drugs & Alcohol** - As is consistent with our drug and alcohol policy. Employees, while on company business and/or before/during any commuting for which reimbursement is sought, employees shall not operate their vehicle while under the influence of any illegal drug(s) and/or after the consumption of any alcoholic beverage.

4. **Assumption of Liability** - If the employee chooses to violate conditions 2 and/or 3 he/she hereby agrees to accept all liability and consequences of such violation, including liability to third parties and disciplinary action up to and including discharge.

5. **Vehicle Condition** - Employees' vehicles shall be maintained in good mechanical and safe operating conditions at all times.

6. **Codes & Laws** - Employee(s) will comply with all applicable vehicle codes and laws.

7. **Insurance Requirements** - Employee(s) will maintain at their expense standard auto liability insurance coverage with an insurance carrier satisfactory to the company to the specified limits, or at such limits as required by state law, whichever is greater:

- Bodily Injury - $300,000 per occurrence
- Property Damage - $50,000 each occurrence
- Combined Single Limit - $500,000
- Questions - Contact the Fleet Safety Administrator
8. **Insurance Documentation** - Proof of insurance must be delivered to the Company before this Agreement becomes effective, and current certificates must be provided to the company for the duration of the contract naming the company as an additional insured.

Appendix A (cont'd)
APPENDIX B
Motor Vehicle Record - Release Form

I authorize ___________________________________ Construction Co., Inc. to secure a Motor Vehicle Record (MVR) report of my driving record.

Name: ____________________________________________
(as it appears on your driver’s license)

Date of Birth: ______________________________________

Driver’s License #: _________________________________

State of Issue: _____________________________________

Driver’s Signature: _________________________________

For completion by jobsite superintendent (or designee):

■ Informed driver of requirement to report future license revocation, suspension, accident or restriction immediately.

Type of vehicle to be assigned:

■ Car, Pickup, Light truck – 10,000 GVWR – 26,000 GVWR
■ Heavy truck – over 26,001 GVWR

Superintendent’s (or designee) Signature: ________________________________

Project Name/Number: ____________________________________________
APPENDIX C
Fleet Safety Policy Statement

Policy Statement

The efficiency of any organization can be measured directly by its ability to control losses. The personal safety and health of each employee, driver, and the public are of primary importance. Therefore, every attempt will be made to reduce the possibility of accidental occurrences which may result in injury or property damage.

(CONSTRUCTION COMPANY) is committed to providing the safest possible work environment. Accident prevention is always the first order of business on any day and will take precedence over expediency or short cuts.

Management is morally committed to providing a safe workplace free from hazardous conditions and complying with all safety and traffic laws and ordinances.

We will maintain a fleet safety and loss control program conforming with the best practices for organizations of this type. The program will include driver qualification, training and supervision of drivers, establishment of safe practices and rules, planned inspections, vehicle maintenance, accident reporting, investigation, and review of accidents.

The cooperation of all employees is expected not only from supervision, but fellow workers as well. Only through the cooperative efforts of all employees and management can a fleet safety and loss control program be effective.

________________________________________  ____________________________________
Company President                        Safety Director

________________________________________  ____________________________________
Date                                     Date
APPENDIX D
Criteria for Evaluating Motor Vehicle Records (MVRs)
of Candidate Drivers

MVRs shall be reviewed prior to hiring any candidate driver and allowing them access to a
company-owned and/or personal vehicles operated for the company during the course of
compny business. If hired, a Motor Vehicle Report (MVR) shall be repeated semi-annually or
at a minimum, annually.

1. MVR indicates the candidate has a current license for the type of vehicle to be driven as
an employee of the Company:
   _____ YES. Continue to Step 2.
   _____ NO. Do not consider this individual for a driving position.

2. MVR indicates one or more moving or major violations:
   _____ YES. Do not consider this individual for a driving position.
   _____ NO. Continue to Step 3.

3. MVR indicates no major violations. However, three moving violations appear during the
last three years:
   _____ YES. Do not consider this individual for a driving position.
   _____ NO. Applicant passes. Continue with application process.
APPENDIX E
Criteria for Evaluating Motor Vehicle Records (MVRs) of Current Drivers

1. MVR indicates the driver has maintained a valid license for company-owned and/or personal vehicles operated for the company during the course of company business:

   ____ YES. Continue to Step 2.

   ____ NO. Employee should not be allowed to drive company-owned and/or personal vehicles operated for the company during the course of company business. Consider disciplinary action.

2. MVR indicates one or more major violations:

   ____ YES. Employee should be placed in a non-driving position. Consider disciplinary action.

   ____ NO. Continue to Step 3.

3. MVR indicates no major violations. However, three moving violations have occurred during the past three (3) years:

   ____ YES. Employee should be required to attend a driver-training course. Probation should be considered with the employee's MVR being documented for review every three (3) to six (6) months until improvement occurs. If more than three (3) moving violations, the employee should be placed in a non-driving position.

   ____ NO. Set-up a diary to order the employee's MVR semi-annually or at a minimum, annually.
I certify the above rules and policies have been reviewed and explained to me. I understand the rules and policies and will comply with them while operating company-owned and/or personal vehicles operated for the company during the course of company business.

Dated this __________________ day of __________________________, 200______

Employee Name Printed ____________________________________________

Employee Signature ________________________________________________

Supervisor Name Printed ____________________________________________

Supervisor Signature _______________________________________________
APPENDIX G

SAMPLE
Driving Training Outline

<table>
<thead>
<tr>
<th>Enter Local Company Name</th>
<th>Enter Trainer Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Training Location</td>
<td>Enter Training Date</td>
</tr>
</tbody>
</table>

1. Introduction & Accident History Discussion
2. Review Company Fleet Safety Program
3. Driving Techniques (JJ Keller, NSC, Smith System, DIB) and Road Signs
4. Video - Street Smart (Smith System)
5. Skid Control
6. Seat Belts & Cell Phone Safety Discussion
7. Driving Situations Video & Exercise - The Ultimate Driving Challenge
8. Road Test Discussion
9. Road Test - Behind the Wheel
10. Review
APPENDIX H
Vehicle Usage Agreement

Drivers must meet the following requirements to operate a company-owned, rented, and/or personal vehicles operated for the company during the course of company business.

1. Have authorization from management to operate the vehicle for company business.
2. Have a valid and appropriate type of license, including endorsements, for the vehicle classification they are driving.
3. Drive in a courteous manner, and follow defensive driving techniques. Obey all applicable traffic laws. You are responsible for all moving violations.
4. All occupants must wear a seat belt.
5. No riders in pick-up beds while on public roads.
6. Cell phone conversations must be "hands-free" or made with the vehicle safely stopped and parked, unless otherwise prohibited by local or state laws.
7. Maintain the vehicle in a safe operating condition by performing and documenting a daily vehicle inspection report. Unsafe vehicles are not to be driven.
8. Vehicles are to be used for company related business only. No unauthorized use.
9. Drivers and occupants of company vehicles must be employees of the company or authorized by management.
10. All accidents, or incidents, must be immediately reported to your Project Manager/Superintendent/Supervisor. Post-accident drug and alcohol testing is required on the same day as the accident. Follow the company’s accident reporting guidelines.
11. Inform management if license has changed, and if cited for a moving violation.
12. Possession or use of alcohol or controlled substances is prohibited. Use of prescribed over the counter medication which causes drowsiness is prohibited. Guns, ammunition, or any dangerous, explosive or weapon may not be stored or transported in a Company vehicle or a rented and/or personal vehicle operated for the company during the course of company business.
13. Employees can be disqualified from driving if:
   - Revocation or suspension of a driver’s license within the past three (3) years as the result of accidents or moving violations.
   - One major violation within the past three (3) years.
   - Three (3) or more minor violations within the past three (3) years.

I acknowledge the above conditions listed and will abide by these requirements.

__________________________  ________________
Print Name                        Sign Name

__________________________
Date

__________________________
Witness Name and Signature

Safety Reference Manual 28-26 (08/04/05)
APPENDIX I
Driver Evaluation Form

Name: ____________________________________________

Date: ____________________________________________

Instructions:

1. Review the employee’s MVR and assign appropriate points for each violation in the score box.

2. If prospective driver has a driver evaluation score of 6 or greater, serious consideration should be given to his/her qualifications prior to hiring.

A. Number of Accidents (within the last 3 years) Points Score
   ■ None 0 _______
   ■ 1 1 _______
   ■ 2 2 _______
   ■ 3 5 _______

B. Moving Violations (within the last 3 years)
   ■ Hit and run, leaving the scene of an accident 6 each _______
   ■ Driving under the influence of alcohol or drugs 6 each _______
   ■ Any felony, homicide, or manslaughter involving use of a motor vehicle 6 each _______
   ■ License suspension or revocation 6 each _______
   ■ Implied consent refusal (refusal to take blood alcohol test) 6 each _______
   ■ Racing or excessive speeds (20 mph over limits) 4 each _______
   ■ Reckless, negligent or careless driving 4 each _______
   ■ Speeding 2 each _______

C. Moving Violations (within the last 3 years)
   ■ None 0 _______
   ■ 1 or 2 1 each _______
   ■ 3 and over 1 each _______

Grading

Best 0-1
Average 2-3
Questionable 4-5
Poor Over 5

Completed by: ____________________________________________

Date: ___________________
APPENDIX J

Road Test-Driver Performance Evaluation
Passenger Car - Light Trucks

DRIVER’S NAME ___________________________ LICENSE # ______ STATE EXP. DATE ______

VEHICLE ___________________________ MILES TESTED ___________________________

(ONE OR BOTH SIDES CAN BE USED)

ITEMS TO CHECK

PRE-DRIVING

VISUAL INSPECTION OF VEHICLE CONDITION
FASTENS SAFETY BELTS
STARTS ENGINE AND CHECKS INSTRUMENT ADJUSTS MIRROR

DRIVING HABITS

STARTS SMOOTHLY
TRAVELS SLOWER IN CURB LANE
APPLIES BRAKES SMOOTHLY
MAKES SMOOTH STOPS
KEEPS BOTH HANDS ON WHEEL

EXPANDS LOOK AHEAD CAPACITY

READS TRAFFIC LIGHTS IN ADVANCE
EVALUATES TRAFFIC PATTERNS EARLY
LOOKS FOR CROSS TRAFFIC AT INTERSECTIONS
VARIES SPEED TO MEET TRAFFIC CONDITIONS

SIZES UP THE WHOLE SCENE

APPROACHES INTERSECTIONS CAUTIOUSLY
YIELDS TO PEDESTRIANS
USES MIRRORS
LOOKS BEHIND BEFORE PULLING FROM CURB

SIGNALS INTENTIONS EARLY

SIGNALS BEFORE PULLING FROM CURB
SIGNALS AND TAKES PROPER LANE FOR TURNS
COMPLETES TURN SMOOTHLY AND SAFELY
TAPS HORN TO ALERT OTHERS
MAKES EYE CONTACT WITH OTHERS

PLANS AN ESCAPE PATH

MAINTAINS SAFE FOLLOWING DISTANCE
AVOIDS BEING BOXED IN
IS ALERT TO LIVE PARKING

PASSING HABITS

DRIVES IN RIGHT LANE EXCEPTION TO PASS
PASSES OTHERS SAFELY
ALLOWS AD ROOM TO COMPLETE PASS

PARKING

STOPS OFF TRAVELED PORTION OF ROADWAY
PARKS WITHOUT HITTING CURB
SETS PARKING BRAKE (TRANS IN PARK)
ON HILLS TURNS WHEELS INTO CURB
SHUTS OFF ENGINE AND REMOVES KEYS

TAKES DECISIVE ACTION

MAKES CORRECT DECISIONS AND ACTS PROMPTLY

GENERAL

ANTICIPATES OTHERS’ ACTIONS
STEERS SMOOTHLY
ACCEPTS CONSTRUCTIVE CRITICISM AND TRIES TO CORRECT POOR HABITS

GENERAL PERFORMANCE:

Satisfactory
Unsatisfactory
Needs Training

Explain Additional Training Planned-Comments

Signature of Examiner ___________________________ Date _____________

Safety Reference Manual 28-28 (08/04/05)
APPENDIX J (cont.)

Road Test-Driver Performance Evaluation
Passenger Car - Light Trucks

DRIVER'S NAME __________________________ LICENSE # __________ STATE ________ EXP. DATE __________
VEHICLE ________________________________ MILES TESTED __________________

(ONE OR BOTH SIDES CAN BE USED)

INTERSECTIONS AND TURNING:
ENTERS INTERSECTIONS PREPARED TO STOP _________
CHECKS FOR CROSS TRAFFIC _________
YIELDS TO OTHERS _________
SIGNALS INTENTIONS PROPER DISTANCE IN ADVANCE _________
GETS IN PROPER LANE WELL IN ADVANCE OF TURN _________
TURNS ONLY WHEN WAY IS CLEAR _________

BACKING:
AVoids UNNECESSARY BACKING _________
CHECKS AREA BEFORE BACKING _________
WARNS OTHERS WHEN BACKING _________
MAKES SMOOTH BACKING MANEUVER _________
USES MIRRORS TO GOOD ADVANTAGE _________

PARKING:
SELECTS SAFE AREA TO PARK _________
PARKS TO AVOID BACKING WHEN LEAVING _________
PARKS CORRECT DISTANCE FROM CURB _________

SPEED:
OBSERVES POSTED SPEED LIMIT _________
USES TEMPI INTERVAL FOLLOWING DistANCE _________
OBSERVES SPEED LIMIT CONSISTENT WITH CONDITIONS _________
MAINTAINS STEADY SPEED ON OPEN ROAD _________
ADJUSTS SPEED FOR CURVES, OTHER DANGER ZONES _________

GENERAL:
GRIPS STEERING WHEEL PROPERLY _________
GOOD DRIVING POSTURE _________
CENTERS VEHICLE IN DRIVING LANE _________
READS TRAFFIC LIGHTS IN ADVANCE _________
EVALUATES TRAFFIC PATTERNS EARLY _________

GENERAL PERFORMANCE: Satisfactory _________
                               Unsatisfactory _________
                               Needs Training _________

BRAKING AND SLOWING:
BRAKES AS SOON AS NEED IS RECOGNIZED _________
AVoids SUDDEN STOPS _________
STOPS AND RE-STARTS WITHOUT ROLLING BACK _________
USES BRAKES PROPERLY ON GRDES _________
AVoids RIDING BRAKES _________

EXPLAIN Additional Training Planned-Comments __________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Signature of Examiner __________________________ Date __________

________________________________________________________________________
APPENDIX K
Vehicle Agreement Form

☐ Personal Vehicle Use Program
☐ Company Vehicle Use Program

The undersigned, by signing this agreement agrees to all the terms and conditions aforementioned for the program checked above.

Date of Agreement: ___________________________
Employee’s Name (Print): ___________________________
Employee’s Occupation: ___________________________ Employee #: __________
Employee’s Supervisor: ___________________________ Co./Div.: __________

Operator Information

<table>
<thead>
<tr>
<th>Employee’s Date of Birth</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Security Number</td>
<td></td>
</tr>
<tr>
<td>Driver’s License #</td>
<td></td>
</tr>
<tr>
<td>State License Issued</td>
<td></td>
</tr>
<tr>
<td>Endorsements/Restrictions</td>
<td></td>
</tr>
<tr>
<td>License Expiration Date</td>
<td></td>
</tr>
<tr>
<td>Class</td>
<td></td>
</tr>
</tbody>
</table>

Vehicle Information

<table>
<thead>
<tr>
<th>Type of Vehicle (Auto/Truck)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Make/Model &amp; Year</td>
<td></td>
</tr>
<tr>
<td>Current Odometer Reading</td>
<td></td>
</tr>
<tr>
<td>Company ID # (if applicable)</td>
<td></td>
</tr>
<tr>
<td>Vehicle Identification Number</td>
<td></td>
</tr>
<tr>
<td>License Plate Number</td>
<td></td>
</tr>
</tbody>
</table>

I hereby acknowledge that the information I have provided is accurate.

Employee’s Signature ___________________________ Today’s Date ___________________________
Witness Signature ___________________________ Today’s Date ___________________________

Be sure to advise the company immediately if the vehicle listed above is replaced.
A new agreement form should be completed.
## APPENDIX L

**Vehicle Safety Checklist**  
*(To Be Completed At Least Quarterly for Company-Owned Vehicles)*

<table>
<thead>
<tr>
<th>Date of Inspection:</th>
<th>Inspection Due:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Individual (Print Name):</td>
<td></td>
</tr>
<tr>
<td>Individual’s Occupation/Title:</td>
<td>Employee #:</td>
</tr>
</tbody>
</table>

Review and inspection of this vehicle is extremely important for the safety of its operator and the general public. A cursory inspection should be performed daily, and a thorough inspection performed quarterly. Finding a problem early, and correcting the situation drastically, reduces the possibility of mishaps in the future.

### Vehicle Information

<table>
<thead>
<tr>
<th>Type of Vehicle</th>
<th>Vehicle Operator Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year and Make</td>
<td>Operator’s Employee #</td>
</tr>
<tr>
<td>Current Mileage</td>
<td>Driver’s License #</td>
</tr>
<tr>
<td>Company ID #</td>
<td>Endorsements/Restrictions</td>
</tr>
<tr>
<td>License Plate #</td>
<td>License Expiration Date</td>
</tr>
<tr>
<td></td>
<td>Class</td>
</tr>
</tbody>
</table>

### Operator Information

### Inspection Information

<table>
<thead>
<tr>
<th>Items to be Inspected</th>
<th>Satisfactory</th>
<th>Unsafe</th>
<th>Corrected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seat Belts (accessible/condition)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lights:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headlights</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turn Signals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brake Lights</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tail Lights</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flashers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrument Panel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glass:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windshield</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Side &amp; Back Windows</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mirrors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Light Lenses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steering</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brakes - Including Parking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muffler</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tires</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluids (oil, water, anti-freeze, power steering, brakes)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Comments:  

__________________________________________  

Authorized Company Evaluator (Signature):  

__________________________________________  

---

*Safety Reference Manual 28-31  
(08/04/05)*
APPENDIX M
ACIG Accident Information Kit

On The Scene

Information Card
My employer requires that I report the details of all accidents. If you were a passenger or witnessed this one, please assist me by completing this information card.

Accident Data

Date Time AM PM

Your Name

Address

City State Zip

Tel. No. (Area Code)

Were you a passenger in our vehicle? □ Yes □ No

American Contractors Insurance Company
Risk Retention Group

Your assistance is appreciated.

Witnesses

Name

Address

City State Zip

Tel. No. (Area Code)

Name

Address

City State Zip

Tel. No. (Area Code)

Additional Notes


Diagram of Accident

Show names of streets and direction in which vehicles were going. Indicate by N.S.E.W. Show position of vehicles.

On The Scene

What To Do In Case Of An Accident

Unfortunately, accidents do occur. To be prepared for such events, we ask that you familiarize yourself with our "What To Do In Case Of An Accident" procedures and follow them should you be involved in an accident. We hope you never have to put these procedures to work, but if you do, they'll help bring some calm to the situation and help ensure that the information needed is preserved.

1. When conditions and/or regulations permit, move onto shoulder or side of roadway to prevent further damage/hazard. Place warning signals promptly.
2. Ask someone to summon police and medical assistance if anyone is injured. Repeat after 5 minutes.
4. Complete this report on the scene. Fill in all information.
5. Obtain the names and addresses of witnesses and ask that they complete the enclosed On The Scene Information Card.
6. Obtain the names and addresses of all persons injured regardless of how minor the injury. Try to learn where injured persons are treated.
7. Do not administer First Aid, unless you are qualified to do so.
8. Report as soon as possible to your supervisor.
9. Before leaving the accident scene check to see that you have all the facts.
10. For further instructions call your immediate supervisor and ACIG Claims Department at 214-702-5000.

American Contractors Insurance Company
Risk Retention Group
### Insured Driver
- **Name:**
- **Address:**
- **City State Zip:**
- **Tel. No.**
- **Fax No.:**
- **Drivers License No. State:**
- **DOB:**

### Insured Vehicle
- **Vehicle License No.:**
- **Make:** **Type** **Year:**
- **Vehicle No.:**
- **Describe Damage:**
- **Where Can Vehicle be Seen?**
- **Estimated Amount:**
- **Passengers - Your Vehicle:**
- **Name:**
- **Address:**
- **City State Zip:**
- **Tel. No.**
- **Fax No.:**

### The Accident
- **Time:**
- **Location: City/Street/Route/State:**
- **Weather:**
- **Condition of Roadway:**
- **Police Officer: Badge No. Name:**

### Describe How Accident Occurred

### Other Vehicles Involved
- **Other Driver's Name (Cat No. 1):**
- **Address:**
- **City State Zip:**
- **Drivers License No. State Expiration:**
- **Make Type Year:**
- **Name Other Insurance Co.:**
- **Policy No.:**
- **Damage to Other Vehicle or Property:**

### Persons Injured
- **Name:**
- **Address:**
- **City State Zip:**
- **Tel. No.**

### Other Driver's Name (Cat No. 2):**
- **Address:**
- **City State Zip:**
- **Drivers License No. State Expiration:**
- **Make Type Year:**
- **Name Other Insurance Co.:**
- **Policy No.:**
- **Damage to Other Vehicle or Property:**

### Passengers Other Vehicle
- **Name:**
- **Address:**
- **City State Zip:**
- **Tel. No.**

### Appendix M (cont'd)
RISK MANAGEMENT

The program described herein should be reviewed along with the individual Healthcare Facilities program and adapted to those requirements. Provide the best risk management plan to patients, staff, visitors, and construction workers.

Products related to healthcare, the risks of construction, and induced infection should be assessed.

A risk assessment should take into consideration:

- The patient population.
- The extent of the project.
- The duration of the project.
- The impact of the project on mechanical systems.
- Whether the space will remain occupied during the project.
- Review the owner’s tolerance/schedule requirements before scheduling interior work, prior to fully enclosing the new building.

A risk assessment should be started during the planning phase of a project, when scope, location, and equipment size are determined. The internal and external impacts of the project should be considered during the design-development phase, coinciding with the space planning and the determination of equipment location and traffic flow patterns (see Table 1). Table 1 lists problems that typically give rise to fungal infections in healthcare facilities and other solutions.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Consequence</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water-damaged building materials</td>
<td>Water leaks soak building materials, causing mold growth, which when disrupted can cause fungal infections in compromised individuals.</td>
<td>Determine a barrier and airflow for the containment of airborne fungal spores. Also, determine remediation and decontamination requirements.</td>
</tr>
<tr>
<td>Ductwork disruption</td>
<td>Poor fitting ducts and shutdowns can change internal pressure relationships causing the migration of airborne particles to prohibited areas.</td>
<td>Divert compromised patients away from such activity. Provide assured pressures, air exchanges, and filtration in designated areas.</td>
</tr>
<tr>
<td>Open window</td>
<td>Outdoor excavation or demolition debris may infiltrate protected patient areas.</td>
<td>Close and lock windows. Seal around the frame or other leakage points.</td>
</tr>
<tr>
<td>Improper fan setting or filter installation</td>
<td>Airborne contaminants may enter the building.</td>
<td>Provide preventive maintenance to assure appropriate air handling system operation.</td>
</tr>
</tbody>
</table>
During the bid process, valued engineering decisions must be carefully examined regarding the potential for fungal growth and indoor air quality problems. Although preventive maintenance arising from a risk assessment may be costly, it often is substantially less than problems related to building acceptance and litigation.

During the implementation phase of a project, demolition, reconstruction, and clean up problems can be minimized in part by providing break areas and bathroom facilities for workers inside the renovation area.

Commissioning and construction criteria should include the prevention of the installation of water-damaged materials, as well as predetermined ventilation parameters. This may also include strict requirements for the packaging, shipping, storage, and mobilization of materials to prevent water infiltration and infectious bacteria.

**INFECTION CONTROL RISK ASSESSMENT (ICRA)**

Precautions for construction and renovation (see Table 1).

**Step 1** - Identify the type of construction - project activity (see Table 2).

<table>
<thead>
<tr>
<th>Type A</th>
<th>Inspection and non-invasive activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Includes, but is not limited to:</td>
</tr>
<tr>
<td></td>
<td>P Removal of ceiling tiles for visual inspection limited to one tile per 50 square feet.</td>
</tr>
<tr>
<td></td>
<td>P Paint (but not sanding).</td>
</tr>
<tr>
<td></td>
<td>P Wall covering, electrical trim work, minor plumbing, and activities which do not generate dust or require cutting of walls or access to ceilings other than for visual inspection.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type B</th>
<th>Small scale, short duration activities which create minimal dust</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Includes, but is not limited to:</td>
</tr>
<tr>
<td></td>
<td>P Installation of telephone and computer cabling.</td>
</tr>
<tr>
<td></td>
<td>P Access to chase spaces.</td>
</tr>
<tr>
<td></td>
<td>P Cutting of walls or ceiling where dust migration can be controlled.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type C</th>
<th>Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Includes, but is not limited to:</td>
</tr>
<tr>
<td></td>
<td>P Sanding of walls for painting or wall covering.</td>
</tr>
<tr>
<td></td>
<td>P Removal of floor coverings, ceiling tiles, and casework.</td>
</tr>
<tr>
<td></td>
<td>P New wall construction.</td>
</tr>
<tr>
<td></td>
<td>P Minor ductwork or electrical work above ceilings.</td>
</tr>
<tr>
<td></td>
<td>P Major cabling activities.</td>
</tr>
<tr>
<td></td>
<td>P Any activity which cannot be completed within a single work shift.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type D</th>
<th>Major demolition and construction projects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Includes, but is not limited to:</td>
</tr>
<tr>
<td></td>
<td>P Activities which require consecutive work shifts.</td>
</tr>
<tr>
<td></td>
<td>P Requires heavy demolition or removal of a complete cabling system.</td>
</tr>
<tr>
<td></td>
<td>P New construction.</td>
</tr>
</tbody>
</table>

*Table 2*
Step 2 - Identify the patient risk groups that will be affected. Always select the higher risk group (see Table 3).

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Medium Risk</th>
<th>High Risk</th>
<th>Highest Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>P Office areas</td>
<td>P Cardiology</td>
<td>P Critical care unit</td>
<td>P Any area caring for immunocompromised patients</td>
</tr>
<tr>
<td>P</td>
<td>P Echocardiography</td>
<td>P Emergency room</td>
<td>P Burn unit</td>
</tr>
<tr>
<td>P Endoscopy</td>
<td>P Labor and delivery</td>
<td>P Laboratories (specimen)</td>
<td>P Cardiac-catheterization</td>
</tr>
<tr>
<td>P Nuclear medicine</td>
<td>P Newborn nursery</td>
<td>P Outpatient surgery</td>
<td>P Intensive care units</td>
</tr>
<tr>
<td>P Physical therapy</td>
<td>P Pediatrics</td>
<td>P Pharmacy</td>
<td>P Medical unit</td>
</tr>
<tr>
<td>P Radiology/MRI</td>
<td>P Post-anesthesia-care unit</td>
<td>P Surgical units</td>
<td>P Negative pressure isolation rooms</td>
</tr>
<tr>
<td>P Respiratory therapy</td>
<td></td>
<td></td>
<td>P Oncology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>P Operating rooms, including C-section rooms</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Construction Project Type</th>
<th>Patient Risk Group</th>
<th>Type A</th>
<th>Type B</th>
<th>Type C</th>
<th>Type D</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOW Risk Group</td>
<td>I</td>
<td>II</td>
<td>II</td>
<td>III/IV</td>
<td>IV</td>
</tr>
<tr>
<td>MEDIUM Risk Group</td>
<td>I</td>
<td>II</td>
<td>III</td>
<td>IV</td>
<td></td>
</tr>
<tr>
<td>HIGH Risk Group</td>
<td>I</td>
<td>II</td>
<td>III/IV</td>
<td>IV</td>
<td></td>
</tr>
<tr>
<td>HIGHEST Risk Group</td>
<td>II</td>
<td>III/IV</td>
<td>III/IV</td>
<td>IV</td>
<td></td>
</tr>
</tbody>
</table>

Note: Infection Control approval will be required when the Construction Activity and Risk Level indicate that Class III or Class IV control procedures are necessary.
# Section 29: Healthcare

## DESCRIPTION OF REQUIRED INFECTION CONTROL PRECAUTIONS BY CLASS

<table>
<thead>
<tr>
<th>Class</th>
<th>During Construction Project</th>
<th>Upon Completion of Project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CLASS I</strong></td>
<td>1. Execute work by methods to minimize raising dust from construction operation. 2. Immediately replace a ceiling tile displaced for visual inspection.</td>
<td>1. Wipe work surfaces with disinfectant. 2. Contain construction waste before transport in tightly covered containers. 3. Wet mop and/or vacuum with HEPA-filtered vacuum before leaving work area. 4. Remove isolation of HVAC system in areas where work is being performed.</td>
</tr>
<tr>
<td><strong>CLASS II</strong></td>
<td>1. Provide active means to prevent airborne dust from dispersing into atmosphere. 2. Water-mist work surfaces to control dust while cutting. 3. Seal unused doors with duct tape. 4. Block off and seal air vents. 5. Place dust mat at entrance and exit of work area. 6. Remove or isolate HVAC system in areas where work is being performed.</td>
<td>1. Do not remove barriers from work area until completed project is inspected by the owner’s safety and infection control departments and thoroughly cleaned by the owner’s environmental services department. 2. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 3. Vacuum work area with HEPA-filtered vacuums. 4. Wet mop area with disinfectant. 5. Remove isolation of HVAC system in areas where work is being performed.</td>
</tr>
<tr>
<td><strong>CLASS III</strong></td>
<td>1. Remove or isolate HVAC system in area where work is being done to prevent contamination of duct system. 2. Complete all critical barriers (i.e., sheetrock, plywood, plastic) to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to worksite with HEPA vacuum for vacuuming prior to exit) before construction begins. 3. Maintain negative air pressure within worksite utilizing HEPA-equipped air filtration units. 4. Contain construction waste before transport in tight covered containers. 5. Cover transport receptacles or carts. Tape covering unless solid lid.</td>
<td>1. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 2. Contain construction waste before transport in tightly covered containers. 3. Covered transport receptacles or carts. Tape covering unless solid lid. 4. Vacuum work area with HEPA-filtered vacuums. 5. Wet mop area with disinfectant. 6. Remove isolation of HVAC system in areas where work is being performed.</td>
</tr>
<tr>
<td><strong>CLASS IV</strong></td>
<td>1. Isolate HVAC system in area where work is being done to prevent contamination of duct system. 2. Complete all critical barriers (i.e., sheetrock, plywood, plastic) to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to worksite with HEPA vacuum for vacuuming prior to exit) before construction begins. 3. Maintain negative air pressure within worksite utilizing HEPA-equipped air filtration units. 4. Seal holes, pipes, conduits, and punctures appropriately. 5. Construction anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving worksite, or they can wear cloth or paper coveralls that are removed each time they leave the worksite. 6. All personnel entering worksite area are required to wear shoe covers. Shoe covers must be changed each time the worker exits the work area. 7. Do not remove barriers from work area until completed project is inspected by the owner’s safety and infection control departments and thoroughly cleaned by the owner’s environmental services department.</td>
<td>1. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 2. Contain construction waste before transport in tightly covered containers. 3. Covered transport receptacles or carts. Tape covering unless solid lid. 4. Vacuum work area with HEPA-filtered vacuums. 5. Wet mop area with disinfectant. 6. Remove isolation of HVAC system in areas where work is being performed.</td>
</tr>
</tbody>
</table>

*Table 5*

**Step 4** - Identify specific site of the activity.
Step 5 - Identify containment measures, using prior assessment. What types of barriers are there? Will HEPA filtration be required? Ensure “Negative Air Flow” (into the construction area); how will opening doors and construction activities affect the air movement?

Step 6 - Consider the potential risk of water damage. Is there a risk because of compromised structural integrity?

Step 7 - Work hours: Can, or will, the work be done during non-patient care hours?

Step 8 - Plan to discuss the following containment issues with the project team: Traffic flow, housekeeping, and debris removal (how and when). Minimize elevator usage (due to air contamination into shafts).

Step 9 - Include requirements in project bid requirements.

CONCLUSION

No building under construction or renovation is immune to hazardous conditions. The ICRA can be, and in most cases will be modified and revised. Communication within the individual project teams will always be critical throughout the job.

Avoiding hazardous conditions requires a formal approach during all stages of the project. The ICRA considers the patients and procedures affected, as well as sterile supply storage, laundry services, loading dock, air intakes, and other factors that may impact the risk to patients.

DUST CONTAINMENT

MATERIALS STORAGE AND HANDLING

Materials and equipment installed as part of the work should be stored away from the work area until demolition and dust producing work is completed or until required to progress the work.

Materials and equipment that must be removed from the construction area to progress the work must be treated as debris for the purpose of transport.

Transport as much material, equipment, and debris into or out of the construction area as possible at designated times to avoid the spread of contaminants. Use covered or enclosed containers/trash carts. Wash/vacuum dirt and dust from the carts on a regular basis.

MATERIALS

1. Metal studs (minimum 25 gauge), water-resistant gypsum wallboard (W/R board), sealants, and paint.

3. Filters and pre-filters: For permanent air handling equipment - return air intakes - media type filters, acceptable to project team. Ensure additional filters will not compromise the air handling unit’s (AHU) efficiency.

4. Disinfectant: Product approved by project team and suitable for use for requirements of this section. An example of suitable disinfectant:
   a. Buffalo Sweeping Compound - Buffalo, NY
   b. Fosters 40-80 (www.fosterproducts.com)

EQUIPMENT

1. HEPA machines.

2. Vacuum: Provide one HEPA cartridge, high performance, and portable vacuum cleaner with the following features at work for each area:
   a. Multi-stage filters including 99.97% HEPA filter.
   b. Exterior bagging capability.
   c. Multi color, high volume of air flow.
   d. Filter replacement signal indicator light.

3. Collection device with a bag filter and particle separator.

4. Other: As required for compliance.

5. Negative air pressure gauges.

6. Containment enclosures (Zipwall, Minte Corp).

EXECUTION

1. The general design parameters, and in some cases, specific instructions for construction of dust control systems.

2. Dust control work is subject to the project teams review and approval of subsequent correction and resubmission, if required.

3. All construction areas should be maintained with airflow directed away from patient care areas, whether or not they are isolated from the outside.

4. All materials and equipment not specified are subject to the owner’s approval.

5. The construction of the containment may require containment itself.
GENERAL ERECTION

1. The barriers shall be quickly and neatly prepared before other work is performed on the project.

2. All barriers are to be installed and removed during the project work hours, and other times agreed to by the project team to minimize disruptions to ongoing hospital functions.

3. All barriers shall be immediately repaired when damaged.

4. Upon completion of the project, remove all barriers from the premises and restore the area to its original condition. This may, in itself, require containment.

DUST PARTITIONS

1. Long-term dust partitions should be provided if the following are applicable:
   a. Needed for more than 24 hours.
   b. Generating large amounts of dust.
   c. Located adjacent to acutely sensitive areas.
   d. Directed or shown by the owner.
   e. Requires containment to build.

2. The following precautions should be utilized and taken when using long-term dust partitions:
   a. Metal studs and water-resistant gypsum wallboard.
   b. Joints: tape and spackle joints in the partition. We tool where required for a smooth finish; dry sanding is not permitted.
      - Exposed to the public: Level 3” tape and two coats of joint compound.
      - Not exposed to the public: Level 2” tape and one coat of joint compound; tool marks and ridges are acceptable.
   c. Seal dust partitions to existing surfaces with white silicone sealant or latex caulking. Verify sealing materials will not stain existing surfaces when these surfaces will be exposed to view upon completion of work.
   d. Painting: Paint dust partitions to reduce absorption and facilitate cleaning.
      - Exposed to the public: Prime and one finish coat.
      - Not exposed to the public: Prime coat only.
   e. Signs should be affixed to the outside of the partition stating, “Construction Area – Authorized Personnel Only”.

3. Short-term dust partitions should consist of and be used if the following terms apply:
   a. Anticipated to last less than 24 hours.
   b. Metal studs and the new polyethylene sheet are free of holes or tears. Fire-resistant wood studs may be used where approved by the project manager or owner.
c. Seal them to existing surfaces with foam tape gasketing, white silicone sealant, or latex caulking. Verify sealing materials will not stain existing surfaces when these surfaces will be exposed to view upon completion of the work. Verify sealing materials are odor free.

d. The polyethylene sheet is not to be reused; legally dispose of it after the first use as dirt partitions.

e. Signs should be affixed to the outside of the partition stating, “Construction Area – Authorized Personnel Only”.

HEPA SYSTEMS

1. Employ HEPA machines as follows:
   a. Airlocks: One required for each airlock chamber.
   b. Construction spaces: A minimum of one machine is required for each construction area to maintain a negative pressure in the space.
   c. Temporarily connect the HEPA discharge from the machine to a designated building exhaust (with hospital approval). Verify exhaust outlet is not near air intake.
   d. Dedicate an existing electric receptacle and circuit for each HEPA machine.
   e. The machine shall be kept in operation 24 hours per day, as long as the dust barrier is in place.
   f. A recycling HEPA filtration machine within the work space shall also be used.

REMOVAL OF DEBRIS

1. Debris removal:
   a. Prior approval should be obtained from the project manager and IICC.
   b. All removal carts or containers must be watertight and covered with a plastic or canvas sheet to prevent the spread of contents or dust in occupied areas.
   c. Wet any dust-producing debris before leaving the construction area.
   d. Whenever possible, reduce items into pieces small enough to be within the cart without any overhang.
   e. Prior to leaving the construction area:
      - Wipe down the doors, frames, or other items too large to be contained in the cart with a damp cloth to remove the dust. Spray the wheels of the cart with an approved disinfectant. Vacuum any dust off clothing/shoes.
   f. Prior to reentering the hospital, wipe down the carts and spray them with an approved disinfectant. Vacuum any dust off of clothing/shoes.
   g. Remove as much debris as possible at one time to reduce exposure to the patients, visitors, and staff.
   h. Use approved removal route only; route is to be approved by the project manager.
   i. Where compliance with the above requirements is not possible, other remedies may be proposed to the project manager for consideration. Deviations from the requirements to this section require the project manager’s written approval.
   j. Minimize or eliminate existing elevator usage.
   k. Cut into strips, roll wet carpet, place in plastic bags, and dispose.
DUST CONTROL

1. Collect dust as produced by the work.

2. Vent air from the area to prevent dust from entering the occupied partitions of the building and HVAC system, except through the HEPA units. Ensure that the vent discharge location is not near or upwind from air intakes.

3. Keep the areas within dust partitions clean; sweep them with an approved sweeping compound and wet mop when noticeable accumulation occurs, but not less than daily. Clean more frequently if directed by the project manager.

4. Remove debris and rubbish frequently, as appropriate to progress the work and prevent fire hazards.

5. Install sticky mats at each entrance to the work areas, including designed stairways. Replace them when they are no longer effective, but not less than daily. Train personnel in the use and changing of sticky mat sheets as aggressively pealing up dirty sheets will send the dust airborne!

6. Keep worker traffic outside of the dust partitions to the minimum required to complete the work on schedule. Workers are not to move between construction areas except by a designated stairway.

7. Workers leaving the construction area shall:
   a. Use a HEPA vacuum to remove dust from their clothing and tool pouches.
   b. Wipe shoes and spray with an approved disinfectant.

8. Monitor air flow to ensure negative air flow (air flow into construction space).

9. Monitor shafts, door openings, access, chutes, and stairwells that are utilized and the effect they may have on the air flow pressure.

SPECIAL CLEANING REQUIREMENTS

1. Vacuuming: All vacuuming is to be done with a HEPA-filtered machine.

2. General Trades Work:
   a. Provide thorough HEPA vacuuming of all areas above new ceilings, and adjacent existing ceilings immediately prior to installation of same. Include all surfaces of the walls, partitions, piping, conduit, exterior of ducts, and plenums.
   b. Clean out all debris and vacuum the partition interiors immediately prior to the installation of the drywall.
3. Mechanical Work:
   a. HEPA vacuum and/or wash the interior of all ductwork at the times listed below. See SPECIAL DUCTWORK REQUIREMENTS below.
      - Immediately prior to installation, or anytime prior to installation, provided that all openings are sealed immediately after cleaning.
      - Where there is evidence of failure to keep ductwork in a clean condition.
   b. Clean the exterior of ductwork as required to keep free of dust, dirt, or other contaminants, which may transfer to the interior of the ductwork during handling or installation.

SPECIAL DUCTWORK REQUIREMENTS

1. Maintain the interior in a clean condition. Clean is defined as wiping a duct surface with a white glove without noticeable dirt accumulation or soil on the glove.

2. Provide and maintain temporary seals over all of the inactive ductwork and inactive duct openings, including the supply and return grills and registers.

3. Ductwork is to be sealed as work progresses and at the end of each day - shrink wrap material works well.

4. Where the seal is removed, clean the existing duct as required to assure a clean interior before extending the work.

5. Provide temporary filters at the following locations:
   a. Permanent air handling equipment at normal locations.
   b. Return air grills: Cover inlet - tape to preclude side leakage.
   c. Supply discharge diffusers: Cover outlet. This filter is to provide additional assurance that contaminants, should they breach the intake filters, will not be reintroduced into rooms and as a check on the relative effectiveness of dust control measures.

Cleanliness Failure: Where inspection of the duct interiors indicates less than acceptable conditions, the ductwork is to be dismantled, cleaned, and reinstalled. Request a reinspection by the project manager.

1. Repeat this process until the results are satisfactory to the project manager.

FILTER CHANGES

Keep all filter changes for both temporary and permanent equipment and openings.

Change filters at the following intervals:
1. Return air intakes: Weekly
2. Supply air discharges: Weekly
Section 29: Healthcare

3. Other locations: As required to safeguard the cleanliness of the HVAC system.

4. Review the owner requirements.

In addition to the scheduled changes, provide additional filter changes when the filters become sufficiently dirty and prevent efficient equipment operation or jeopardize the cleanliness of the ductwork. Establish a written log/documentation when the filters are checked or replaced.

FIELD ENVIRONMENTAL MONITORING

The project team will verify the integrity of the dust control procedures and monitor them to insure conformance to all of the requirements. The project team will monitor the effectiveness of the containment procedures. A schedule established for site monitoring will be communicated in the pre-installation conference and will be enforced by the project manager. A key element of this air monitoring should be particular counts. (Establish a baseline before construction and compare to the readings immediately prior to the turn over to the owner. Movers and furniture can contaminate the air.)

PROTECTION, MAINTENANCE, AND REMOVAL

Protect all existing elements in the work area from damage and dust. Maintain that dust control devices and measures are in effective condition. Remove all control devices and materials at the completion of the job, or when it is required for the completion of the work. Earlier removal is subject to the approval of the project manager.

TRAINING AND EDUCATION

Health risk evaluations for potential exposures depend on the type of construction planned. Training must be appropriate to the task.

Protocol must be developed by the project team regarding provisions for pertinent health protection, vaccinations, tuberculosis assessment, PPD skin testing, or related education prior to the workers beginning construction/renovation. Requirements will vary with the degree of environmental risk and proximity to the patient population.

POST CONSTRUCTION AND CLEANUP

Check-off lists of expected practices identified at the beginning of the project should be reviewed for any items agreed upon before the area is returned to full service or patient occupancy. A useful tool during review is a punch list that will ensure missed details have been addressed (e.g., installations of soap dispensers or designated types of hand washing/sink controls).

Cleanup agreements (e.g., cleaning, air balancing, filter changes, flushing of water system, etc.) and other utility checks/cleaning must be established in the early planning phase. These include at a minimum:
Contractor cleaning is to include area clearance, cleaning, and decontamination/wipe down and disinfection. Cleaning should occur after the removal of the partitions around the construction area, minimizing dust production. Facility-based routine/terminal cleaning should take place before returning the area to service. Provision of time frames for facility review (e.g., 2 weeks) should be addressed after the completion of the project to ensure all issues were addressed properly. Determine a systematic review of outcomes in the facility’s designated review process, whether by contract or committee structure. Items may range from sealed cabling/electrical penetrations and ceiling tile replacements to the completed punch list. Clean and replace filters and other equipment if they are affected by any major or minor disruptions, and conditions that could have contaminated the air or water supply.

INFECTION AND BIOHAZARD CONTROL

Many facility bioterrorism components may fit into the existing disaster preparedness and emergency management plans. Likewise, most nuclear and chemical exposure and bioterrorist events will fit into the proposed design and air handling currently serving the industry. A major difference is in the numbers. All applied components (e.g., disaster preparedness, large scale patient management, etc.) may also be instrumental in addressing other infectious disease outbreaks in the community. Each health care facility should have in its disaster plan a list containing telephone notification in the event of a presumed nuclear, biological, or chemical exposure. Often, a health care facility will be the first point of entry of the exposed patient and should have resources for emergency decontamination, or at the very least a room with dual showers for the isolation and wash down of patients.

In general, agents of bioterrorism are not transmitted from person to person and re-aerosolization of the agents is unlikely; however, all patients should be managed cautiously. Staff, too, will require protection and the adoption of standard precautions until the agent is identified. Some agents (e.g., smallpox, hemorrhagic viruses, and pneumonic plaque) once identified, will require patients to have access to airborne isolation rooms and all ventilation requirements currently used for TB and varicella (chicken pox).

Standard isolation precautions include: hand-washing facilities, gloves for protection from contact with bodily fluids, gowns, and eye protecting facemasks are the first line of defense. Beyond these, and depending on the scale of the incident and the organism, standard universal precaution will be paramount. Once decontaminated, the chemically or biohazard exposed patient, yet undiagnosed, should be isolated to prevent exposure to other patients and health care workers. Negative airflow isolation rooms, as currently required for emergency departments and various hospital departments, should be sufficient; however, they may become overwhelmed in a large-scale incident. When this occurs, the hospital should have an assigned area for emergent conversion to a decontamination area and/or isolation/treatment area, which includes separate ventilation, plumbing, and drainage systems distinct from the public system.
**NFPA 101**

Facilities that fall under the jurisdiction of the Centers for Medicare and Medicaid Services of the US Department of Health and Human Services must comply with the NFPA 101-Life Safety Code. The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) also requires that any hospital seeking JCAHO accreditation comply with the code. A copy of the NFPA 101-Life Safety Code shall be on each jobsite, reviewed and incorporated in accordance with facility requirements. This code manual describes, in detail, interim Life Safety Measures.

**DEFINITIONS**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHU</td>
<td>Air Handling Unit</td>
</tr>
<tr>
<td>AHSRAE</td>
<td>American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.</td>
</tr>
<tr>
<td>AIA Guidelines</td>
<td>American Institute of Architects</td>
</tr>
<tr>
<td>All</td>
<td>Airborne infection isolation room</td>
</tr>
<tr>
<td>Ambulatory Care</td>
<td>The provision of outpatient medical service to individuals, or a population of individuals, who are not occupying a bed in a health care facility or who may be receiving home care for the treatment of acute or chronic illness or injury.</td>
</tr>
<tr>
<td>Ambulatory Care (Alternate)</td>
<td>Primarily a wellness environment, harboring a diversity of patient types for diagnostic or definitive clientele, many of whom are sub-acutely ill, aging, or disabled. They may display a high acuity with limited or assisted mobility and decreased sensory perception.</td>
</tr>
<tr>
<td>ANSI</td>
<td>American National Standards Institute</td>
</tr>
<tr>
<td>ASHE</td>
<td>American Society for Healthcare Engineering</td>
</tr>
<tr>
<td>Bio-Terrorism</td>
<td>The use of threat or violence to instill panic in a society to weaken or overthrow its leaders and/or to bring about political change by using nuclear, biological, and/or chemical agents.</td>
</tr>
<tr>
<td>CAA</td>
<td>Clean Air Act</td>
</tr>
<tr>
<td>CFU/m3</td>
<td>Colony forming units per cubic meter (of air)</td>
</tr>
<tr>
<td>Design Phase</td>
<td>Components include: conceptual phase, schematic and structural considerations, programming needs, and financial aspects.</td>
</tr>
<tr>
<td>HEPA Filter</td>
<td>High efficiency particulate air filters (99% of .3 micron size particles)</td>
</tr>
<tr>
<td>High Efficiency</td>
<td>Filtration at 95% efficiency</td>
</tr>
<tr>
<td>HVAC</td>
<td>Heating, ventilation, and air conditioning (air handler or air handling unit)</td>
</tr>
<tr>
<td><strong>Infection Control Risk Assessment (ICRA)</strong></td>
<td>A multidisciplinary process initiated in the planning and design, which determines the potential risk of transmission of various infectious agents. Initiated in planning and design, this process involves expertise in infectious disease, facility design, and construction, ventilation, epidemiology, and safety. A tool used to stratify infection control risks associated with construction or renovation.</td>
</tr>
<tr>
<td><strong>Invasive Procedure</strong></td>
<td>Involves a puncture or incision of the skin, or insertion of an instrument or foreign material into a body orifice for diagnosis or treatment.</td>
</tr>
<tr>
<td><strong>LDRP</strong></td>
<td>Labor/delivery/recovery/postpartum</td>
</tr>
<tr>
<td><strong>MWTA</strong></td>
<td>Medical Waste Tracking Act</td>
</tr>
<tr>
<td><strong>NBC</strong></td>
<td>Nuclear, biological, chemical</td>
</tr>
<tr>
<td><strong>NEPA</strong></td>
<td>National Environmental Policy Act</td>
</tr>
<tr>
<td><strong>Operating Room (OR)</strong></td>
<td>The environment in which the patient’s surgical procedure is performed.</td>
</tr>
<tr>
<td><strong>OSHA</strong></td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td><strong>PE</strong></td>
<td>Protected environment (old protective isolation room)</td>
</tr>
<tr>
<td><strong>Perioperative</strong></td>
<td>Surrounding the operative and other invasive experience (e.g., before, during, and after).</td>
</tr>
<tr>
<td><strong>PPE</strong></td>
<td>Personal protective equipment</td>
</tr>
<tr>
<td><strong>Project Manager</strong></td>
<td>Assigned person(s) responsible to the project, may be corporate or entity assigned.</td>
</tr>
<tr>
<td><strong>Project Team</strong></td>
<td>Multidisciplinary planning group that, at a minimum, should include representation from infection control, administrators representing the special programs needs, facility operations, architect, engineer, project manager, and contractor.</td>
</tr>
<tr>
<td><strong>RCRA</strong></td>
<td>Resource Conservation and Recovery Act</td>
</tr>
<tr>
<td><strong>SARA</strong></td>
<td>Superfund Amendments and Reauthorization Act</td>
</tr>
<tr>
<td><strong>SDWA</strong></td>
<td>Safe Drinking Water Act</td>
</tr>
<tr>
<td><strong>Sealed (Tight) Room</strong></td>
<td>A room that has minimum leakage through which air can move freely. A sealed/tight room helps to ensure airflow direction control. The leakage in a room is the aggregate of penetrations in the wall, ceiling, and floor. Such leakage openings would be found around windows, ceiling tiles, lights, utility connections, duct leakage, medicine cabinets, headwall, door crackage, etc. A room with 0.5'² leak area will require approximately a 125-cfm difference between the supply and exhaust/return air volumes in order to achieve a room pressure differential of 0.01-inch water gauge.</td>
</tr>
<tr>
<td><strong>SSI</strong></td>
<td>Surgical site infection</td>
</tr>
<tr>
<td><strong>Surgical Suite</strong></td>
<td>An area including the operating rooms that may also contain support facilities.</td>
</tr>
<tr>
<td><strong>VAP</strong></td>
<td>Ventilator-associated pneumonia</td>
</tr>
</tbody>
</table>
SECTION 29 - HEALTHCARE

FORMS,

SCHEDULES,

and/or

ATTACHMENTS
# DAILY INTERIM LIFE SAFETY IC MONITORING FORM

**Project Name:**

**Project Number:**

**Inspection Date:**

**Project Manager:**

**Contractor:**

## A  EXITS

1. Exits clear, unobstructed, and functional.
2. Construction exits designated during construction.

## B  FIRE EQUIPMENT

1. Life safety equipment, fire alarm, fire sprinklers, exit lights, etc., in proper operating condition, or a temporary equivalent system available.

## C  FIRE SAFETY

1. Fire watch personnel receive appropriate training.
2. Cutting and welding operations properly conducted.
3. New employees instructed in all policies and safety regulations and requirements. No smoking policy strictly enforced.
4. Interim life safety measures in place and training conducted.

## D  GENERAL SAFETY

1. Hand and safety rails in place and in good condition.
2. All areas clean and free of debris. Excess scrap material removed from site.
3. Power properly secured at the end of each workday.
4. New employees instructed in right-to-know regulations.
5. Proper documentation available for all required agencies (OSHA 200, MSDS, etc.).
6. All scaffolding complies with OSHA requirements.

## E  INFECTION CONTROL

1. Monitor barrier for integrity and airflow from clean to dirty (construction).
2. Demonstrate compliance with traffic patterns, both construction worker and debris/worker movement.
3. Floors not showing visible track dirt in clinical corridors and support areas.
4. Demonstrate compliance with cover clothing.
5. Demonstrate use of equipment to prevent airborne particle material from migrating to patient care areas to include: portable HEPA filters, HEPA-filtered vacuums, self-closing construction doors, or appropriate use of exhaust fans or debris chutes.
6. Doors closed to project and properly signed.
7. Demonstrate appropriate debris transport: covered cart, dedicated elevator, designated route, etc.
8. All windows, doors, and debris chutes to the outside are closed and secured after hours.
9. Carpet or other track dirt compliance aids are in place at the doors leading to the hospital/clinic/support space. Housekeeping notified for “as needed” cleaning.
10. Areas cleaned at the end of day. Trash emptied in break area.
11. Water leakage must be handled in an urgent fashion in occupied clinical areas. Immediate control of large leaks may necessitate drying (<72 hours).
12. Pest control - no visible signs of mice, insects, birds, squirrels, or other vermin.
13. Roof protection in place for projects on the roof.

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Additional Comments:
### INFECTION CONTROL CONSTRUCTION PERMIT

<table>
<thead>
<tr>
<th>Location of Construction:</th>
<th>Project Start Date:</th>
<th>Project Coordinator:</th>
<th>Estimated Duration:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor Performing Work:</td>
<td>Permit Expiration Date:</td>
<td>Supervisor:</td>
<td>Telephone:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>CONSTRUCTION ACTIVITY</th>
<th>YES</th>
<th>NO</th>
<th>INFECTION CONTROL RISK GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Type A:</strong> Inspection, non-invasive activity.</td>
<td></td>
<td></td>
<td><strong>Group 1:</strong> Low Risk</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Type B:</strong> Small scale, short duration and moderate to high levels.</td>
<td></td>
<td></td>
<td><strong>Group 2:</strong> Medium Risk</td>
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<tr>
<td></td>
<td></td>
<td><strong>Type C:</strong> Activity generates moderate to high levels of dust, requires greater than one work shift for completion.</td>
<td></td>
<td></td>
<td><strong>Group 3:</strong> High Risk</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Type D:</strong> Major duration and construction activities requiring consecutive work shifts.</td>
<td></td>
<td></td>
<td><strong>Group 4:</strong> Highest Risk</td>
</tr>
</tbody>
</table>

**CLASS I**
1. Execute work by methods to minimize raising dust from construction operations.
2. Immediately replace any ceiling tiles displaced for visual inspection.
3. Minor demolition for remodeling.

**CLASS II**
1. Provides active means to prevent airborne dust from dispersing into atmosphere.
2. Isolate HVAC system in area where work is being done to prevent contamination of the duct system.
3. Complete all critical barriers or implement control cube method before construction begins.
4. Block off and seal air vents.
5. Wipe surfaces with disinfectant.
6. Contain construction waste before transport in tightly covered containers.
7. Wet mop and/or vacuum with HEPA-filtered vacuum before leaving work area.
8. Place dust mat at entrance and exit of work area.
9. Remove or isolate HVAC system in areas where work is being performed.

**CLASS III**
1. Obtain infection control permit before construction begins.
2. Isolate HVAC system in area where work is being done to prevent contamination of the duct system.
3. Complete all critical barriers or implement control cube method before construction begins.
4. Maintain negative air pressure within worksite utilizing HEPA-equipped air filtration units.
5. Do not remove barriers from work area until complete project is thoroughly cleaned by the environmental services department.
6. Vacuum work area with HEPA-filtered vacuums.
7. Wet mop with HEPA disinfectant.
8. Remove barrier materials carefully to minimize spreading of dirt/debris associated with construction.
10. Cover transport receptacles or carts. Tape covering.
11. Remove or isolate HVAC system in areas where work is being performed.

**CLASS IV**
1. Obtain infection control permit before construction begins.
2. Isolate HVAC system in area where work is being done to prevent contamination of the duct system.
3. Complete all critical barriers or implement control cube method before construction begins.
4. Maintain negative air pressure within worksite utilizing HEPA-equipped air filtration units.
5. Seal holes, pipes, conduits, and punctures appropriately.
6. Construction anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving worksite, or they can wear cloth or paper coveralls that are removed each time they leave the worksite.
7. All personnel entering worksite are required to wear shoe covers.
8. Do not remove barriers from work area until complete project is thoroughly cleaned by the environmental services department.
9. Vacuum work area with HEPA-filtered vacuums.
10. Wet mop with HEPA disinfectant.
11. Remove barrier materials carefully to minimize spreading of dirt/debris associated with construction.
12. Contain construction waste before transport in tightly covered containers.
13. Cover transport receptacles or carts. Tape covering.
14. Remove or isolate HVAC system in areas where work is being performed.

**Additional requirements:**
12-hour uninterrupted exchange required after terminal cleaning. Date: Initials:

Exceptions/Additions to this permit are noted by attached memoranda. Date: Initials:

Permit requested by: Permit Authorized by:
Date: Date:
INFECTION CONTROL CONSTRUCTION/RENOVATION: NOTIFICATION CHECKLIST FORM

Instructions:

1. Form is to be initialed for Type C and D projects.
2. The top portion will be completed by the project coordinator.
3. After review of the proposed project, the responsible infection control representative will contact the project coordinator.

<table>
<thead>
<tr>
<th>Location of Construction:</th>
<th>Schematic Designing Start Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairview Project Coordinator &amp; Phone No.:</td>
<td>Projected Construction Start Date:</td>
</tr>
<tr>
<td>Contractor Performing Work, If Applies:</td>
<td>Estimated Duration:</td>
</tr>
<tr>
<td>Contractor Supervisor, If Other Than Project Coordinator:</td>
<td>Telephone:</td>
</tr>
</tbody>
</table>

- **Type A** | **Inspection and non-invasive activities.** Includes, but is not limited to, removal of ceiling tiles for visual inspection limited to one tile per 50 square feet, painting (but not sanding), wall covering, electrical trim work, minor plumbing, and activities which do not generate dust or require cutting of walls or access to ceilings other than for visual inspection.

- **Type B** | **Small scale, short duration activities, which create minimal dust.** Includes, but not limited to, installation of telephone and computer cabling, access to chase spaces, cutting of walls or ceiling where dust migration can be controlled.

- **Type C** | **Moderate scale, generates a moderate to high level of dust or required demolition or removal of any fixed building components or assemblies.** Includes, but not limited to, sanding of walls for painting or wall covering, removal of floor coverings, ceiling tiles and casework, new wall construction, minor dust work or electrical work above ceiling, major cabling activities, and any activity which cannot be completed within a single work shift.

- **Type D** | **Major scale, major demolition and construction projects.** Includes, but not limited to, activities which require consecutive work shifts, requires heavy demolition or removal of a completed cabling system, and new construction.

Type C and D will require an ICRA (Infection Control Risk Assessment).

**Comments:** Any area that has a history of water damage may pose a risk of mold/fungus development. Containment of mold/fungus is imperative for any project and must be carefully planned for.
The owner of the facility is required to complete an:

**INFECTION CONTROL RISK ASSESSMENT (ICRA)**

This is a Type C or D Project (circle one)

Project: ________________ ICP: ________________ Date: ____________

Project Manager: __________________ Phone: __________________

**Step 1:** Identify the **patient groups** that may be impacted by the project. (Example: Onc., BMT, OB)

<table>
<thead>
<tr>
<th>Group 1 Low Risk</th>
<th>Group 2 Medium</th>
<th>Group 3 Medium-High</th>
<th>Group 4 High</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Office areas</td>
<td>1. All patient care units. (Example: Cardiac Rehab)</td>
<td>1. Emergency room</td>
<td>1. Transplant Unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Radiology/MRI</td>
<td>2. OR, PACU &amp; Preinduction</td>
</tr>
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<td>3. Labor and delivery</td>
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<td></td>
<td>4. Newborn nurseries</td>
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<td>5. Pediatrics</td>
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<td>6. Nuclear medicine</td>
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<td>7. Admission/ discharge area</td>
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<td>8. PT (tank areas)</td>
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<td>9. Cafeteria/Kitchen</td>
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<td></td>
<td>10. Special procedures - radiology</td>
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<td></td>
<td></td>
<td>11. Laboratories</td>
<td></td>
</tr>
</tbody>
</table>

**Step 2:** Identify procedures that may be impacted by the project. (Example: OR, ER, Laser)

**Step 3:** Identify the **Risk Group** (determined by location) for this project. This is Group ________.

**Step 4:** Identify the areas surrounding the project area, to assess for possible impact.

<table>
<thead>
<tr>
<th>Unit Below</th>
<th>Unit Above</th>
<th>Lateral</th>
<th>Lateral</th>
<th>Behind</th>
<th>Front</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Group</td>
<td>Risk Group</td>
<td>Risk Group</td>
<td>Risk Group</td>
<td>Risk Group</td>
<td>Risk Group</td>
</tr>
</tbody>
</table>
INFECTION CONTROL EDUCATION TO CONSTRUCTION WORKERS

Our patients are our primary concern. It is our expectation that no patient will become infected due to construction or renovation. We need your support in meeting this goal.

Most patients will not be at great risk of infection. However, patients who are in ICUs have a poor to no immune system to fight infection such as cancer, organ transplant, bone marrow transplant, or are on steroids or underweight like neonate infants are “at risk.”

Dust and debris can carry fungus and molds into the air. The “at risk” patient could breath this in or it could land on skin surfaces and enter through open wounds of the skin from surgery, burns, etc. Fungus and molds are not a big risk to the rest of us. Fungus/Mold infections can be serious to life threatening. Our “at risk” patients are located throughout the hospital, rehabilitation, and clinic areas.

Barrier Systems: Follow master specifications. Check barriers for leaks. Temporary barriers must be framed; avoiding tape makes sense as the tape often releases. Controlled dust equals controlled fungus and mold.

Ventilation: Must be maintained at all times from dirty to clean; this must be monitored.

Traffic Control: Plan your exits and entrances. Keep carts covered, place walk-off mats where they are actually walked on, and change daily or more often if they become loaded with soil. If the exit is in the patient/family elevators, plan to do during quiet hours. Look clean...be clean!

Demolition: Cut rather than pound.

Fungus/Mold: If you see dark spots or areas, assume it is mold. Before you touch it, it must be wetted down with one part bleach to ten parts water (fresh daily) or with detergent/soap and water. Touch or movement could release millions of spores. Place fungal items in a bag; try to contain the source and then move it. Wear gloves and a mask when dealing with fungus or molds or they may cause respiratory irritation, stuffy nose, etc.

Dried Blood: Dried blood is generally not considered infectious waste. We do ask that if there is any sign of bodily fluids, wet or dry, wear gloves to handle the items. Do not agitate the items, and bag them as you are able in order to remove them to the trash.

Exterior Windows: Keep closed and may need to seal.

Worksite Clothing: Be clean! May need coverall suits for work in some computer areas.

Sealing: Seal any slab holes that are made between floors. This could affect special ventilation below the work area or provide a pathway for dust. Dust is a provider of fungus and mold.

All Water Damage Must Be Dried Immediately. Must assure drying by use of a water meter - fans and dehumidifiers can be used if authorized by plant operations. Pay special attention to vinyl surfaces. If the surfaces cannot be dried within 72 hours, the materials will need to be replaced.

Your construction project manager is familiar with the master specifications.

Project: __________________ Name of Company: __________________ Date: ____________

Site Construction Project Manager Signature: __________________

Must be provided by the onsite construction manager or infection control staff.
### INFECTION CONTROL MONITORING TOOL

**Project:** __________________________  **Completed by:** ____________  **Date:** __________________________

(Initials)

Has pre-construction education been completed? **Yes / No** (contractors only participate once)

*Non-compliance is reported to the project manager and Infection Control Department.*

<table>
<thead>
<tr>
<th>Infection Control</th>
<th>Yes</th>
<th>No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. All barriers are in place and integrity is maintained.</td>
<td></td>
<td></td>
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<tr>
<td>2. Airflow is maintained from clean to dirty.</td>
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<tr>
<td>3. There is compliance with traffic patterns.</td>
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</tr>
<tr>
<td>4. There is compliance with cover clothing, when appropriate.</td>
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<td></td>
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</tr>
<tr>
<td>5. Equipment is in place to prevent airborne particles from migrating to patient care areas: portable HEPA filters, HEPA-filter vacuums, exhaust fans, self-closing construction entrance doors or debris chutes.</td>
<td></td>
<td></td>
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<tr>
<td>6. Doors closed to project and properly signed.</td>
<td></td>
<td></td>
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<tr>
<td>7. Appropriate debris transport: covered cart, dedicated elevator, designated route, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. All windows, doors, and debris chutes to the outside are secured when not in use.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Carpet or other track dirt compliance aids are in place at the doors leading to the hospital/clinic/support space. Housekeeping notified for “as needed” cleaning.</td>
<td></td>
<td></td>
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<tr>
<td>10. Areas are cleaned at the end of the day - trash is removed.</td>
<td></td>
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</tr>
<tr>
<td>11. Water leakage must be handled in an emergent fashion in occupied clinical areas. Immediate notification of facilities. Immediate action to assure drying in less than 72 hours.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>12. Pest control: no visible signs of mice, insects, birds, squirrels, or other vermin.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Roof protection in place.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Other Notes:</strong></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*File this with other project documentation.*
INFECTION CONTROL CHECKLIST AND NOTIFICATION FOR CONSTRUCTION PROJECTS

Project Tile/Location: ____________________________  Project No: ____________________________

Estimated Start Date: _____________  Estimated Completion Date: _____________

1. **Pre-work infection control training completed for contractor workers.**

2. **Initial planning**
   - Identify critical areas affected (e.g., operating rooms, ICU, pharmacy, kitchen, sterile processing, data centers, neonatal, transplant).
   - Decommission all work areas.
   - Review barrier location and construction (e.g., solid barriers, self-closing doors, walk-off mats to control “tracked” dirt).
   - Plan airflow patterns from clean to dirty. May require auxiliary exhaust fans in work area. Units should have HEPA filters if air is exhausted into the building.
   - Review any planned ventilation outages.
   - Plan materials and debris transport (e.g., exterior chutes, covered carts, dedicated elevator, designated routes).
   - Review location of any exterior work, lay down, or vehicle parking areas. May require relocation of building air intakes, additional filtration, sealing of windows, or other potential entry points.
   - Establish communication procedures between contractor and facility infection control (both routine and emergency).

3. **During construction**
   - Barriers in place and integrity maintained.
   - Airflow maintained from clean to dirty. Air pressure gauges at barriers.
   - Compliance with traffic patterns.
   - All windows, doors, debris chutes to outside closed and secured when not in use.
   - Doors to work areas closed and properly signed.
   - HVAC servicing work is isolated or shut down, and grills sealed off.
   - Work areas cleaned at end of the day. Trash removed.
   - Any water leakage, signs of mold, or vermin infestation report to Infection Control Committee immediately.

4. **Additional Comments:** ____________________________________________________________

________________________________________________

Facility Construction Manager: _______________________________________________________

Contractor Project Manager: ____________________________________________________________

cc: Facility Safety/Environmental  Contractor Safety
    Facility Infection Control  Contractor Project Manager
    Facility Security  Project File, Notebook
## ROVING PATROL

### ENVIRONMENT AND AIR CONTAMINATION REDUCTION CHECKLIST

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has an adequate level of protection been provided before starting work?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are wall separations or temporary partitions dust-tight?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Is VisQueen dust barrier double flapped and installed securely on all edges?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Are doors kept locked or appropriately sealed?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Is access for emergency response (Dr., smoke, blue alert, etc.) free and unobstructed?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Are exterior windows kept locked?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Has additional air handling equipment been provided?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Are debris removal procedures in place?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Are containers to remove debris covered and wet-mopped?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Is personal safety attire worn appropriately?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Has existing ductwork been covered or sealed?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Have occupants of adjacent areas been informed?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Have walk-off or track mats been provided and changed as needed?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Is the area being regularly mopped?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Are temporary hold penetrations covered adequately?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Are HEPA-filtered vacuum cleaners used appropriately?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Has traffic been directed around the area?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Are barriers intact and in place until the job is completed?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>In extremely sensitive areas (e.g., ICU's), is an anteroom provided?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Is adequate signage in place?</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

Reviewer: ___________________________ Date: _________________
<table>
<thead>
<tr>
<th>No.</th>
<th>QUESTION</th>
<th>YES</th>
<th>NO</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Are there patients and/or employees in the area of the project? If NO, skip to question 5.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Do the patients and/or employees have any immunocompromising and/or pulmonary conditions?</td>
<td></td>
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<tr>
<td>3.</td>
<td>Are there patients/employees with sensitivity to dust/molds or have allergies and/or asthma?</td>
<td></td>
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<tr>
<td>4.</td>
<td>Are patients/employees in your area sensitive to noise/vibration?</td>
<td></td>
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</tr>
<tr>
<td>5.</td>
<td>Are there procedures, work processes, or testing done that are sensitive to noise/vibration?</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6.</td>
<td>Are there supplies in areas where dust may be produced?</td>
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<tr>
<td>7.</td>
<td>Are there times when the workers cannot be in your areas? Specify.</td>
<td></td>
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<tr>
<td>8.</td>
<td>Would an in-service about the health hazards of construction/maintenance be of value to your staff?</td>
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<tr>
<td>9.</td>
<td>Will you have a designee available as a contact person if you are not available? Who?</td>
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<td></td>
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</tr>
</tbody>
</table>
Mold

Mold (fungi) is present both indoors and outdoors. There are more than 100,000 species of mold. There are thousands of types of molds and yeasts; the two groups of plants in the fungus family. Yeasts are single cells that divide to form clusters. Molds consist of many cells that grow as branching threads called Hypae. Although both groups can probably cause allergic reactions, only a small number of molds are widely recognized offenders. The most commonly found are the species of Cladosporium, Penicillium, and Aspergillus. The seeds or reproductive particles of fungi are called spores. They differ in size, shape, and color among species. Each spore that germinates can give rise to new mold growth, which in turn can produce millions of spores. Mold is most likely to grow where there is water or dampness such as in bathrooms and basements.

Health Effects

Most types of mold that are routinely encountered are not hazardous to healthy individuals. However, too much exposure to mold may cause or worsen conditions such as asthma, hay fever, or other allergies. The most common symptoms of overexposure are cough, congestion, runny nose, eye irritation, and aggravation of asthma. Depending on the amount of exposure, and a person’s individual vulnerability, more serious health effects such as fevers and breathing problems can occur, but are unusual.

A. Mold Allergy – When inhaled, microscopic fungal spores or fragments of fungi may cause allergic rhinitis. Because they are so small, mold spores may evade the protective mechanisms of the nose and the upper respiratory tract to reach the lungs. In a small number of people, symptoms of the mold allergy may be brought on or worsened by eating certain foods, such as cheeses, processed with fungi. Occasionally, mushrooms, dried fruits, and foods containing yeast, soy sauce, or vinegar will produce allergic symptoms. There is no known relationship between a respiratory allergy to the mold Penicillium and an allergy to the drug penicillin, made from the mold. Along with pollens from trees, grasses, and weeds, molds are an important cause of seasonal allergic rhinitis. People who are allergic to molds may have symptoms that run from spring to late fall. The mold season often peaks from July to late summer. Unlike pollens, molds may persist after the first killing frost. Some can grow at subfreezing temperatures, but most become dormant. Snow cover lowers the outdoor mold count dramatically, but does not kill molds. After the spring thaw, molds thrive on the vegetation that has been killed by the winter cold. In the warmest areas of the United States, molds thrive all year and can cause year-round (perennial) allergic problems. In addition, molds growing indoors can cause perennial allergic rhinitis even in the coldest climates. Like pollens, mold spores are important airborne allergens only if they are abundant, easily carried by air currents, and allergenic in their chemical makeup. Found almost everywhere, mold spores in some areas are so numerous they often outnumber the pollens in the air. Fortunately, however, only a few dozen different types are significant allergens. In general, Alternaria and Cladosporium are the molds most commonly found both indoors and outdoors throughout the United States. Aspergillus, Penicillium, Helminthosporium, Epicoccum, Fusarium, Mucor, Rhizopus, and Aureobasidium are also common.
B. **Mold-Related Disorders** – Fungi, or microorganisms related to them, may cause other health problems similar to allergic diseases. Some kinds of *Aspergillus* may cause several different illnesses, including both infections and allergies. These fungi may lodge in the airways or a distant part of the lung and grow until they form a compact sphere known as a fungus ball. In people with lung damage or serious underlying illnesses, *Aspergillus* may grasp the opportunity to invade the lungs or the whole body. In some individuals, exposure to these fungi can also lead to asthma, or to a lung disease resembling severe inflammatory asthma called **Allergic Bronchopulmonary Aspergillosis**. This latter condition, which occurs only in a minority of people with asthma, is characterized by wheezing, low-grade fever, and the coughing up of brown-flecked masses or mucus plugs.

C. **Stachybotrys Chartarum** – This is a type of mold that has been associated with health effects in people, also known as *Stachybotrys Atra*. It is a greenish-black mold that can grow on materials with a high cellulose content, such as drywall sheetrock, dropped ceiling tiles, and wood, that become chronically moist or water-damaged, due to excessive humidity, water leaks, condensation, or flooding. Many molds are black in appearance but are not *Stachybotrys*. Only specially trained professionals (e.g., mycologists) can positively identify *Stachybotrys* through a microscopic exam.

Typically, indoor air levels of *Stachybotrys* are low; however, as with other types of molds, at higher levels effects can occur. These include allergic rhinitis (cold-like symptoms), dermatitis (rashes), sinusitis, conjunctivitis and aggravation of asthma. Some related symptoms are more general, such as the inability to concentrate and fatigue. Usually, symptoms disappear after the contamination is removed. There has been some evidence linking *Stachybotrys* with pulmonary hemosiderosis in infants who are generally less than six months old. Pulmonary hemosiderosis is an uncommon condition that results from bleeding in the lungs. In studied cases of pulmonary hemosiderosis, the exposure to *Stachybotrys* came from highly contaminated dwellings, where the infants were continually exposed over a long period of time.

**Mold Allergy**

When moldy material becomes damaged or disturbed, spores can be released into the air. Exposure can occur if people inhale the spores, directly handle moldy materials, or accidentally ingest it. Also, mold can sometimes produce chemicals called mycotoxins. Mycotoxins may cause illness in people who are sensitive to them or if they are exposed to large amounts in the air. Large exposures are typically associated with certain occupations (e.g., agricultural work).

**Mold Growth**

All molds need water and/or moisture to grow. Mold can grow almost anywhere there is water damage, high humidity, or dampness. Most often, molds are confined to areas near a source of water. Removing the source of moisture, such as through repairs or dehumidification, is critical to preventing mold growth. Molds can be found wherever there is moisture, oxygen, and a source of the few other chemicals they need. In the fall, they grow on rotting logs and fallen leaves, especially in moist, shady areas. In gardens, they can be found in compost piles and on certain grasses and weeds. Some molds attach to grains such as wheat, oats, barley, and corn,
making farms, grain bins, and silos likely places to find mold. Bakeries, breweries, barns, dairies, and greenhouses are favorite places for molds to grow. Loggers, mill workers, carpenters, furniture repairers, and upholsterers often work in moldy environments.

Nutrients are readily available on construction sites, often cellulose, or other organic materials, such as wood, carpet, ceiling tile, insulation, and drywall. Most buildings provide plenty of nooks, walls, and other areas in which mold can grow, such as dark areas behind walls, the interior of ducts, and beneath the floors and carpet. Dampness can be created by water intrusion floods, leaks or rain, condensation, or a high humidity level (above 60%).

A. The key to controlling mold growth is to control water and moisture.
   1. Control during design to allow efficient and adequate water and moisture management in the finished product.
   2. Control during construction to prevent entrapment of moisture or water in the building.

B. If there is a water intrusion:
   1. Dry materials within 48 hours.
   2. Discard porous materials - paper, drywall, and carpet.
   3. Remove contaminated drywall 24” past the growth.
   4. Wash non-porous materials brick, concrete, and glass with non-ammonia soap and hot water.
   5. Rinse with clean water.
   6. Apply a diluted bleach solution (1/4 cup per gallon) and allow drying naturally.
   7. Provide plenty of ventilation.

Steps to Minimize the Dangers of Mold

A. Store materials away from moisture.

B. Try to inspect building materials prior to installation, particularly insulation and insulated ductwork.

C. Keep the interior of the building dry.

D. Educate your field staff – hiding the problem worsens it in this case.

E. Insist on proper maintenance of structures and educate your owners and clients.

F. Review scheduling and sequencing on your jobs.
**Mold Remediation Policy**

This policy has been established for the proper disposal and remediation of suspected mold contaminated building materials.

A. Identify the type of contaminated building material (drywall, wood, insulation, ceiling tiles, etc.).

B. Notify the superintendent of its existence, the superintendent will notify the owner.

C. The owner will decide to remediate in place, or remove, contaminated material.

D. There are two levels of remediation and removal.
   1. **Level I** - 100 ft$^2$ or less
   2. **Level II** - over 100 ft$^2$

E. Level I remediation is to be completed by a trained labor force.
   1. Minimal containment – plastic door flaps.
   2. Worker to wear the following PPE:
      a. Impervious Gloves
      b. Safety Glasses
      c. NP-95 Respirator

F. Discard porous materials, i.e., paper, drywall, and carpet.
   1. Spray contaminated material with 1/10 bleach solution 24-hours prior to removal, if possible.
   2. Remove contaminated drywall 24” past the growth.
   3. Remove contaminated material and bag or seal it in 6-ml plastic.
   4. Transport to construction dumpster.
   5. If the material is wood, and it will not be removed, the area must be HEPA vacuumed, sprayed with the 1/10 bleach solution, abraded, and encapsulated with “Kilz” or a clear shellac.
   6. Provide ventilation of bleach vapors.

G. Non-porous materials can be cleaned using the following procedures:
   1. Wash non-porous materials (brick, concrete, and glass) with non-ammonia soap and hot water.
   2. Rinse with clean water.
   3. Apply dilute bleach solution (1/4 cup per gallon) and allow drying naturally.
   4. Provide ventilation of bleach vapors.
H. **Level II** remediation will be conducted after consultation with a third-party abatement expert.

I. Air monitoring can be conducted if necessary after remediation is completed.

**IMPORTANT** - Mold is present because of water intrusion. The water intrusion *must* be corrected!

If there are any questions or concerns about the recognition or remediation of mold, contact the Safety Department.
APPENDIX
MOLD AWARENESS AND QUALITY
CONTROL CHECKLIST

This checklist is only a tool to assist the contractor in managing its responsibility to maintain safe premises, practices, operations, and equipment, and is not for the benefit of any other party. The checklist does not cover all possible hazardous conditions or unsafe acts or conditions that may exist, and contains no legal advice. For all decisions regarding use of the practices suggested in this checklist, follow the advice of your own legal counsel or other qualified professional.

- Project management and workers trained in the importance and methods of preventing mold growth.
  - Keep interior materials dry prior to, during, and after installation, especially drywall.
  - Do not install wet building materials.
  - Report any water damage, leaks, or intrusion to the project manager immediately.
  - Dry out any water damaged materials as soon as possible.
  - Build in strict accordance with design specifications and codes.
  - Immediately alert architects to designs that may allow water intrusion or moisture accumulation.
  - Question conceptual only, inadequate architectural detailing or outright improper building plans.

- During the design phase, carefully review the details with specific attention to ensuring an impermeable envelope.

- Consult an envelope engineer on geometrically complex buildings for a third party opinion on the water tightness of the envelope.

- On a renovation or addition, carefully survey the existing building before construction begins. Look for any discoloration in finished surfaces or a musty smell. It is possible that a pre-existing mold problem can become the contractor’s problem once construction begins.

- Develop the project schedule with envelope construction completion as a predecessor to installation of finishes. This may be impossible on some projects; if so, have a detailed weather protection plan for all areas of exposure and establish a sufficient budget to implement the plan.

- Establish a partnering program with the owner and promote a peer review for the mechanical system and the building envelope designs.
Carefully document any recommended changes to the architect of record. On standard owner-architect-contractor project delivery methods, the architect’s approval must be obtained. In the event the recommendation is rejected, reiterate the recommendation in writing, copy the owner, and file it.

Pre-qualify potential subcontractors and ensure that the subs have adequate experience in the specific application being bid.

Consult manufacturers of moisture critical products to confirm the product’s application and to recommend standard details, and provide preferred installers.

Delivery of interior materials (e.g., dry wall, paneling, ceiling tiles, framing lumber):
- Schedule so that the materials will arrive after the exterior of the building has been sealed.
- Provide for dry storage of materials off of the ground and away from moisture sources.
- Minimize storage time.
- Loosely secure plastic sheeting or tarps used to cover materials to allow air circulation.
- If storage time is lengthy, conduct a hazard inspection of the stored materials at least once a week.

Prearrange for drying equipment:
- Fans
- Dehumidifiers
- Wet-Dry vacuums
- “Super sucker” trucks

All materials should be inspected upon delivery for preexisting mold contamination.

Interior materials need to be installed in dry conditions, per the manufacturers’ specifications.

Check all water services, including fire sprinklers and waste lines for:
- Proper installation
- Connections properly made and checked for leakage
- Water lines (particularly chilled water) properly insulated
- Have multiple inspectors for filling or hydro-test of sprinklers
Properly install all building penetrations and check for leakage in:

- Doors
- Windows
- Balconies and decks
- Roof membranes – lapping at corners and joints
- Ventilation/Exhaust ducts
- Stairwells and elevator shafts

Repair all tears, openings, or punctures in vapor barriers.

Check all flashings and caulking for proper lapping and application.

Use kick-out flashing at rake intersections.

Ensure all roof drains drain away from the foundation.

Properly support and brace roof drains for large volume storms.

Make certain that all moisture-generating equipment is vented outdoors.

Arrange it so that the surrounding ground is sloped away from the foundation.

See that there is proper ventilation to attics, crawl spaces, or other enclosed areas.

Account for the following items within the Heating, Ventilation, and Air-Conditioning (HVAC) system:

- Correct filters are properly installed – American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) dust spot efficiency per specifications, no filters missing or misaligned
- Drip pan for cooling coils drains properly
- No insulation on interior of ventilation ducts – bare, galvanized sheet metal is preferred
- All duct joints are sealed
- The system is cleaned and commissioned. Third-party certification of HVAC (test and balance report) ASHRAE has published a good practice commissioning procedure (Guide #1).

Document all critical installations, including photographs.

Perform interim inspections - invite the architect, envelope engineer, mechanical engineer, and manufacturer’s representatives to inspect for mold related issues.

Have manufacturers inspect installations for warrantee purposes.

Keep the facility owner briefed on their responsibilities to prevent mold growth.

Fix leaky plumbing and leaks in the building envelope as soon as possible.

Watch for condensation and wet spots. Fix the source(s) of moisture problem(s) as soon as possible.

Prevent moisture due to condensation by increasing the surface temperature or reducing the moisture level in the air. To increase the surface temperature, insulate or increase air circulation. To reduce the moisture level in the air, repair leaks, increase ventilation (if outside air is cold and dry), or dehumidify (if outdoor air is warm and humid).

Keep HVAC drip pans clean, flowing properly, and unobstructed.

Vent moisture-generating appliances, such as dryers, to the outside when possible.

Maintain a low indoor humidity, below 60 percent relative humidity (RH), ideally 30-50 percent, if possible.

Perform regular building/HVAC inspections and maintenance as scheduled.

Install and maintain proper air filters.

Clean and dry any wet or damp spots within 48 hours.

Do not let foundations stay wet. Provide drainage and slope the ground away from the foundation.

Ensure that the new building penetrations are properly sealed.

Ensure that the landscape watering system does not spray the building foundation.
Final visual inspection of:

- Pipe chases
- Utility tunnels
- Areas above drop ceilings that are exposed to water or waste lines or that are directly below the roof