BNSF Safety Vision

We believe every accident or injury is preventable. Our vision is that Burlington Northern Santa Fe will operate free of accidents and injuries. Burlington Northern Santa Fe will achieve this vision through:

A culture that makes safety our highest priority and provides continuous self-examination as to the effectiveness of our safety process and performance ...

A work environment, including the resources and tools, that is safe and accident-free where all known hazards will be eliminated or safe-guarded ...

Work practices and training for all employees that make safety essential to the tasks we perform ...

An empowered work force, including all employees, that takes responsibility for personal safety, the safety of fellow employees, and the communities in which we serve.
# Table of Contents

## Mechanical/P&M Safety Rules

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1.0</td>
<td>Core &amp; M Safety Rules</td>
</tr>
<tr>
<td>S-1.1</td>
<td>Job Safety Briefing</td>
</tr>
<tr>
<td>S-1.2</td>
<td>Rights and Responsibilities</td>
</tr>
<tr>
<td>S-1.3</td>
<td>Personal Protective Equipment and Clothing</td>
</tr>
<tr>
<td>S-1.4</td>
<td>Tools and Equipment</td>
</tr>
<tr>
<td>S-1.5</td>
<td>Work Environment</td>
</tr>
<tr>
<td>S-1.6</td>
<td>Working On or About Tracks</td>
</tr>
<tr>
<td>S-2.0</td>
<td>Chemical Safety</td>
</tr>
<tr>
<td>S-2.1</td>
<td>Environmental Safety</td>
</tr>
<tr>
<td>S-2.2</td>
<td>Chemical Spills and Chemical Releases to Air</td>
</tr>
<tr>
<td>S-2.3</td>
<td>Labeling Chemical Containers</td>
</tr>
<tr>
<td>S-2.4</td>
<td>Ventilation for Maintaining Safe Atmospheres</td>
</tr>
<tr>
<td>S-2.5</td>
<td>Skin Cleaning</td>
</tr>
<tr>
<td>S-2.6</td>
<td>Containment and Spill Prevention</td>
</tr>
<tr>
<td>S-2.7</td>
<td>Protection from Lead Exposure</td>
</tr>
<tr>
<td>S-2.8</td>
<td>Protection from Asbestos Exposure</td>
</tr>
<tr>
<td>S-2.9</td>
<td>Protection from Manganese During Frog Repair</td>
</tr>
<tr>
<td>S-2.10</td>
<td>Protection from Silica-Containing Dust</td>
</tr>
<tr>
<td>S-3.0</td>
<td>Electrical Safety</td>
</tr>
<tr>
<td>S-3.1</td>
<td>Requirements</td>
</tr>
<tr>
<td>S-3.1.1</td>
<td>General</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-3.1.2</td>
<td>Authorized Employees</td>
</tr>
<tr>
<td>S-3.1.3</td>
<td>Warning Signs</td>
</tr>
<tr>
<td>S-3.1.4</td>
<td>Flashlights</td>
</tr>
<tr>
<td>S-3.1.5</td>
<td>Contacts</td>
</tr>
<tr>
<td>S-3.1.6</td>
<td>Lockout/Tagout</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-3.3</td>
<td>Charging and Jumping Batteries</td>
</tr>
<tr>
<td>S-3.3.1</td>
<td>Precautions for Servicing Batteries</td>
</tr>
<tr>
<td>S-3.3.2</td>
<td>Battery Fluxing</td>
</tr>
<tr>
<td>S-3.3.3</td>
<td>Metallic Objects</td>
</tr>
<tr>
<td>S-3.3.5</td>
<td>Jumping Batteries</td>
</tr>
</tbody>
</table>

## Fire Prevention, Response and Hazards

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-5.0</td>
<td>Fire Prevention, Response and Hazards</td>
</tr>
<tr>
<td>S-5.1</td>
<td>General Requirements</td>
</tr>
<tr>
<td>S-5.2</td>
<td>Emergency Procedures</td>
</tr>
<tr>
<td>S-5.3</td>
<td>Fire Extinguishers and Protection Devices</td>
</tr>
<tr>
<td>S-5.3.1</td>
<td>Defective Fire Extinguishers</td>
</tr>
<tr>
<td>S-5.3.2</td>
<td>Access to Fire Extinguishers and Protection Devices</td>
</tr>
<tr>
<td>S-5.3.3</td>
<td>Use of Gasoline/Oil-Burning Devices</td>
</tr>
<tr>
<td>S-5.3.4</td>
<td>Open Flames</td>
</tr>
<tr>
<td>S-5.4</td>
<td>Starting Fires</td>
</tr>
<tr>
<td>S-5.5</td>
<td>Fueling Vehicles, Machinery and Equipment</td>
</tr>
<tr>
<td>S-5.6</td>
<td>Electrical Circuits</td>
</tr>
<tr>
<td>S-5.7</td>
<td>Hazardous Material Storage and Dispensing</td>
</tr>
<tr>
<td>S-5.8</td>
<td>Use and Handling of Liquefied Petroleum Gas (LPG)</td>
</tr>
<tr>
<td>S-5.8.1</td>
<td>Testing</td>
</tr>
<tr>
<td>S-5.8.2</td>
<td>Avoiding Extreme Heat</td>
</tr>
<tr>
<td>S-5.8.3</td>
<td>Handling Leaks</td>
</tr>
<tr>
<td>S-5.8.4</td>
<td>Refueling LPG Tanks</td>
</tr>
<tr>
<td>S-5.8.5</td>
<td>Closing Valves</td>
</tr>
<tr>
<td>S-5.9</td>
<td>Refrigeration Systems</td>
</tr>
<tr>
<td>S-5.9.1</td>
<td>Qualified Employees</td>
</tr>
</tbody>
</table>

## Gas Welding, Cutting, Heating, and Arc Welding

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-6.0</td>
<td>Gas Welding, Cutting, Heating, and Arc Welding</td>
</tr>
<tr>
<td>S-6.1</td>
<td>Area Protection</td>
</tr>
<tr>
<td>S-6.1.1</td>
<td>Protecting Wooden Structures</td>
</tr>
<tr>
<td>S-6.1.2</td>
<td>Protecting Concrete</td>
</tr>
<tr>
<td>S-6.2</td>
<td>Electrical Welding</td>
</tr>
<tr>
<td>S-6.2.1</td>
<td>General Requirements</td>
</tr>
<tr>
<td>S-6.2.2</td>
<td>Welding Machines</td>
</tr>
<tr>
<td>S-6.2.3</td>
<td>Welding Ground Connections</td>
</tr>
<tr>
<td>S-6.2.4</td>
<td>Welding Cables</td>
</tr>
<tr>
<td>S-6.2.5</td>
<td>Electrode Holders</td>
</tr>
<tr>
<td>S-6.2.6</td>
<td>Electrodes</td>
</tr>
<tr>
<td>S-6.3</td>
<td>Fire Fighting Equipment</td>
</tr>
<tr>
<td>S-6.4</td>
<td>Welding or Cutting in Confined Space</td>
</tr>
<tr>
<td>S-6.5</td>
<td>Restrictions for Making Welding Equipment Repairs</td>
</tr>
<tr>
<td>S-6.5.1</td>
<td>Torches, Regulators, or Other Welding Apparatus</td>
</tr>
<tr>
<td>S-6.5.2</td>
<td>Hoops and Chains</td>
</tr>
<tr>
<td>S-6.5.3</td>
<td>Flammable Containers</td>
</tr>
<tr>
<td>S-6.5.4</td>
<td>Protection from Chlorinated Solvents</td>
</tr>
<tr>
<td>S-6.6</td>
<td>Oxygen and Fuel Gas</td>
</tr>
<tr>
<td>S-6.6.1</td>
<td>General Requirements</td>
</tr>
<tr>
<td>Section</td>
<td>Title</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>S-6.7</td>
<td>Welding Hose and Fittings</td>
</tr>
<tr>
<td>S-6.7.1</td>
<td>General Information</td>
</tr>
<tr>
<td>S-6.7.2</td>
<td>Welding Hoses</td>
</tr>
<tr>
<td>S-6.7.3</td>
<td>Welding Hose Fittings</td>
</tr>
<tr>
<td>S-6.7.4</td>
<td>Welding Hose Fires</td>
</tr>
<tr>
<td>S-6.8</td>
<td>Installing Reverse Flow Check Valves and Flashback Arrestors</td>
</tr>
<tr>
<td>S-6.8.1</td>
<td>Portable Systems</td>
</tr>
<tr>
<td>S-6.8.2</td>
<td>Bulk Fuel or Manifold Fuel Gas Systems</td>
</tr>
<tr>
<td>S-6.9</td>
<td>Oxy/Acetylene Torch</td>
</tr>
<tr>
<td>S-7.0</td>
<td>Hand Tools</td>
</tr>
<tr>
<td>S-8.0</td>
<td>Intermodal/Automotive Facility Safety</td>
</tr>
<tr>
<td>S-8.1</td>
<td>Core Intermodal/Automotive Facility Safety Rules</td>
</tr>
<tr>
<td>S-8.2</td>
<td>Track Protection</td>
</tr>
<tr>
<td>S-8.3</td>
<td>Vehicles Within Intermodal Facilities</td>
</tr>
<tr>
<td>S-8.3.1</td>
<td>Vehicle Requirements</td>
</tr>
<tr>
<td>S-8.3.2</td>
<td>Vehicle Operations</td>
</tr>
<tr>
<td>S-8.4</td>
<td>Check Point Ingate/Outgate Procedures</td>
</tr>
<tr>
<td>S-9.0</td>
<td>Ladders, Platforms, Scaffolds, and Aerial Baskets</td>
</tr>
<tr>
<td>S-9.1</td>
<td>Inspection</td>
</tr>
<tr>
<td>S-9.2</td>
<td>Storage</td>
</tr>
<tr>
<td>S-9.3</td>
<td>Stage Boards</td>
</tr>
<tr>
<td>S-9.4</td>
<td>Safety Feet</td>
</tr>
<tr>
<td>S-9.5</td>
<td>Ladder and Scaffold Placement</td>
</tr>
<tr>
<td>S-9.6</td>
<td>Ladders for Electrical Work</td>
</tr>
<tr>
<td>S-9.7</td>
<td>Instructions for Climbing</td>
</tr>
<tr>
<td>S-9.7.1</td>
<td>Climbing with Tools or Materials</td>
</tr>
<tr>
<td>S-9.8</td>
<td>Performing Work</td>
</tr>
<tr>
<td>S-9.9</td>
<td>Extension Ladders</td>
</tr>
<tr>
<td>S-9.10</td>
<td>Step Ladders</td>
</tr>
<tr>
<td>S-9.11</td>
<td>Construction Scaffolding</td>
</tr>
<tr>
<td>S-9.11.1</td>
<td>Sectional Metal Scaffolds</td>
</tr>
<tr>
<td>S-9.12</td>
<td>Non-Powered Mobile Scaffolding</td>
</tr>
<tr>
<td>S-9.13</td>
<td>Aerial Work Platforms</td>
</tr>
<tr>
<td>S-9.13.1</td>
<td>Scissor Lifts</td>
</tr>
<tr>
<td>S-9.13.2</td>
<td>Boom-Mounted Baskets or Buckets</td>
</tr>
<tr>
<td>S-10.0</td>
<td>Locomotive and Railcar</td>
</tr>
<tr>
<td>S-10.1</td>
<td>Raising Equipment</td>
</tr>
<tr>
<td>S-10.1.1</td>
<td>Safe Jack Use</td>
</tr>
<tr>
<td>S-10.2</td>
<td>Moving and Spotting Locomotives Within Mechanical Limits</td>
</tr>
<tr>
<td>S-10.2.1</td>
<td>Moving</td>
</tr>
<tr>
<td>S-10.2.2</td>
<td>Spotting</td>
</tr>
<tr>
<td>S-10.3</td>
<td>Working On or Near Engines</td>
</tr>
<tr>
<td>S-10.3.1</td>
<td>Applying Warning Signs and Tags</td>
</tr>
<tr>
<td>S-10.3.2</td>
<td>Sounding Alarm Bell</td>
</tr>
<tr>
<td>S-10.3.3</td>
<td>Avoid Hazards While Working</td>
</tr>
<tr>
<td>S-10.3.4</td>
<td>Working on Air Brake Rigging</td>
</tr>
<tr>
<td>S-10.4</td>
<td>Rotating Crankshaft</td>
</tr>
<tr>
<td>S-10.5</td>
<td>Locomotive Inspections, Tests and Maintenance</td>
</tr>
<tr>
<td>S-10.6</td>
<td>Safety Guards</td>
</tr>
<tr>
<td>S-10.7</td>
<td>Precaution Entering Restricted Access Cars</td>
</tr>
<tr>
<td>S-10.8</td>
<td>Doors/Load Dividers</td>
</tr>
<tr>
<td>S-10.8.1</td>
<td>Doors</td>
</tr>
<tr>
<td>S-10.8.2</td>
<td>Load Dividers</td>
</tr>
<tr>
<td>S-10.9</td>
<td>Securing Unattended Equipment</td>
</tr>
<tr>
<td>S-10.10</td>
<td>Steel Cables for Moving Cars</td>
</tr>
<tr>
<td>S-10.11</td>
<td>Repairing Cars Containing or Last Contained Hazardous Materials</td>
</tr>
<tr>
<td>S-10.12</td>
<td>Starting and Idling Locomotives Inside Shops</td>
</tr>
<tr>
<td>S-10.13</td>
<td>Painting</td>
</tr>
<tr>
<td>S-10.14</td>
<td>Adding Water to Locomotives</td>
</tr>
<tr>
<td>S-11.0</td>
<td>Material Handling</td>
</tr>
<tr>
<td>S-11.1</td>
<td>Material Storage</td>
</tr>
<tr>
<td>S-11.1.1</td>
<td>Stacking Material</td>
</tr>
<tr>
<td>S-11.2</td>
<td>Hand Trucks</td>
</tr>
<tr>
<td>S-11.3</td>
<td>Pallet Use and Stacking</td>
</tr>
<tr>
<td>S-11.4</td>
<td>Loading and Unloading Cars, Trucks, and Trailers</td>
</tr>
<tr>
<td>S-11.5</td>
<td>Sharp Edges</td>
</tr>
<tr>
<td>S-11.5.1</td>
<td>Banding Material</td>
</tr>
<tr>
<td>S-11.6</td>
<td>Wheelsets</td>
</tr>
<tr>
<td>S-11.7</td>
<td>Hazardous Material Handling</td>
</tr>
<tr>
<td>S-11.7.1</td>
<td>Complying with Regulations</td>
</tr>
<tr>
<td>S-11.7.2</td>
<td>Loading or Unloading Tank Cars</td>
</tr>
<tr>
<td>S-11.7.3</td>
<td>Handling Fluorescent/Neon Tubes</td>
</tr>
<tr>
<td>S-11.7.4</td>
<td>Disposing of Spray Containers</td>
</tr>
<tr>
<td>S-11.8</td>
<td>Forklifts</td>
</tr>
<tr>
<td>S-11.8.1</td>
<td>Parking Requirements</td>
</tr>
<tr>
<td>S-11.8.2</td>
<td>Dismounting Forklift—Attended and Unattended Forklifts</td>
</tr>
<tr>
<td>S-11.8.3</td>
<td>Passengers</td>
</tr>
<tr>
<td>S-11.8.4</td>
<td>Tool Storage</td>
</tr>
<tr>
<td>S-11.8.5</td>
<td>Seat Belts</td>
</tr>
<tr>
<td>S-11.9</td>
<td>Forklift Operation</td>
</tr>
<tr>
<td>S-11.9.1</td>
<td>Speed and Movement Restrictions</td>
</tr>
<tr>
<td>S-11.9.2</td>
<td>Getting On or Off</td>
</tr>
<tr>
<td>S-11.9.3</td>
<td>Operation on Ramps</td>
</tr>
<tr>
<td>S-11.9.4</td>
<td>Gates/Doors</td>
</tr>
<tr>
<td>S-11.9.5</td>
<td>Load Limits</td>
</tr>
<tr>
<td>S-11.9.6</td>
<td>Unloaded Fork Position</td>
</tr>
<tr>
<td>S-11.9.7</td>
<td>Personnel Baskets</td>
</tr>
<tr>
<td>S-11.9.8</td>
<td>Inspections</td>
</tr>
<tr>
<td>S-11.9.9</td>
<td>Fueling a Forklift</td>
</tr>
<tr>
<td>Section</td>
<td>Title</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>S-12.0</td>
<td>Motor Vehicles and Trailers</td>
</tr>
<tr>
<td>S-12.1</td>
<td>Operation of Motor Vehicles</td>
</tr>
<tr>
<td></td>
<td>S-12.1.1 General Requirements</td>
</tr>
<tr>
<td>S-12.2</td>
<td>All Terrain Vehicles (ATVs)</td>
</tr>
<tr>
<td>S-12.3</td>
<td>Motorcycle Use</td>
</tr>
<tr>
<td>S-12.4</td>
<td>Utility Vehicles</td>
</tr>
<tr>
<td>S-12.5</td>
<td>Seat Belts</td>
</tr>
<tr>
<td>S-12.6</td>
<td>Passengers</td>
</tr>
<tr>
<td>S-12.7</td>
<td>Maintenance/Inspections</td>
</tr>
<tr>
<td>S-12.8</td>
<td>Backing</td>
</tr>
<tr>
<td>S-12.9</td>
<td>Parking</td>
</tr>
<tr>
<td></td>
<td>S-12.9.1 Fouling Tracks or Roadways</td>
</tr>
<tr>
<td>S-12.10</td>
<td>Work Under Vehicles or Trailers</td>
</tr>
<tr>
<td>S-12.11</td>
<td>Transporting Tools and Material</td>
</tr>
<tr>
<td>S-12.12</td>
<td>Special Equipment Mounted on Vehicles or Trailers</td>
</tr>
<tr>
<td>S-12.13</td>
<td>Trailers</td>
</tr>
<tr>
<td>S-12.13.1</td>
<td>Required Equipment</td>
</tr>
<tr>
<td>S-12.13.2</td>
<td>Inspection</td>
</tr>
<tr>
<td>S-12.14</td>
<td>Accidents/Incidents</td>
</tr>
<tr>
<td>S-13.0</td>
<td>On or Near Tracks, Locomotives and Rail Cars</td>
</tr>
<tr>
<td>S-13.1</td>
<td>General Requirements</td>
</tr>
<tr>
<td></td>
<td>S-13.1.1 Going Between Cars or Locomotives Coupled to Locomotives</td>
</tr>
<tr>
<td>S-13.1.2</td>
<td>Signals</td>
</tr>
<tr>
<td>S-13.1.3</td>
<td>Tracks</td>
</tr>
<tr>
<td>S-13.1.4</td>
<td>Sitting or Standing</td>
</tr>
<tr>
<td>S-13.1.5</td>
<td>Riding In or On Moving Equipment</td>
</tr>
<tr>
<td>S-13.1.6</td>
<td>Opening and Closing Doors</td>
</tr>
<tr>
<td>S-13.1.8</td>
<td>Poling Cars</td>
</tr>
<tr>
<td>S-13.1.9</td>
<td>Chocking Cars</td>
</tr>
<tr>
<td>S-13.1.11</td>
<td>Installing or Removing Marker</td>
</tr>
<tr>
<td>S-13.2</td>
<td>Coupling/Uncoupling Rail Equipment</td>
</tr>
<tr>
<td></td>
<td>S-13.2.1 Standing Clear</td>
</tr>
<tr>
<td>S-13.2.2</td>
<td>Operating Uncoupling Lever</td>
</tr>
<tr>
<td>S-13.2.3</td>
<td>Adjusting Lift Pin (Lock Block)</td>
</tr>
<tr>
<td>S-13.2.4</td>
<td>Adjusting Mismatched Couplers</td>
</tr>
<tr>
<td>S-13.2.5</td>
<td>Replacing Knuckles</td>
</tr>
<tr>
<td>S-13.2.6</td>
<td>Opening Knuckles</td>
</tr>
<tr>
<td>S-13.3</td>
<td>Air Hoses and Angle Cocks</td>
</tr>
<tr>
<td></td>
<td>S-13.3.1 Connecting Air Hoses</td>
</tr>
<tr>
<td>S-13.3.2</td>
<td>Opening Angle Cocks</td>
</tr>
<tr>
<td>S-13.3.3</td>
<td>Parting Hoses</td>
</tr>
<tr>
<td>S-13.3.4</td>
<td>Controlling Movement</td>
</tr>
<tr>
<td>S-13.4</td>
<td>Crossing Over Rail Equipment</td>
</tr>
<tr>
<td></td>
<td>S-13.4.1 Crossing Through a Standing Train or Cut of Cars</td>
</tr>
<tr>
<td>S-13.4.2</td>
<td>Climbing Through Standing Coupled Cars</td>
</tr>
<tr>
<td>S-13.4.3</td>
<td>Crossing Underneath Couplers or Standing Cars</td>
</tr>
<tr>
<td>S-13.4.4</td>
<td>Climbing Over Couplers or Under Moving Cars</td>
</tr>
<tr>
<td>S-13.5</td>
<td>Getting On or Off Equipment</td>
</tr>
<tr>
<td></td>
<td>S-13.5.1 Getting On Moving Equipment</td>
</tr>
<tr>
<td>S-13.5.2</td>
<td>Getting Off Equipment</td>
</tr>
<tr>
<td>S-13.5.3</td>
<td>Getting On and Off Full Car Body Locomotives</td>
</tr>
<tr>
<td>S-13.6</td>
<td>Operating Hand Brakes</td>
</tr>
<tr>
<td>S-13.6.1</td>
<td>Hand Brake Categories</td>
</tr>
<tr>
<td>S-13.6.2</td>
<td>Hand Brakes on Moving Cars</td>
</tr>
<tr>
<td>S-13.6.3</td>
<td>Position to Operate</td>
</tr>
<tr>
<td>S-13.6.4</td>
<td>Use of Feet</td>
</tr>
<tr>
<td>S-13.6.5</td>
<td>Movement from Side to End Ladder</td>
</tr>
<tr>
<td>S-13.6.6</td>
<td>Vertical Wheel</td>
</tr>
<tr>
<td>S-13.6.7</td>
<td>Lever or Ratchet Brake</td>
</tr>
<tr>
<td>S-13.6.8</td>
<td>Horizontal Wheel or Staff Brake</td>
</tr>
<tr>
<td>S-13.7</td>
<td>Operating Switches and Derails</td>
</tr>
<tr>
<td>S-13.7.1</td>
<td>Checking for Damage and Obstructions</td>
</tr>
<tr>
<td>S-13.7.2</td>
<td>Operating Ground Throw or “Flop Over” Switch</td>
</tr>
<tr>
<td>S-13.7.3</td>
<td>Operating High Stand Switch</td>
</tr>
<tr>
<td>S-13.7.4</td>
<td>Operating Switch Point Locks</td>
</tr>
<tr>
<td>S-13.7.5</td>
<td>Switch Heaters</td>
</tr>
<tr>
<td>S-13.8</td>
<td>Fusees and Torpedoes</td>
</tr>
<tr>
<td>S-13.8.1</td>
<td>Storing Fusees and Torpedoes</td>
</tr>
<tr>
<td>S-13.8.2</td>
<td>Disposing of Damaged Fusees and Torpedoes</td>
</tr>
<tr>
<td>S-13.8.4</td>
<td>Lighting and Handling a Burning Fusee</td>
</tr>
<tr>
<td>S-13.8.5</td>
<td>Placing Fusees and Torpedoes</td>
</tr>
<tr>
<td>S-13.8.6</td>
<td>Giving Fusees and Torpedoes</td>
</tr>
<tr>
<td>S-13.8.7</td>
<td>Extinguishing Fusees</td>
</tr>
<tr>
<td>S-14.0</td>
<td>On-Track Machines and Vehicles</td>
</tr>
<tr>
<td>S-14.1</td>
<td>Riding On Machines</td>
</tr>
<tr>
<td></td>
<td>S-14.1.1 Warning Devices</td>
</tr>
<tr>
<td>S-14.1.2</td>
<td>Seat Belts</td>
</tr>
<tr>
<td>S-14.2</td>
<td>Working On or About Equipment and Machines</td>
</tr>
<tr>
<td>S-14.3</td>
<td>Moving Cars and Work Equipment on Repair or Service Track</td>
</tr>
<tr>
<td>S-14.5</td>
<td>Hearing Protection</td>
</tr>
<tr>
<td>S-14.8</td>
<td>Operating Track Equipment Indoors</td>
</tr>
<tr>
<td>S-15.0</td>
<td>Oxygen and Fuel Gas</td>
</tr>
<tr>
<td>S-15.1</td>
<td>Storing Gas Cylinders</td>
</tr>
<tr>
<td>S-15.2</td>
<td>Testing for and Handling Leaks</td>
</tr>
<tr>
<td>S-15.2.1</td>
<td>Testing for Leaks</td>
</tr>
<tr>
<td>S-15.2.2</td>
<td>Handling Leaks</td>
</tr>
<tr>
<td>S-15.3</td>
<td>Mixing Gases</td>
</tr>
<tr>
<td>S-15.4</td>
<td>Handling and Transporting Gas Cylinders</td>
</tr>
<tr>
<td>S-15.5</td>
<td>Changing Gas Cylinders</td>
</tr>
<tr>
<td>S-16.0</td>
<td>Power Tools and Machinery</td>
</tr>
<tr>
<td>S-16.1</td>
<td>Authorized Employees</td>
</tr>
<tr>
<td>S-16.2</td>
<td>Inspection and Use</td>
</tr>
<tr>
<td>S-16.3</td>
<td>Insulation/Grounding</td>
</tr>
<tr>
<td>S-16.4</td>
<td>Power Source</td>
</tr>
<tr>
<td>S-16.5</td>
<td>Storage/Handling of Abrasive Disks and Wheels</td>
</tr>
<tr>
<td>S-16.6</td>
<td>Floor Area/Aisles</td>
</tr>
<tr>
<td>S-16.7</td>
<td>Safety Guards</td>
</tr>
<tr>
<td>S-16.8</td>
<td>Gloves</td>
</tr>
<tr>
<td>S-16.9</td>
<td>Pneumatic Tool Use</td>
</tr>
<tr>
<td></td>
<td>S-16.9.1 Air Valve</td>
</tr>
<tr>
<td>S-16.10</td>
<td>Light and Air Cannister</td>
</tr>
</tbody>
</table>
M-1.8  Blue Signal Protection for Distributive Power Units (DP Power) .......................... 110
M-2.0  **Personal Protective Equipment** .................. 110
M-2.1  Use of Goggles ............................................ 110
M-2.2  Reflective Wear on Service Tracks ................... 110
M-2.3  High-Voltage Protective Gloves ....................... 111
M-2.4  Use of Gloves with Chain Saws ....................... 111
M-2.5  Eye and Face Protection for Equipment and Machinery ............................................. 111
M-3.0  **Work Process** ........................................ 111
M-3.1  Use of Crossing Ramps on Locomotives in Shop ................................................. 111
M-3.2  Mount and Dismount Locomotives ..................... 111
M-3.3  GE-8/-9 Locomotive Startup Procedure ............. 111
M-3.4  Locomotive Tagout Procedures ........................ 111
M-3.5  Working on Top of Locomotives and Cars .......... 112
M-3.6  Air Box Work on Locomotives ......................... 112
M-3.7  Cut Out Locomotive Air Horns ......................... 112
M-3.8  Hot Work on Fuel Tanks Policy ....................... 112
M-4.0  **Facility** ................................................ 113
M-4.1  Precaution With Roll-Up Doors ....................... 113
M-4.2  Chain Hoist (Come-Alongs) Inspection Program ......................................................... 113
M-5.0  **General Policies** ...................................... 113
M-5.1  Mandatory Stretching Prior to Work ............... 113
M-5.2  Using a Tank Car as a Crossover Platform ......... 113
M-5.3  Lightning Protection Guidelines ....................... 113
M-6.0  **Tools and Equipment** ............................... 113
M-6.1  Punches and Chisels .................................... 113
M-6.2  Knife Policy .................................................. 113
M-6.3  Leatherman Prohibition ................................... 114
M-6.5  MU Cable Receptacle Lid Holder ...................... 114
M-6.7  Folding and Four-Point Office Chairs ............... 114
M-7.0  **MW Protection Within Car Shop,**
**Repair or Engine Servicing Areas** ................. 114
Welcome to the 2004 BNSF Mechanical Safety Rules and Policies. This book has been developed from the contributions of BNSF employees from many levels and from all work groups. You will see that these contributors have:

- Revised rules to make them more clear, accurate, consistent, and less repetitive.
- Renumbered the rules in the book with an “S” prefix to denote “Safety” rules.
- Added illustrations for clarity.

BNSF is committed to your safety around the clock. The information in this category is a vital component of helping you make solid and safe decisions on the job and with your family at home.

S-1.0 Core Safety Rules

These rules provide a core of safe work practices for BNSF people. The rules apply every day and in every job we do. They will guide and direct us in maintaining a safe work environment.

S-1.1 Job Safety Briefing

Employees must participate in a job safety briefing before beginning work and when work or job conditions change. The briefing includes a discussion of the general work plan, existing or potential hazards, and ways to eliminate or protect against hazards. Outside parties or contractors involved in the work or who are in the work area must also be included in the job safety briefing.

Employees Fouling the Track

Employees must always be alert and expect the movement of trains, engines, cars or other moveable equipment at any time, on any track and in either direction. Before fouling any track, employees have an individual responsibility to determine it is safe to do so. If the track is occupied by rail equipment, employees must insure appropriate protection has been provided for the task to be performed as indicated in the following rules:

Safety Rule S-13.1.1 - Going Between or Working on the End of Rail Equipment
Safety Rule S-13.1.3 - Tracks (Crossing tracks, stepping on rails and fouling tracks
Safety Rule S-13.1.11 - Installing or Removing Marker
Safety Rule S-13.2 - Coupling/Uncoupling Rail Equipment
Safety Rule S-13.3 - Air Hoses and Angle Cocks
Safety Rule S-13.4 - Crossing Over Rail Equipment
Safety Rule S-13.6 - Operating Hand Brakes
Safety Rule S-13.7 - Operating Switches and Derails
Safety Rule S-24.2 - Blue Signal Protection of Workmen

S-1.2 Rights and Responsibilities

We have the right and responsibility to perform our work safely. Our training, skills, work experience, and personal judgment provide the foundation for making safe decisions about work practices.

S-1.2.1 Sufficient Time
Take sufficient time to perform job tasks safely.

S-1.2.2 Authorized and Trained
Perform job tasks only when authorized and trained to perform them.

S-1.2.3 Alert and Attentive
Assure that you are alert and attentive when performing duties.

S-1.2.4 Co-Workers Warned
Warn co-workers of all unsafe practices and/or conditions.
S-1.2.5 Safety Rules, Training Practices, Policies
Comply with all company safety rules, training practices, and policies.

S-1.2.6 Warning Signs
Comply with verbal warnings, warning signs, posted instructions, and placards identifying restricted, safety and health precautions, or potential hazards.

S-1.2.7 Two or More People
Do not perform a task alone that can only safely be performed by two or more people.

S-1.2.8 Reporting
Make reports of incidents immediately to the proper manager.

S-1.2.9 Horseplay
Conduct yourself in a way that supports a safe work environment—free of horseplay, practical jokes, and harassment.

S-1.2.10 “Bill of Rights” Relative to Employees Riding in Transport Vehicles
Safety is a two-way street. Below are some expectations with respect to your rights regarding riding in transport vehicles.

A large percentage of our employees are transported to and from various locations on the BNSF daily. Safety is not only something for which we are each responsible, but we are also empowered to take those steps which make a safe workplace for ourselves and our co-workers. Please accept this challenge to exercise your rights with regard to riding in transport vehicles.

Right 1
Expect transport vehicles to be properly serviced, maintained, and in good working order. In addition, contract vans must be clean with all seat belts and all safety appliances working.

Right 2
Expect a safety briefing regarding movements to be made, route to be taken, location of safety appliances, i.e. fire extinguisher, first aid kit, emergency response plan in the event of a medical emergency, etc.

Right 3
Expect the vehicle to be parked in the most accessible location closest to the train, or crew pickup/drop-off point. The driver will take into consideration walking conditions and surfaces when positioning the vehicle. When possible, stop the vehicle off any public roadways.

Right 4
Expect the vehicle to be secured against movement after it has stopped for loading or unloading passengers and baggage, by placing the vehicle in park, securing the parking brake and shutting off the engine.

Right 5
Expect the driver to request assistance when backing where required due to vision limitations.

Right 6
During hazardous weather conditions, expect the driver not to use cruise control, and have the necessary traction devices, studs or chains, when weather requires.

Right 7
Our employees can expect that the driver will not be distracted from paying attention to the road while driving, by such things as eating and drinking.
Right 8
Our employees can expect every van used to transport employees between stations to have a functional two-way radio, which could be a crew member’s pack-set, tuned to the appropriate railroad frequency. In addition, when equipped with a cellular phone, it must be in working order.

Right 9
Our employees can expect assistance with baggage as requested.

Right 10
Our employees can expect that the driver will demand all employees to have seat belts on before the vehicle is moved, and will stop the vehicle when the driver is aware that seat belts are removed by any occupant.

Right 11
Expect that all doors are securely closed prior to departure.

Right 12
Expect to be reminded of the BNSF No Smoking Policy, as necessary.

Right 13
Our employees are empowered with the right to refuse to be transported in an unsafe vehicle, or be driven by a driver who does not meet the aforementioned criteria. However, in the same vein, all employees are responsible to abide by all rules, processes, and procedures that govern their working environment. No matter what we may think, these rules have been placed into effect for the continued safety and well-being of all employees. The sole responsibility of our safety cannot rest on just the driver. We cannot safely rely on the driver assuring that all employees remain buckled up after the vehicle is in motion. As co-workers, we are obligated to constantly remind each other to wear seat belts where required and to follow all rules that pertain to our work place.

S-1.2.11 Medical Conditions
All employees are responsible to ensure their personal medical conditions do not interfere with their ability to safely perform their duties.

Employees with medical conditions that may adversely (such as uncontrolled diabetes, high blood pressure, sleep disorders including apnea, visual impairment, hearing impairment, etc) affect their ability to work safely must inform their medical practitioner of their job duties. The medical provider must determine that any prescribed treatment including medication will not impair the employee from safely performing their job duties. The employee must notify their physician/medical provider if prescribed treatment and/or medication is affecting their ability to safely perform their job duties.

S-1.3 Personal Protective Equipment and Clothing

S-1.3.1 Requirements
Be familiar with and wear personal protective equipment and clothing as required by your job. Any changes made in the recommended use or design of personal protective equipment or clothing must be approved by the manufacturer.

S-1.3.2 Finger Rings
Do not wear finger rings unless you are working in an office or office-like area.

S-1.4 Tools and Equipment

S-1.4.1 Inspection
Inspect tools and equipment for defects before and during use. Repair or remove from service those that fail inspection. Promptly tag and report to your supervisor or person in charge any defect(s). If necessary, guard the hazard.
S-1.4.2 Use as Intended
Use tools and equipment for the purposes intended.

S-1.4.3 Manufacturer Specifications
Read and follow the manufacturer’s specifications when using tools and equipment.

S-1.4.4 Manufacturer Approval
Secure manufacturer approval for any changes made in the recommended use or design before using.

S-1.4.5 On or Off Moving Equipment
Do not get on or off moving equipment, except in emergency to avoid injury.

S-1.4.6 Three-Point Contact
Maintain three-point contact when getting on or off vehicles, equipment, and machinery, and when ascending or descending ladders or platforms. Three-point contact consists of both feet and one hand or both hands and one foot.

S-1.4.7 Physical Exertion
Employees must only use BNSF approved stretches when stretching at the beginning of the shift, before physical exertion, after rest breaks, and after a long period of sitting or maintaining the same posture. Employees are to stretch without exceeding personal capabilities, but must participate to the extent of their ability or as directed by a physician. Stretches following rest breaks may consist of a subset of the approved stretches.

Always use safe lifting practices when lifting, carrying or performing other tasks that might cause back pain, injury or property damage. Do not use excessive force to accomplish tasks. If one person cannot manually handle a load safely, then use mechanical assistance. Where mechanical assistance is not readily available, request assistance or stop and obtain the mechanical means necessary to complete the task.

S-1.4.8 Passengers
Transport passengers in vehicles equipped to transport passengers.

S-1.4.9 Seat Belts
Wear seat belts while operating or riding in equipment or vehicles that are equipped with them.

S-1.5 Work Environment

S-1.5.1 Housekeeping
Keep work locations, vehicles, and the inside and outside of buildings clean and orderly at all times.

S-1.5.2 Inspection
Inspect your work locations and vehicles for any conditions that might cause injury, property damage, or interference with service. If you find such a condition, take necessary action to protect against the hazard, or discontinue activities in the area or with the vehicle. Promptly tag (where appropriate) and report any defect or hazard to your supervisor or person in charge.

S-1.5.3 Footing
Be alert to all walkway conditions, and adjust your actions to accommodate weather, time of day, and grade. Guard against slipping and stumbling hazards by using handholds and railings when available. Except in emergency, running is not permitted in the performance of duty.
S-1.5.4 Confined Spaces
Consider all confined spaces hazardous unless proven otherwise. Only authorized and trained individuals may enter confined spaces.

S-1.5.5 Hazardous Materials
Handle contaminants and hazardous chemicals according to all applicable government regulations and BNSF policies.

S-1.6 Working On or About Tracks
S-1.6.1 Movement of Equipment
Expect the movement of trains, engines, cars, or other equipment at any time, on any track, and in either direction.

S-2.0 Chemical Safety
S-2.1 Environmental Safety
In compliance with BNSF’s environmental protection policy, take measures to prevent:
- Spills of oil or other material
- Discharge of contaminants to sewers, waterways, or the ground
- Smoke and gas emissions when operating combustion equipment
Treat all unidentified material as hazardous until identified. Do not transport unidentified material.

S-2.2 Chemical Spills and Chemical Releases to Air
In the event of a chemical spill or release of a chemical or unknown material to the air, evacuate the area. Report oil or hazardous material spills promptly to the dispatcher and your supervisor. Include in your report:
- Spill location.
- Material and amount of spill.
- Distance to the nearest public waters.
- Other important information.
Do not take any further action unless you are specifically trained to do so, using appropriate protective gear and work practices.
Do not re-enter the affected area until given the “All Clear” by incident response personnel.

S-2.3 Labeling Chemical Containers
At the time you place a chemical in a container, affix to that container a label identifying the chemical and appropriate hazard warnings.

S-2.4 Ventilation for Maintaining Safe Atmospheres
Provide mechanical ventilation to enclosed areas when:
- Applying solvents, paints, and other chemicals.
- Welding, torch cutting, or burning.
- Emissions from combustion engines, stoves, or heaters (especially in enclosed areas) may cause concentration of excessive airborne contaminants.
- Recommended in product instructions or MSDS.
S-2.5 Skin Cleaning
Do not clean any part of your body with gasoline, solvents, or oily rags. Use company-supplied hand creams and soaps for cleaning hands, arms, face, and other parts of the body.
If the skin has been exposed to corrosive agents (acids or bases), use plain water to flush continuously for at least fifteen minutes.
Do not apply ointments, soaps, or creams to chemical or thermal burns.

S-2.6 Containment and Spill Prevention
When dispensing petroleum products or other materials such as soaps and solvents from drums or containers:
- Whenever possible, place drums in a vertical position and use an appropriate pump for dispensing the product. Place an absorbent mat or dike on top of the dispensing drum or container.
- If drums must be placed in a horizontal position, use self-closing dispensing valves.
- Place the drum or container in a dike or other containment.
- Place containment devices such as drip pans under drums and valves.
- Properly label receiving container.
- When dispensing flammable liquids, ground and bond all containers.
- Gravity flow values are not recommended for outdoor usage.

S-2.7 Protection from Lead Exposure
Conduct all work involving lead coatings in accordance with BNSF’s Lead Protection program.

S-2.8 Protection from Asbestos Exposure
Conduct all work involving asbestos in accordance with BNSF’s Asbestos Control program.

S-2.8.1 Repair and Maintenance
When providing any repair or maintenance where Asbestos Containing Materials (ACM) or Potential Asbestos Containing Materials (PACM) will likely be disturbed, or where ACM or PACM will be removed, implement the Asbestos Control program.

S-2.8.2 Training
Before working with ACM or PACM, complete asbestos training. Complete additional asbestos training on an annual basis as long as you continue to work with ACM or PACM.

S-2.9 Protection from Manganese During Frog Repair
Whenever you are welding, torch cutting, gouging, carbon arc grinding, etc., on “frogs,” wear respiratory protection to reduce potential manganese exposure.
- Properly dispose of contaminated absorbent material and mats.

S-2.10 Protection from Silica-Containing Dust
Whenever you are exposed to visible airborne dust arising from ballast, taconite, or sand, wear respiratory protection.

S-2.11 Chemical Approval
Do not bring a chemical product onto BNSF property until the chemical is approved.
S-3.0 Electrical Safety

S-3.1 Requirements

S-3.1.1 General

- Use ground fault circuit interrupters (GFCIs) on electrical circuits when working in damp areas or outdoors.
- Do not use portable metal ladders for electrical work.
- Do not use electrical cords for hoisting or lowering.
- Test structures (metal buildings, flood light towers, etc.) with live power circuits, before touching them, to make sure they are not energized.

S-3.1.2 Authorized Employees

Only authorized and trained employees are permitted to work on electrical apparatus or equipment. Wear a dielectric hard hat when working where you could contact power lines or high-voltage equipment.

S-3.1.3 Warning Signs

Place danger signs near exposed energized circuits.

S-3.1.4 Flashlights

Use only an approved flashlight with a nonmetallic case around electrical equipment.

S-3.1.5 Contacts

Do not use flag sticks or other objects to close or open contacts on engines under electrical load.

S-3.1.6 Lockout/Tagout

Follow approved lockout/tagout procedures:
- Assume all wires, conductors, and other electrical equipment are energized, unless known to be locked out.
- Do not alter safety features of fuses, circuit breakers, or other electrical equipment.
- Do not open secondary circuits of energized current transformers.

S-3.3 Charging and Jumping Batteries

S-3.3.1 Precautions for Servicing Batteries

Follow these precautions when servicing batteries:
- Do not smoke in battery-charging areas.
- Do not allow open flames, sparks, or electric arcs in battery-charging areas or around exposed batteries.
- Make sure charging area is adequately ventilated.
- When charging a battery, keep the vent caps in place to avoid electrolyte spray.
- Leave the battery compartment doors open when charging an engine battery from an external source.
- Wear face shield over splash goggles and other protective equipment as required by the job when filling or charging a battery.
- Do not permit battery electrolytes (acid) to contact eyes, skin, or clothing. Wash battery electrolytes from your eyes or skin with cold water immediately.
Remove any leads from terminal posts when scrapping batteries.

S-3.3.2 Battery Flushing
Use insulated funnels for flushing batteries.

S-3.3.4 Metallic Objects
Keep tools, metal jewelry (including watches), and other metallic objects away from the top of uncovered batteries.

S-3.3.5 Jumping Batteries
Do not use a welding machine to jump-start a battery.

S-5.0 Fire Prevention, Response and Hazards

S-5.1 General Requirements
Know and understand area emergency plans and special instructions related to fire protection.
In case of smoke or fire, notify all individuals who may be affected, supervisors, and appropriate emergency responders.
Keep exit aisles, emergency exits, and fire doors clear. Keep areas around buildings, structures, and equipment free of fire hazards.

S-5.2 Emergency Procedures
Fight a fire only if properly trained and equipped and if your personal judgment dictates you can do so safely.

S-5.2.1 Locomotive Fires
Stop the locomotive as soon as possible, and evacuate the crew if a fire occurs on a locomotive.

S-5.2.2 Right-of-Way Fires
If the fire could spread to a bridge or other structure, stop the train, and fight the fire only if properly trained and equipped and if your personal judgment dictates you can do so safely.
Do not drive through plumes of smoke or chemical vapors unless necessary to escape from a life-threatening situation.

S-5.3 Fire Extinguishers and Protection Devices

S-5.3.1 Defective Fire Extinguishers
Report any out-of-date, discharged, or defective fire extinguishers to proper authority.

S-5.3.2 Access to Fire Extinguishers and Protection Devices
Maintain clear access to fire extinguishers, alarm boxes, and other fire protection devices.
Do not park vehicles or place material within 25 feet of fire hydrants.

S-5.3.3 Use of Gasoline/Oil-Burning Devices
Have an approved fire extinguisher readily available where the use of gasoline or an oil-burning device is authorized.

S-5.3.4 Open Flames
Never leave open flames unattended.

S-5.4 Starting Fires
Do not use gasoline, kerosene, or other highly flammable liquids to start or intensify a fire.
S-5.5 Fueling Vehicles, Machinery and Equipment
While fueling vehicles, machinery, power tools, and other equipment:

- Stop engines (diesel locomotives excluded).
- Do not smoke.
- Avoid open flames.
- Do not leave fueling hose unattended when fueling.

Fuel gasoline-powered tools before use. If refueling is necessary during use, be careful to avoid spills and allow the engine to cool before refueling, since hot engine parts may ignite fuel.

While fueling, make sure the safety can spout or hose nozzle touches the side of the tank opening to prevent static electricity discharge. Only use safety cans to transport fuel.

S-5.6 Electrical Circuits
If you are not experienced in handling energized electrical circuits, do not attempt to extinguish fires on power line poles or directly connected equipment.

Never use water to extinguish fires on energized power line poles or electric equipment.

S-5.7 Hazardous Material Storage and Dispensing
Store chemicals according to group and segregate each group from one another. Groups are defined as flammables and combustibles, oxidizers, caustics (bases), and acids.

S-5.7.1 Storing Chemicals
When it is not possible to segregate groups of chemicals by storing them in appropriate storage cabinets, separate groups by a minimum of 20 feet.

To separate chemicals for safe storage, store up to 25 gallons of flammables (flash point < 73° F) and up to 120 gallons of flammables or combustibles (flash point 73° F - 200° F) at least 20 feet away from other groups, or separated from other groups with a properly rated fire-resistant partition extending 18 inches above and beyond the flammables.

S-5.7.2 Grounding
Use grounding and bonding when dispensing or transferring flammable liquids.

S-5.8 Use and Handling of Liquefied Petroleum Gas (LPG)
S-5.8.1 Testing
Use only LPG tanks that are tested and stenciled as required by DOT regulations.

S-5.8.2 Avoiding Extreme Heat
Keep units powered by LPG away from extreme heat sources, such as ovens or furnaces.

S-5.8.3 Handling Leaks
Test for leaks with soapy water. Do not use an open flame near the leak.

If a tank containing LPG is leaking, notify your supervisor and stay upwind of the tank. LPG is heavier than air and will collect in low areas, sometimes far away from the leak source.

S-5.8.4 Refueling LPG Tanks
Refuel LPG tanks outdoors:

- At least 50 feet from buildings.
- At least 15 feet from storage tanks at the end farthest from the relief valve.
Change portable tanks outdoors, where possible, and at least 50 feet from any open flame except on outfit cars with kitchen facilities. When placing LPG tanks on motor vehicles, first stop the motor.

S-5.8.5 Closing Valves
At the end of the day’s operation, close valves on tanks of LPG-powered equipment to prevent leaks and potential explosions.

S-5.9 Refrigeration Systems
S-5.9.1 Qualified Employees
Only qualified employees may work on refrigeration systems.

S-6.0 Gas Welding, Cutting, Heating, and Arc Welding
S-6.1 Area Protection
Clear all combustible material or rubbish 35 feet away from the area where welding or cutting will be performed. Where relocation is impracticable, combustibles shall be protected with flameproof covers or curtains.

S-6.1.1 Protecting Wooden Structures
Use metal or a piece of wet flame-retardant material, or wet down the structure thoroughly when welding or cutting against or near wooden structures.

Use a fireproof covering adequate to protect the floor from sparks or hot metal when welding or cutting in a building with wooden floors.

Do not use wooden horses or boards to support welding or cutting work.

S-6.1.2 Protecting Concrete
Do not lay on concrete an object or material to be heated, cut, or welded.

Use protective material over concrete to prevent slag from falling on concrete when cutting metal with oxy/fuel gas.

S-6.2 Electrical Welding
S-6.2.1 General Requirements

- Do not stand in water or damp places while welding, except when wearing waterproof, insulated footwear.
- Set up a suitable screen marked “Do Not Look at Arc” at welding sites to shield those not engaged in the welding operation.
- Do not watch the arc if you are working near a welding process, but not welding.
- Use a wire brush to remove slag from material being welded. Do not use your hand, even if gloved.

S-6.2.2 Welding Machines
For welding machines:

- Ground the frame or case of a welding machine (excluding engine drive machines) under the conditions and according to the methods prescribed in the National Electric Code for fixed or portable equipment.
- Thoroughly dry and test wet machines before using them.
- Do not change the polarity switch setting on a welding machine while the machine is operating under a welding current load.
S-6.2.3 Welding Ground Connections
When welding ground connections:
- Secure the ground clamp as close as possible to the work before starting the electric weld.
- Do not connect the ground cable to any type of piping.
- Do not use chains, wire rope, cranes, hoists, or elevators to carry welding current.
- Do not make a welding ground connection in such a way that welding current will pass through any type of machine bearing.

S-6.2.4 Welding Cables
For welding cables:
- Use insulated locking connections when welding cable extensions are required.
- Repair deep cuts or cracks in welding cable casing promptly.
- Keep welding cables dry and free from grease and oil where practical.
- Uncoil and spread out coiled welding cables before use to avoid overheating and damage to the insulation.
- Do not use welding cables with repair splices within 10 feet of the electrode holder.
- Store electric welding cable in a dry, cool location, away from direct sunlight, when not in use. Clean the cable before storing, and coil it loosely with no sharp kinks or bends.

S-6.2.5 Electrode Holders
For electrode holders:
- Use only an approved electrode holder with insulated jaws.
- Keep electrode holders clean to prevent arcing.
- Do not cool electrode holders in water.

S-6.2.6 Electrodes
For electrodes:
- Remove metal and carbon electrodes from electrode holders when not in use.
- Retract or cut off the wire electrodes in semiautomatic holders, and remove the electrode holder from the power connection lug when not in use.
- Do not tap an electrode or strike an arc against a compressed gas cylinder.
- Dispose of used electrodes properly.

S-6.3 Fire Fighting Equipment
Have a fire extinguisher readily available when welding or cutting inside or immediately adjacent to a building.

Have a fire extinguisher, water, sand, or dirt readily available when welding or cutting on track or along the right-of-way.

S-6.4 Welding or Cutting in Confined Space
Test all equipment for leaks and adjust regulators before entering a confined space. Purge the accumulated mixture in the hoses by opening the torch valve for about ten seconds.

When performing hot work, comply with the practices and precautions outlined in the BNSF Confined Space Program.

Remove all welding equipment from the confined space if work is interrupted.
S-6.5 Restrictions for Making Welding Equipment Repairs

S-6.5.1 Torches, Regulators, or Other Welding Apparatus
Do not tamper with or attempt to make field repairs to gas cylinders, welding torches, regulators, or other welding apparatus.

_exception_: You may tighten packing gland nuts on leaking torches.

S-6.5.2 Hooks and Chains
Do not weld, cut, or heat:
- Heat-treated hooks.

_or_
- Steel alloy chains and associated rings, links and couplings.

S-6.5.3 Flammable Containers
Do not weld, heat, cut or rivet tanks, tank cars, locomotive fuel tanks, barrels, pipes or similar containers that have held gasoline, oil or other flammable or explosive material until the containers have been thoroughly purged.

_exception_: When under authorized supervision, repair or modify diesel or lube oil pipelines, storage tanks, dispensing facilities or fuel tanks without purging. Follow prescribed procedures.

S-6.5.4 Protection from Chlorinated Solvents
Do not weld, cut, burn or braze metal cleaned with chlorinated solvents until all surfaces, both inside and out, are clear of the solvent and solvent vapor.

S-6.6 Oxygen and Fuel Gas

S-6.6.1 General Requirements
- To prevent a possible explosion, do not allow oil or grease to come into contact with oxygen or any equipment through which oxygen passes.
- Do not use oxygen to dust off clothing or work areas.
- Do not allow a jet of oxygen to strike an oily surface or greasy clothes, or to enter a fuel oil or any other storage tank.
- Use a layer of clean sand, a metal plate, or other suitable material to protect oily or greasy floors or the ground from slag.
- Do not allow the operating hose pressure for acetylene to exceed 15 psi.
- Do not pass a lighted torch to another employee.
- Use a wire brush to remove slag from material being welded or cut. Do not use your hand, even if gloved.

S-6.7 Welding Hose and Fittings

S-6.7.1 General Information
- Date-tag new and employee-assembled hoses when placed in service. Place the date tag at the regulator end of the hose.
- A minimum of 6 inches of hose should be removed from the torch end annually, or more frequently whenever damage or wear indicates that replacement is necessary.
- Do not place a welding hose that is in use over any part of your body.
- Do not use a hose with more than one splice per 50-foot section.
- Select fittings with adequate inside diameter to avoid flow restrictions.
S-6.7.2 Welding Hoses
Use only grade “T”, 3/8-inch twin hoses for gas welding, cutting, and heating operations.

S-6.7.3 Welding Hose Fittings
For welding hose fittings:
- Use a crimped clamp to permanently attach hose fittings to welding hoses. Do not use bolted hose clamps.
- Use only fittings furnished by a qualified supplier in compliance with OSHA regulations.
- Do not use dropped or damaged fittings.
- Each time a fitting is installed, an approved leak detection liquid must be used to test for leaks at fittings.

The following requirements must be met when quick disconnects are used in oxygen/fuel gas processes:
- Purchase only approved, UL-listed quick disconnects.
- Employees must receive training on quick disconnects prior to their use and demonstrate safe use of the equipment.
- Quick disconnect flow rating must meet or exceed the SCFH requirements for the attached equipment.
- Do not install quick disconnect fittings in systems where splices, couplers or additional fittings are used to lengthen or repair damaged hose assemblies.
- Do not use quick disconnects with check valves when a check valve is an integral part of the flash back arrester. (Additional check valve will reduce flow rates.)
- Flash back arrester must still be used. Quick disconnects do not replace the need for a flash back arrester. Do not install the quick disconnect directly to the flash back arrester.
- Prior to initial use, and before attaching the torch to the assembly (fittings), use a direct reading instrument to verify that an adequate flow rate will be reaching the torch.

Exception: Quick disconnects shall not be used in System Engineering welding applications.

S-6.7.4 Welding Hose Fires
If a fire develops in a hose, remove the torch, regulator, and hose from service.

S-6.8 Installing Reverse Flow Check Valves and Flashback Arrestors
S-6.8.1 Portable Systems
On portable systems, install combination reverse flow check valves/flashback arrestors at the torch on both the fuel gas and oxygen lines.

S-6.8.2 Bulk Fuel or Manifold Fuel Gas Systems
On bulk fuel or manifold fuel gas systems, install pipeline protective device(s) on the fuel gas line that performs the following three functions:
1. Prevents backflow of oxygen into the fuel gas supply.
2. Prevents flashback into the fuel gas supply.
3. Provides pressure relief through the use of a pressure relief valve, rupture disk, or similar device.

Install a pressure relief device on the supply line from the oxygen source. All these devices must precede the service outlets.
Install reverse flow check valves at each station outlet on the fuel gas and oxygen lines. Install combination reverse flow check valves/flashback arrestors at the torch on both the fuel gas and oxygen lines.

By placing unnecessary check valves in the systems, the safety of the employee may be adversely affected due to the restriction in flow rates to the torch. A direct reading in-line instrument should be used to insure that adequate flow rate is reaching the torch.

S-6.9 Oxy/Acetylene Torch
For oxy/acetylene torches:
- Use only approved flint strikers to light a welding torch.
- Do not lay a lighted torch down, pass it from one person to another, or hold it when climbing.
- Do not leave a cutting or welding torch in a tank, tank car, fuel compartment, or other similar work location when not in use.
- Do not test the flow of the oxygen or fuel gas by placing the torch tip against your face or body, or by smelling it.

S-7.0 Hand Tools
S-7.1 Hand Tool Inspection
Inspect tools for defects before use. Do not use tools with:
- Cracks.
- Mushroomed striking surfaces.
- Burrs.
- Slivers.
- Loose/missing wedges.
- Worn ratchets/teeth.
- Loose/cracked handles.
  or
- Other defects.

S-7.2 Redressing of Striking or Struck Hand Tools
For redressing of hand tools:
Prior to redressing, visually inspect the tool for the following:
  a. A manufacturer’s brand.
  b. A letter “B” to identify grade B steel.

If either brand or letter is not found, discard the tool. Also discard the tool if it is mushroomed, spalled or chipped.

Redressing of grade B tools is allowed. Redressing is allowed on non-grade B steel hand punches and chisels manufactured by Snap-On, Proto, S & K, Ajax, Mayhew and Williams only.

Redress tools frequently to reduce the amount of flow on the struck end of the tool.

Redress tool with a hand file only, unless you are qualified to redress tools with a properly equipped bench grinder. “Qualified” means approved by a certified instructor upon completion of BNSF “Redressing of Hand Tools” course.
S-7.3  Precautions During Use
When using tools such as knives, chisels, and screwdrivers, direct sharp edges away from your body or hands.

S-7.3.1  Swinging Tools
Warn others to keep clear when using swinging tools (such as a spike maul, sledge, hook-a-roon, ax, pick, brush hook, hand adze, etc.). Stand so that the point is away from your body if the tool unexpectedly flies to the side.

Before using swinging tools, remove oil, grease and dirt from hands and handles.

S-7.4  Pry/Lining Bars
Never straddle, sit, or stand on a claw bar, lining bar, anchor wrench, or similar tool.

S-7.6  File Cleaning and Use
Use files with handles. Clean the file with a brush.

S-7.7  Correct Tool Use
Use tools only for what they are designed to do. If unsure about a tool’s correct use, ask your supervisor.

S-8.0  Intermodal/Automotive Facility Safety
S-8.1  Core Intermodal/Automotive Facility Safety Rules
- Establish proper track protection before performing work.
- Vehicles must not STOP on, PARK on, or FOUL tracks, without proper protection.
- Do not drive or park on lift equipment lanes, under lift equipment, or impede lift equipment movement.
- Obey all posted safety signs, signals, and painted markings.
- All vehicles must turn on headlights and use turn signals.
- Never place any part of your body in a pinch point position (i.e. when removing IBC with container suspended, standing between containers, trailers, chassis, or area where hitch is to collapse), or walk under equipment being lifted.
- Maintain three-point contact when getting on and off equipment.

S-8.2  Track Protection
In addition to BNSF on track protection procedures used for work group protection the intermodal hub operations manual identifies procedures for BNSF intermodal employees and contractors. The intermodal ramp coordinator is responsible for ensuring that protection is provided for ramp personnel performing functions on or in the vicinity of intermodal tracks, for properly looking out any track(s) to be worked on, and for properly removing track protection, in accordance with the Intermodal Hubs Operations Track Protect Section.
S-8.3  Vehicles Within Intermodal Facility

S-8.3.1  Vehicle Requirements
Required safety equipment on yard vehicles must be functioning and used when vehicle is operated on the facility. This includes strobes or oscillating lights, headlights, tail lights, and brake lights, turn indicators, and windshield wipers. In addition, all yard pickup trucks, crew vans, trailer repair, tire repair and other vehicles permanently assigned to the facility must be equipped with chassis deflector bars.

S-8.3.2  Vehicle Operations
- Stop for flares and flashing lights at crossings.
- Yield to trains, yard equipment and pedestrians.
- Cross only at designated crossings.

S-8.4  Check Point Ingate / Outgate Procedures
All vehicles entering or departing through checkpoint must comply with the following procedures:

1. An area has been established 35 feet from the inspection lane, and is declared the safe clearance zone between trucks and inspection lane. A three foot wide area is painted RED across each lane. Exceptions: South Seattle, Billings, Shelby, Dilworth - (No safe zone required not manned) St. Paul, Spokane, Portland - (15 feet from the inspection lane) San Bernardino - (KIOSK outgate 15 feet from the inspection lane) Rancho East & West - (10 feet from the inspection lane).

2. Stop signs are posted at this area in each check lane and the ground stenciled with the word STOP (painted in WHITE) across the lane.

3. Mounted on the pole below the stop sign is a white sign with black lettering stating: "WAIT FOR SIGNAL TO MOVE FORWARD".

4. Cones with a height of 48 inches will be placed in the middle of each check lane and removed only by the inspector that signals a vehicle to pull forward. When the vehicle is stopped the inspector will replace the cone back into the middle of the check lane. This procedure is repeated each time an inspection is to be performed.

5. The cone shall remain in the middle of a clear check lane until the inspector removes the cone and signals the vehicle to pull forward.
S-9.0 Ladders, Platforms, Scaffolds, and Aerial Baskets

S-9.1 Inspection
Before using a ladder, scaffold, platform, or elevated board, inspect it to make sure it is securely placed and capable of supporting a load. Do not use cross-grained or knotty lumber in any part of the device.

Before using ladders, inspect them for:
- Broken, cracked, or missing steps, rungs, or cleats.
- Broken side rails.
- Other defects.

Never use a defective ladder. Tag and mark it for repair or replacement. Do not paint wooden ladders or splice side rails.

S-9.2 Storage
Store ladders (except vehicle-carried ladders) where they will not be exposed to the weather.

S-9.3 Stage Boards
When using stage boards not securely fastened to the supports, do not let them extend more than 6 inches beyond the last support. Use stage boards equipped with end stops or drop pins to keep them in place on the supports.

S-9.4 Safety Feet
Use only portable straight ladders equipped with grippers, cleats, or nonslip safety feet suitable to the surface on which the ladder is placed.

S-9.5 Ladder and Scaffold Placement
Place a straight ladder so that the distance from the base of the ladder to the vertical plane of the support is approximately 1/4 the ladder length between the supports and ladder base.

When setting ladders or portable scaffolds:
- Extend the ladder side rails at least 3 feet above the surface you will be stepping onto.
- Place the legs on firm footing and secure them against movement.
- Do not lean legs against an unstable object.
- Do not place legs on boxes, barrels, or blocks for additional height.
- Secure the ladder or scaffold in position if it could move.
- Do not use ladders in a horizontal position as runways or scaffolds.
- Secure ladders used near a door, aisle, pathway, or roadway, or have a co-worker guard the ladder base. When using a ladder within the swing of a door, secure the door or have employee guard the ladder base.

S-9.6 Ladders for Electrical Work
Do not use metal ladders or scaffolds while working on energized electrical circuits. Use approved fiberglass or other type of approved nonconductive ladders.
S-9.7 Instructions for Climbing
When climbing:
- Always face ladders or scaffolding.
- Do not stand higher than the manufacturer’s specifications dictate.
- Have only one person on a ladder at a time.
- Do not jump or slide from a ladder, scaffold, platform, or other elevated position.
- Do not move laterally from one ladder to another.
- Never overreach or attempt to “walk” a ladder.
- Keep the center of your body within the outside rails of the ladder.

S-9.7.1 Climbing with Tools or Materials
- Do not climb ladders with tools or materials in your hands; use a hand line.
- Position tools or materials on a scaffold or platform where they will not fall or be knocked off.

S-9.8 Performing Work
Do not work under a ladder.

S-9.9 Extension Ladders
Use only approved extension ladders, and use them as follows:
- Carefully raise them so that the top of the ladder safely overlaps the support by 3 feet minimum.
- Make sure guides and hooks are properly engaged.
- Do not splice short ladders together to make a longer one.

S-9.10 Step Ladders
Follow these instructions when using step ladders:
- Use only a fully open step ladder with spreaders properly set.
- Do not use step ladders taller than 10 feet unless another employee holds and steadies the ladder.

S-9.11 Construction Scaffolding
Use only scaffolds and suspended platforms constructed and maintained according to departmental instructions.

Do not stand on the handrails of any scaffold or platform to gain additional height.

S-9.11.1 Sectional Metal Scaffolds
Erect sectional metal scaffolding according to the manufacturer’s instructions and adequately brace. Maintain outriggers in good working condition and protect from damage.

S-9.12 Non-Powered Mobile Scaffolding
When using non-powered mobile scaffolding:
- Do not ride rolling scaffolds.
- Secure or remove all material and equipment from the platform before moving the scaffold.
- Apply caster or wheel brakes at all times when a scaffold is stationary.
- Do not try to move the scaffold without help.
Watch out for holes in the floor and for overhead obstructions when moving the scaffold.
Follow the manufacturer’s guidelines for adjusting screws.

S-9.13 **Aerial Work Platforms**

When working from aerial platforms, including scissor lifts and boom-mounted baskets or buckets:
- Check pathway and overhead for obstructions before moving the platform.
- Always stand firmly on the floor and do not sit or climb on the edge of the platform or use planks, ladders or other objects to increase reach.
- Do not exceed the manufacturer’s rated safe load.
- Maintain a safe distance from high-voltage power sources.
- Do not modify the equipment without prior written approval from the manufacturer.

**S-9.13.1 Scissor Lifts**

When working from a scissor lift:
- Platform must be equipped with a guardrail and toeboards. Guardrails must be completely installed, in good condition and with gates fastened.
- Never climb or stand on toeboards or guardrails. Never hang outside the guardrails.
- If required by local or state law, a safety belt or harness must be worn that meets the same requirements as stated below in S-9.13.2. Safety belts may only be used for fall restraint in scissor lifts.
- Personnel using fall protection or restraint equipment must attend appropriate training.

When working from elevated platforms or scissor lifts, use only elevated platforms or scissor lifts equipped with a guardrail and toeboards.

**S-9.13.2 Boom-Mounted Baskets or Buckets**

When working from a boom-mounted basket or bucket:
- A safety belt or harness equipped with a lanyard that restrains personnel within the platform must be worn to prevent personnel from being ejected out of the platform.
- The lanyard must be secured to an anchor point designed and designated by the manufacturer for this use.
- Do not attach the lanyard to a pole, piece of equipment, or any other structure.
- Do not allow the platform to rest on or against any structure or equipment while working from the platform.
- Do not climb in or out of an elevated basket or bucket, unless it is equipped with a door or a gate and the lift is positioned to provide safe access.
- On equipment designed primarily as personnel carriers, use only equipment with upper and lower platform controls where the lower controls can override the upper controls.
- Personnel using fall protection or restraint equipment must attend appropriate training.
S-10.0 Locomotive and Railcar

S-10.1 Raising Equipment

When raising equipment:

- Block the wheels before raising the end of the equipment.
- Do not place any part of your body under or directly alongside the equipment at any time during jacking/lifting process unless the equipment is (a) supported by approved stands or blocking, or (b) the equipment has been lowered back onto the trucks with proper blocking from truck to car body, or (c) or the jacks are returned to their lowered position.
- Stands must be certified and stenciled with rated capacity.
- Use the proper tongs to remove or position center pins on the cars.
- Use cushioning material between the jack and equipment to prevent slipping. Wood cushioning material must not exceed 1 inch in thickness. Do not allow metal-to-metal contact.

S-10.1.1 Safe Jack Use

When jacking an engine, car, or other heavy equipment, make sure to use a jack with the proper capacity and level. Jacks should be stenciled with the proper load rating.

S-10.2 Moving and Spotting Locomotives Within Mechanical Limits

S-10.2.1 Moving

When moving locomotives within mechanical limits:

- Visually inspect the locomotive or consist before moving it.
- Ensure that adequate main reservoir pressure exists and brakes are operable.
- Remove blue signal protection on the locomotive or consist to be repositioned.
- Make sure all personnel are clear of movement.
- Release the hand brake and wheel blocks on the locomotive to be repositioned. When increasing or decreasing the number of units, the operator must be certain that the units left unattended have enough hand brakes applied to prevent movement.
- Give and receive the proper signal before moving.
- When moving, ring the engine bell continuously and have headlights on dim in the direction of movement. Exception: When moving dead or non-MU locomotives, headlight and bell are not required. Personnel must protect the point of movement.
- Sounding the whistle within mechanical limits is prohibited, unless in emergency or when approaching roadway workers on or near the track.
- Do not exceed 5 mph within shop facility or 1 mph on turntables.

S-10.2.2 Spotting

When spotting locomotives within a shop facility:

- When the locomotive is in a new position, apply the independent brake, apply the hand brake on each locomotive, and place wheel blocks where applicable. Exception: At mechanical facilities, when locomotives are protected by outbound derails on designated servicing tracks, apply a sufficient number of hand brakes to prevent undesired movement.
- Remove the reverser lever from the control stand.
- Place the generator field switch to OFF.
- Reestablish blue signal protection.
S-10.3 Working On or Near Engines

S-10.3.1 Applying Warning Signs and Tags

Use the locomotive lockout/tagout procedure as listed below whenever stored energy could be released unexpectedly.

- To prevent the diesel engine from turning over or to de-energize electrical circuits.
- To leave the battery switch in and disable the starting circuit while working on the locomotive.
- To work on an electrical circuit protected by a circuit breaker.
- To adjust brakes or work on running gear.

Never remove a tag placed on a locomotive by another individual. Apply a tagout device only on a battery switch that is open. The moveable side of the battery switch does not have battery voltage across it when the switch is open.

S-10.3.2 Sounding Alarm Bell

Before starting the engine:

1. If the engine is equipped with a starting alarm bell, sound the bell.
2. Determine that all employees are clear of moving parts.

S-10.3.3 Avoid Hazards While Working

When working on or near engines:

- Do not put your face or hands near the main generator or any high-voltage equipment while it is working under load.
- Avoid open flames in the engine room unless duties require.
- Do not pull fuses while they are under load.
- Shut down the engine to inspect the fan and radiator compartment.
- Do not open the ground relay protective knife when the ground relay is tripping.
- Mark and barricade the doors in a locomotive to prevent unauthorized persons from entering the cab when the cab floor is removed.
- Carefully remove the radiator cap on a hot engine following the manufacturer’s instructions.

S-10.3.4 Working on Air Brake Rigging

Ensure that wheels are choked before working on air brake rigging.

For equipment with air brake truck cutouts:

Cut out the air brakes at the truck cutout before working on the air brake rigging of engines, cars, or other equipment.

For equipment without air brake truck cutouts:

1. With air in the brake pipe, close the angle cocks at both ends of the equipment and close the branch pipe cutout and drain the reservoirs before working on rail cars and other equipment.

   or

2. With the brake pipe vented to atmosphere and no air charge in the brake pipe, drain the reservoirs before working on rail cars and other equipment.

After repairs are completed, open all angle cocks and cutout cocks to render the brake system operational.
S-10.4 Rotating Crankshaft
To rotate a diesel engine crankshaft with a turning bar, engine turning jack, or other device.
- Stay clear of all pinch points before rotating the crankshaft.
- Move the fuel transfer pump switch to OFF.
- Remove the starting fuse, or block open the starting contactors, and open the cylinder test valves two or three turns.
- Warn others on the locomotive before cranking the engine.

S-10.5 Locomotive Inspections, Tests and Maintenance
S-10.5.1 Inspection and Maintenance

A. Main Generator and Power Circuits
While working on or inspecting the main generator or power circuits on locomotives:
- Move the generator field switch to OFF.
- Place the isolation switch in ISOLATE.
- Isolate the power plant from the control on multiple-unit engines.

B. Traction Motors on Diesel Engines
When inspecting a traction motor:
- Shut down the diesel engine.
- Move the generator field switch to OFF.
- Close the throttle.
- Remove the detachable reverser handle.
- Set the air brakes.
- Place a “Do Not Start” tag on the engine prime/start switch.

At other than established inspection or shop locations, carry the reverser handle while making the inspection and tag the control stand “Out of Service.”

C. Repairing Switches, Contactors, or Relays
Before repairing switches, contactors, or relays on diesel engines, shut down the engine and open the control switch and main battery switch.

Before repairing switches, contactor relays, or related electrical apparatus:
- Shut off all power.
- Use a volt meter to insure that all currents have been disconnected.

S-10.5.2 Preparing for Test

A. Testing Diesel Unit
When testing a diesel unit with the engine running or shut down, or when testing a unit connected to other engines that are running:
1. Do not advance the throttle from idle until the air brakes and the full independent brake are applied and:
   a. All brake cylinders are cut in.
   or
   b. Wheels are chocked with the hand brake set.
2. Move the generator field switch to OFF.
3. Center the reverser lever.

B. Horsepower Load Testing and Self-Testing
When horsepower load testing the locomotive:
1. Disconnect all MU cables to isolate the locomotive from the remaining consist.
2. Follow the manufacturer’s instructions for performing self-tests.

C. Stall Testing
When stall testing the locomotive:
1. Disconnect all MU cables to isolate the locomotive from any other locomotives.
2. Do not advance the throttle from idle until the air brakes and full independent brake are applied and all brake cylinders are cut in.
3. Do not advance the throttle past notch ONE. Do not allow unit to move.

D. Dynamic Brake Testing
When dynamic brake testing the locomotive, follow the manufacturer’s instructions for dynamic brake testing.

S-10.5.3 Conducting Load Test
Only authorized employees may be on diesel units undergoing a load test. Wear hearing protection when conducting a load test. If the total load test time in a 24-hour period exceeds six hours (e.g., second work shift), wear double hearing protection (ear plugs and muff) for the second work shift. Keep all people not involved in the operation clear.

S-10.6 Safety Guards
Before putting the engine in service, securely fasten all safety guards, equipment cabinet covers, and ceiling hatch covers.

S-10.7 Precaution Entering Restricted Access Cars
Only employees trained in and using confined space techniques may enter restricted access cars.

S-10.8 Doors/Load Dividers
Employees must position themselves to avoid being struck by:
- Falling door/load dividers.
- Mechanism or handle under tension.

S-10.8.1 Doors
Before opening or closing doors on a freight car, closely inspect all door parts to make sure they are intact and properly positioned. Do not open or close doors using the following equipment, unless the equipment is specifically designed for the purpose:
- Truck.
- Tractor.
- Shop mule.
- Forklift.
- Other self-propelled equipment.

Do not remove or replace doors while the car is on jack stands.
S-10.8.2 Load Dividers
Before moving load dividers in freight cars, make sure overhead carriage and gate hanger parts are intact and properly positioned.

S-10.9 Securing Unattended Equipment
Secure on-track or off-track rolling equipment when leaving it unattended.

S-10.10 Steel Cables for Moving Cars
When using steel cables to move engines, cars, or other equipment:
- Keep employees clear of the cables.
- Do not step over the cables.

S-10.11 Repairing Cars Containing or Last Contained Hazardous Materials
Follow these guidelines when making running repairs to cars containing or that last contained dangerous or hazardous materials:
1. Determine the car’s contents or last contents and be familiar with the physical properties and specific hazards of the material. Foremen and car inspectors must possess and understand:
   - DOT Emergency Response Guidebook.
   - Copy of the most recent waybill for the car.
   - Copy of hazardous material information from either the system computer or a copy of the AAR/BOE book “Emergency Handling of Hazardous Materials in Surface Transportation.”
2. Inspect the car for leaks, open valves, or partially open bottom bay doors, or other outlets. Keep ignition sources, such as sparks and fires, away until you determine that no leaks, vapors, or hazardous materials are present or may interfere with repairs.
3. If you detect or suspect leaking material:
   a. Evacuate others from the area. Stay upwind to avoid adverse reactions to the material, until incident response personnel determine that you can safely return.
   b. Immediately report all leaks to your supervisor, the BNSF Resource Operations Center (ROC) 1-800-832-5425, and the Service Interruption Desk.
4. Do not heat or cut any part of the tank.
5. When using a torch to repair parts other than the tank:
   a. Place a sheet of protective material between the tank and the flame.
   b. Keep the heat directed away from the tank.
   c. Always check cars for possible HazMat contamination before beginning repair, torch, or welding work.

S-10.12 Starting and Idling Locomotives Inside Shops
Do not start or idle locomotives inside a shop unless exhaust is directly discharged outside and exhaust is not allowed to accumulate indoors.

S-10.13 Painting
When painting:
- Obtain and use the appropriate PPE for painting operations.
- Keep sparks, flames, and other ignition sources away from painting operations.
- Refer to MSDS for proper handling of all paint products.
S-10.14 Adding Water to Locomotives

When adding water to General Electric locomotives, use the fill cone and vent/fill valves. Do not remove the pressure cap to add water to General Electric locomotives. Employee must follow the detailed manufacturers instructions that are stenciled on the locomotive.

S-11.0 Material Handling

S-11.1 Material Storage

S-11.1.1 Stacking Material

Store material neatly, interlocking it where possible to prevent shifting or falling. Do not store heavy materials on top of fragile or crushable materials. Material should be stored only on shelving or racks with sufficient rated capacity.

S-11.1.2 Overhead Clearance

Maintain a minimum of 18 inches of clearance below sprinkler heads so they can operate effectively in the event of a fire.

S-11.1.3 Storing Combustibles

Keep combustible materials away from a source of ignition.

S-11.1.4 Storage Racks

Secure material storage racks to floor or wall where there is greater than a 3-to-1 height-to-depth ratio. If racks can be fastened together to achieve 3-to-1 ratio, no securement is required. Inspect pallet racks and shelving on a regular basis.

S-11.2 Hand Trucks

When possible, push a hand truck rather than pulling it. However, if assisting someone, push the hand truck from the rear, not from the side, and stand where you can see ahead clearly.

When pulling a hand truck, do not jerk it to get over an obstruction; pull with a steady force. Do not walk backward while pushing or pulling a hand truck or wagon. Do not ride on hand trucks or wagons.

S-11.3 Pallet Use and Stacking

When stacking loaded pallets:

- Determine how much the material and packaging can support.
- Stack pallets only as high as the material on the bottom of the stack can support.
- Inspect pallets for damage and stability.

The forklift operator must warn others working near the stacking operations.

S-11.4 Loading and Unloading Cars, Trucks, and Trailers

When loading and unloading cars, trucks, and trailers:

- Chock wheels of cars, trucks, and trailers spotted at doors and platforms before loading or unloading.
- Use truck jacks at the front of trailers, in addition to chocking, where trailers are not attached to tractors.
- Make sure all transfer equipment (gangplanks, transfer plates, etc.) is properly secured before using it.
- Do not place gangplanks, transfer plates, or skids in doorways of cars coupled to a locomotive unless there is protection against movement.
- Do not load and unload trailer truck while tractor is being coupled or uncoupled.
- Trucks and trailers secured by an automatic locking bar hooked to the ICC Bar do not require chocks.
S-11.5 **Sharp Edges**
Eliminate sharp or ragged edges and nails on drums, cans, and kegs when using them as shipping containers.

S-11.5.1 **Banding Material**
Carefully handle banding material and tools as follows:
- Wear cut-resistant or leather gloves to protect your hands from sharp edges of banding.
- Use only band cutters to cut steel bands.
- Place scrap banding in suitable containers for disposal, or move it to a designated area.

S-11.6 **Wheelsets**
To move or stop a freight car or locomotive wheelset:
- Inspect wheelset for burrs, slivers or other sharp edges.
- Wear puncture resistant gloves.
- Use mechanical means for moving wheelsets whenever possible, such as forklift or axle mover.
- Position yourself on the trailing side of the wheelset. Slowly move wheelset to desired position by grasping the flange and rim of wheel. Do not allow hand(s) to slide on wheel.
- Keep hands clear from pinch points that may be created by adjacent wheelsets.
- When possible, place wheel chocks, stops, or skates on rail where wheelset will be stopped.
- Do not walk in front of the wheelset or leave wheelset unattended until they are stopped and secured.

S-11.7 **Hazardous Material Handling**

S-11.7.1 **Complying with Regulations**
Handle all hazardous materials, wastes, and substances, as defined by the DOT and EPA, according to federal, state, and local regulations and company policy. An authorized employee must supervise the task.

S-11.7.2 **Loading or Unloading Tank Cars**
When loading or unloading tank cars:
- Make sure cars are protected against movement when loading or unloading material.
- Set hand brake and chock wheels before loading or unloading.
- All tank cars must have a railing around the platforms where workers stand.
- Make sure the outlet valve is shut off.
- If material is flammable, use non-sparking wrenches. Do not smoke or generate sparks or open flames.
- Properly ground tank cars containing gasoline or other flammables.

S-11.7.3 **Handling Fluorescent/Neon Tubes**
Handle fluorescent or neon tubes carefully. If they break, do not inhale the dust and vapor. Dispose of in accordance with BNSF policy.

S-11.7.4 **Disposing of Spray Containers**
Carefully store and dispose of pressure spray containers. Do not expose them to excessive heat. Dispose of them per state law.
S-11.8 Forklifs

S-11.8.1 Parking Requirements
Do not park a forklift on a ramp or incline. When parking a forklift:
- Park the forklift clear of obstructions.
- Set the hand brake.
- Lower the forks.

S-11.8.2 Dismounting Forklift—Attended and Unattended Forklifts
When dismounting forklift and still in attendance of the equipment (within 25 ft. and forklift in sight):
- Bring the forklift to a complete stop.
- Place directional controls in neutral.
- Apply the parking brake, and if equipped with automatic brake, place in Park.
- Lower forks to the ground. (Exception: when task requires elevated load)
- Use three-point contact when climbing from forklift.
- Do not allow yourself or others to be directly in front of or behind forklift, unless engine is shut off.

When leaving a forklift unattended:
- Lower forks to the ground.
- Shut off the engine.
- Remove the key (where security is a problem).
- Do not allow the forklift to foul tracks.
- Apply the parking brake, and if equipped with automatic brake, place in Park.

S-11.8.3 Passengers
Passengers are not allowed on forklifts unless the truck is equipped with a passenger seat and seat belt.

S-11.8.4 Tool Storage
Do not place tools, material, or other objects onto a forklift that may interfere with its operation.

S-11.8.5 Seat Belts
Use seat belts where provided.

S-11.9 Forklift Operation

S-11.9.1 Speed and Movement Restrictions
When operating a forklift:
- Reduce speed and sound the horn when rounding corners or passing doorways or congested areas.
- Watch for and avoid contact with overhead and side obstructions and high-voltage wires.
- Make sure the way is clear before moving in any direction.
- Bring a forklift to a complete stop before reversing direction.
Look in both directions before crossing tracks. Where possible, cross diagonally.

Operate the forklift backwards if the load obstructs your view.

**S-11.9.2 Getting On or Off**
Do not get on or off a moving forklift. Maintain a three point contact when getting on and off forklifts.

**S-11.9.3 Operation on Ramps**
Back a loaded forklift slowly down ramps or inclines.

**S-11.9.4 Gates/Doors**
Do not use a forklift to open or close doors or gates on buildings.

**S-11.9.5 Load Limits**
Do not pick up loads that exceed the forklift’s marked load capacity. Do not move the machine until the load is secured.

**S-11.9.6 Unloaded Fork Position**
When moving an unloaded forklift, keep the forks 18 inches or less from the floor or ground to avoid obstructions.

**S-11.9.7 Personnel Baskets**
When using personnel baskets:
- Use a forklift only as an elevator for employees (for example, to service light fixtures) when it is equipped with an approved work platform that meets OSHA standards.
- Always secure the approved basket to the mast guard when using forklift to lift personnel.
- Ensure that passengers stand only on the floor of the basket.
- Forklift operator must stay at controls while basket is occupied.

**S-11.9.8 Inspections**
- Always do a safety inspection of a forklift before operating it the first time.
- Complete safety inspection records as required.
- Promptly report all defects for needed repairs to the proper authority.
- When defects are found, which affect the safe operation of a forklift, the forklift is to be red tagged, the key is to be removed and the defect immediately reported to the proper authority.

**S-11.9.9 Fueling a Forklift**
- Turn off the engine.
- See Rule S-5.8 for requirements regarding LPG tanks.

**S-12.0 Motor Vehicles and Trailers**

**S-12.1 Operation of Motor Vehicles**

**S-12.1.1 General Requirements**
Every company driver must:
- Know and obey local, state, and federal laws and regulations for operating vehicles, both on and off company property.
• Carry a required driver's license.
• Complete a vehicle log and inspection form, if applicable.
• Ensure that necessary emergency equipment, tools, and a fire extinguisher are in the vehicle and in good condition.
• Use headlights any time the vehicle is moving.
• Do not exceed the manufacturer's specifications for speed.

Drivers must notify their supervisor and stop operating vehicles if their license or permit is suspended, revoked, or restricted.

S-12.2 All Terrain Vehicles (ATVs)

The operation of ATVs by BNSF personnel requires the following:
• ATVs must be modified to limit maximum speed to 15 MPH or less.
• Operators must have completed an ATV Safety Training Course (including checkride), before operating an ATV.
• Employees must wear helmets that meet the DOT Standard 218 “Motorcycle Helmet” or BNSF-approved bicycle helmet when operating ATVs. These DOT helmets and bicycle helmets are not to be worn as head protection in overhead hazard areas such as under craneways or when people are working above others. In these areas, hard hats are required.

Note: ATV operators may wear DOT helmets or approved bicycle helmets in lieu or hard hats while performing job duties such as lacing air or coupling cars. Hard hats shall be worn for overhead hazard activities such as welding, climbing under cars, or replacing brake shoes.

S-12.3 Motorcycle Use

Do not use motorcycles to perform your duties or to deadhead.

S-12.4 Utility Vehicles

Complete a Utility Vehicle Safety Training Course prior to operating a utility vehicle.

When operating a utility vehicle:
• Wear seat belts where provided.
• Ensure that the utility vehicle is modified to limit maximum speed to 15 mph or less.

S-12.5 Seat Belts

Wear seat belts while operating or riding in equipment or vehicles that are equipped with them.

Exception: Seatbelts are not required when employees are operating vehicles while performing train inspections or coupling air hoses. When operating the vehicle in travel to and from such work activities, seatbelts must be worn.
S-12.6 Passengers
Do not transport unauthorized persons in a company vehicle except in an emergency.
Notify the driver before boarding any vehicle. Never get on or off of a moving vehicle except in an emergency.

S-12.7 Maintenance/Inspections
Drivers assigned to vehicles and trailers, and their managers or foremen, are equally responsible for maintenance, cleanliness, and inspections to ensure that the equipment operates properly and safely and complies with federal motor carrier safety regulations.
Any defects found during inspections that might prevent the vehicle from operating safely must be corrected by a trained person before the vehicle is used. All other defects must be repaired as soon as possible.

S-12.8 Backing
Position the vehicle, when possible, to avoid backup movement.
Before backing, inspect areas to the rear to ensure that no persons or obstructions are in the path of movement.
When backing vehicles other than automobiles and pickup trucks:
• Position someone near the back of the vehicle to guide movement, when available.
• Sound the horn three short blasts in vehicles not equipped with backup alarms.
• Stop if the person guiding the movement disappears from view.

S-12.9 Parking
When parking vehicles:
• Place standard transmission in low gear with engine shut off.
• Place automatic transmission in Park.
• Remove the ignition key, close the windows, and lock the doors if leaving the parked vehicle unattended.

Exception: You may leave the engine of an unattended vehicle running, in cold weather, if you have a second set of keys.
• If parking on a grade, set the emergency brake and take other precautions to prevent the vehicle from rolling unexpectedly.

S-12.9.1 Fouling Tracks or Roadways
Except when necessary to perform duties, do not park vehicles or trailers where they foul tracks or roadways. If they do foul tracks or roadways, never leave them unattended without the proper protection.

S-12.10 Work Under Vehicles or Trailers
Do not sit or lie underneath vehicles or trailers, except when inspecting or repairing them, and then make sure the:
• Brakes are set.
• Wheels are blocked.
• Engine is stopped.
• Proper support stands are in place.
Do not sit or lie under a raised vehicle or trailer supported only by a jack.
S-12.11  Transporting Tools and Material

Properly secure tools, equipment, material, and freight. Do not transport hazardous materials, such as gasoline and solvents, in passenger compartments. Transport gasoline or other flammable material in a DOT-approved container. When transporting hazardous materials, follow federal and state placarding and shipping document regulations.

S-12.12  Special Equipment Mounted on Vehicles or Trailers

Only qualified personnel may operate special equipment, such as winches, cranes, and hoists, mounted on vehicles or trailers. When operating vehicles with special equipment:

- Inspect the equipment frequently.
- Do not exceed load limits.
- Make sure outriggers are in place.
- Secure the equipment in the proper position before moving the vehicle.
- Comply with the manufacturer’s instructions.

S-12.13  Trailers

S-12.13.1  Required Equipment

Trailers must be equipped with:

- Safety chains (except fifth-wheel or gooseneck trailers).
- Required stop, tail, directional, and clearance lights.
- Electrical connectors that are compatible in size and design with those on the designated towing vehicle.

S-12.13.2  Inspection

Before towing trailers, inspect equipment and material loaded on the trailer, and inspect the following to make sure they are operable:

- Tires.
- Brakes (if equipped).
- Hitches and locking devices.
- Safety chains (if equipped).
- Electrical connections and lights.

If the vehicle and trailer hitch are not compatible in size and design, or if locking devices are defective, do not tow the trailer.

S-12.14  Accidents/Incidents

Promptly report traffic incidents, accidents, and vehicle damage, no matter how minor, to the proper manager.

S-13.0  On or Near Tracks, Locomotives and Rail Cars

S-13.1  General Requirements

S-13.1.1  Going Between Cars or Locomotives Coupled to Locomotives

Going between or working on the end of rail equipment means an employee has placed all or part of his body where it could be struck by rail equipment if it were to move. Operating an uncoupling lever is not considered going between rail equipment.
Before crew members may go between or work on the end of rail equipment they must wait for movement to stop, slack to adjust, and ensure that all members of the crew have a clear understanding of the work to be performed. Unless another form of protection has been established, the following steps must be taken:

If a locomotive is not coupled to the rail equipment:
1. By radio or hand signal, notify all members of the crew who could affect movement in that track.
2. Crew members who could affect any movement of the equipment in that track must acknowledge that they understand a crew member will be going between or working on the end of rail equipment.

If a locomotive is coupled to the rail equipment:
1. Announce by radio “going between” or give the prescribed hand signal.
2. The crew member at the controls of the locomotive must fully apply the independent brakes, center the reverser, and then acknowledge by radio response “set and centered” if radio is being used or sound whistle signal “one long” if hand signals are being used. If no crew member is at the controls of the locomotive, another form of protection must be established.
3. The brakes must remain applied and the reverser centered until the crew member requesting protection gives a radio or hand signal to move or announces by radio “in the clear”.

Prescribed hand signals to indicate “going between”:
1. By day, give a stop signal. Raise arm farthest from the rail equipment straight above the head. Point the arm nearest the rail equipment at a 90-degree angle toward the rail equipment.
2. By night give a stop signal. With the arm extended forward parallel to the ground, move the light from left to right.

When stepping from between rail equipment, be alert for movement on adjacent tracks or vehicles moving on the walkway or roadway.

S-13.1.2 Signals
Do not give the signal to move locomotives, cars, or other equipment until persons and equipment are clear of the movement.

- Keep signaling devices in working order and ready for use.
- Position yourself so that your signal can be clearly seen.
- Stop all movement if you lose visual contact with the person giving the signal, unless radio communication is being used instead of hand signals.
- Regard any break in radio communication as a stop signal.
- Use the appropriate signal for what you are communicating and signal clearly.
- Make sure everyone understands other signals you may use.
Hand, Flag and Lantern Signals
The same signals apply for signals given by hand or flag.

SET AIR BRAKES:
Moved slowly with arm extended horizontally.

STOP:
Swung horizontally at right angle to the track.

GOING IN BETWEEN:
Arm raised straight up away from equipment. Arm at 90 degree angle pointing to equipment.

PROCEED:
Raised and lowered vertically.

RELEASE AIR BRAKES:
Held at arm’s length above the head.

BACK:
Swung in a circle at right angle to the track.

S-13.1.3 Tracks
A. Crossing Tracks

When crossing tracks:
- Do not cross within 25 feet of the end of standing equipment.
- Do not cross in front of approaching equipment, unless you are sufficiently ahead of the equipment to cross safely.

While within the limits of a designated mechanical facility, when crossing between standing equipment that is not under blue flag protection:

Employee may cross within 25 feet of standing equipment, provided:
1. Speed limits for all equipment on the track is 5 MPH or less, and;
2. Check for movement is made prior to crossing track, and;
3. Distance is sufficient to allow safe passage should there be unexpected movement, and;
4. Designated walkways are used, when available.
B. Stepping On Rails
Step over, not on:
- Rails.
- Frogs.
- Switches.
- Interlocking apparatus.
- Connections.

Watch for conditions that could interfere with footing.

C. Fouling Track
Do not walk between rails or foul the track, except when duties require and proper protection is provided. Use caution during bad weather and when visibility is impaired.

S-13.1.4 Sitting or Standing
Comply with these restrictions for sitting or standing on equipment or structures:
- Do not sit on rails or track structures unless duties require.
- Do not stand, sit, or walk on top of or on the sides of any open top car such as gondola, hopper, ballast, or air dump cars.
- Do not sit on the steps of moving engines or cabooses.
- Do not sit or lie underneath or lean against standing equipment unless duties require, and only when proper safeguards are provided, such as blue signal protection.
- Do not stand or sit on engine or caboose handrails.

S-13.1.5 Riding In or On Moving Equipment
Ride cars or equipment only if necessary and if you have determined that you can do so safely.

A. Determining Whether to Ride
If you are entering or working in an area with a limited side clearance and cannot clearly observe the track condition because of debris, snow, ice, water, grain, or mud, do not ride on the side of the car or engine exterior. Do not position yourself between or adjacent to the structure and a moving car or engine.

When determining whether cars or equipment can be safely ridden, consider the following:
- The different designs and configurations of the cars and equipment.
- Your physical characteristics and capabilities.
- The amount of slack in the train or switch cut.
- Applicable operating and safety rules.

When you have determined that it is safe and necessary to ride on cars or equipment:
1. Notify the engineer.
2. Proceed only after the engineer has acknowledged that you are going to ride.
3. Advise the engineer that the movement must be stopped short of making the coupling.
4. Complete the coupling from the ground after the movement is stopped.

B. Riding In or On Any Cars
Comply with these requirements and restrictions for riding in or on moving equipment:
- Do not ride on the crossover platform or end ladder of any car other than tank cars as specified in this rule.
- Do not ride on the brake platform, except to release or apply the hand brake during a gravity switch move.
- When riding equipment, maintain a three-point contact with the equipment at all times.
- Do not ride on any part of the coupler apparatus, center sill, side sill, end sill, or framework.
- Do not ride inside a car loaded with lumber, pipe, or other materials susceptible to shifting upon slight impact. When a flat car load of this type is involved, do not ride between the end of the adjacent car and the load.
- When riding in or on moving equipment, protect against slack action. When duties require you to stand or move about, brace yourself and hold on firmly.
- When moving from one car to another, get down and walk to next car and then get on, unless engaged in maintenance activities that require movement from car to car such as rail loading and unloading, rail grinding, car top material handling, or loading and unloading wheeled equipment from flatcars.
- Tank Cars: If so equipped, employees may ride on the outer portion of the crossover platform, positioned outside the nearest rail. When riding on a tank car crossover platform, face the direction of movement, and:
  1. When riding the trailing end, face the horizontal hand hold, maintaining three-point contact.
  2. When riding the leading end, with your back against the horizontal hand hold, loop your arm closest to the center of car around the horizontal hand hold.

C. Riding In or On Flat Cars

When any type of flat car is involved:

- Ride the side of the flat car only if the car is equipped with hand holds extending at least 18 inches above the deck of the car.
- Ride only if hand holds and stirrup configuration allow for a firm hand hold and erect and normal body position.

Ride on the deck of an empty flat car, or on a TOFC/COFC flat car with an empty stanchion or table, only if you can:

- Mount the car safely and kneel or sit as near as possible to the center of the car or the empty space.
- Face the direction of movement.
- Maintain a kneeling or sitting position before the equipment moves and until the equipment stops and the slack is adjusted.
- Do not walk or ride between trailers or containers loaded on flat cars.
- Do not place your hands or other parts of your body where trailers or bridge plates could move and cause injury when riding loaded TOFC/COFC flat cars.

D. Riding On Drop-End Gondolas

On a gondola equipped with drop ends, do not hold on to the end post, or sit or stand near the end door.

S-13.1.6 Opening and Closing Doors

Keep the front door of locomotives closed when speeds are greater than 15 mph, except during switching operations. If the door is open, secure it to prevent unexpected closure.

Open and close doors on engines, cabooses, and other equipment by using the appropriate handle. Do not grab the edge of the door.
S-13.1.8 Poling Cars
Do not use poles, ties, stakes, or other material to shove cars.

S-13.1.9 Chocking Cars
When chocking cars:
1. Wait until movement stops and the slack adjusts before placing the chock.
2. Place the chock while standing to the side of the equipment.
3. Keep fingers and hands clear of the wheel tread, top of the rail, and other pinch points.
4. Use only a sound wooden chock, metal chock or chock made from plastic or composite material designed for chocking cars. Do not use a track spike.
Do not chock moving rail equipment, except in an emergency, or when the equipment is in a repair facility.

S-13.1.11 Installing or Removing Marker
A. Protection
Before a crew member installs or removes a marker, protection must be provided as follows:
• Determine by communicating with the employee at the controls of the engine that the affected equipment will not be moved.
• Assure at least 50 feet of separation exists between the point of installation or removal and the nearest other standing equipment.
• If no engine is attached, determine by communicating with the employee who authorizes use of the track at that location that the equipment is secure against movement.
In addition, when more than one engine may be working at both ends of a track or tracks:
Determine by communicating with the employee in charge of crews that the equipment upon which the marker will be installed or removed is secure against movement and will not be coupled into by other equipment. Make this determination during job briefing immediately prior to the installation or removal of the marker.
If unable to communicate with the employee in charge of crews, determine by communicating with all other crews who may use the track that no movement will be made into the affected track during installation or removal of the marker.
For other marker installation or removal, ensure that you have blue signal protection as provided in S-24.2.

B. Installing and Removing
1. Inspect knuckle hole for foreign objects. For side-mounted rear end device, inspect the coupler webbing for foreign objects.
2. Slide the rear end device stand into the knuckle on end-mounted rear end devices, or slide the leg of side-mounted rear end devices into the web of the coupler.
3. Make sure end-mounted and side-mounted devices are properly mounted.
4. Connect the rear-end device air hose to the train line air hose and open the angle cock slowly.
5. Before removing end of train device, close the angle cock and press spring-loaded pressure relief valve (if available) before uncoupling glad hand.
After you have completed marker operation, you must advise affected employees.
S-13.2 Coupling/Uncoupling Rail Equipment

S-13.2.1 Standing Clear
Stand clear during a coupling movement.

S-13.2.2 Operating Uncoupling Lever
When operating the uncoupling lever:
- Use your hand nearest the equipment to operate the lever.
- Face the direction of movement.
- Do not jerk the uncoupling lever.
- Watch for pinch points.
- Place your hand on the portion of the uncoupling lever designed as the handle.
- Do not run while operating the uncoupling lever.
- Do not use your feet to operate the uncoupling lever.

S-13.2.3 Adjusting Lift Pin (Lock Block)
Do not insert your fingers through the hole at the bottom of the coupler to help raise the lock block to open the knuckle. Always use the uncoupling lever designed for this purpose.

S-13.2.4 Adjusting Mismatched Couplers
Do not adjust the coupler or knuckle of an approaching engine or car.

Do not attempt manual adjustment of couplers unless they move when you apply limited effort. If drawbar does not move with this limited effort, use an approved alignment device.

A. Adjusting Mismatched Couplers Without Using a Device
To adjust a mismatched coupler without using a device, follow this procedure:
1. Stop the movement.
2. Allow at least 50 feet of working room between the equipment and obtain positive confirmation of protection from train movement in all directions.
3. Wait for the movement to stop completely and for the slack to adjust and settle. (Be alert for unexpected movements from liquids sloshing in tank cars.)
4. Check for other equipment movements on the same track.
5. Adjust the coupler as follows:
   a. Establish good footing and hand holds to avoid stumbling, and keep fingers and hands clear of pinch points.
      Listen to what is going on around you. If you hear any equipment move, step clear immediately.
   b. Make sure the knuckle is secured. (Keep your feet clear of the area beneath the knuckle unless the knuckle is secured.)
   c. Stand to the side of the knuckle and lean against it. Do not lift.
      Do not adjust the coupler by kicking it with your foot.
5. Step clear of the equipment (without fouling the adjacent track), then signal the employee controlling the engine to proceed with the coupling.
B. Using a Lining Bar, Car Mover Pole, or Pinch Bar

When using other devices, such as a lining bar, car mover pole, or pinch bar to adjust a mismatched coupler, follow this procedure:

1. Allow at least 50 feet of working room between the equipment and obtain positive confirmation of protection from train movement in all directions.

2. Wait for the movement to stop completely and for the slack to adjust and settle. (Do not overlook unexpected movements from liquids sloshing in tank cars.)

3. Check for other equipment movements on the same track.

4. Establish good footing to prevent stumbling.

5. Make sure the knuckle is secured.

6. When the couplers are properly aligned, open at least one knuckle, stand clear of the equipment, and proceed with the coupling.

7. Return the device to its assigned location.

C. Using a Coupler Alignment Strap

When using a coupler alignment strap to adjust a mismatched coupler, follow this procedure:

1. If necessary, apply enough hand brakes to secure the standing cars.

2. Separate the mismatched couplers by at least 50 feet, and obtain positive confirmation of protection from train movement in all directions. Then close both knuckles.

3. Keeping one foot outside the rail, use the alignment strap as follows:
   a. Inspect the strap for defects or excessive wear.
   b. Place one end of the strap around the knuckle of the standing car.
   c. Place the other end of the strap on top of that same coupler.
   d. Stand clear of the equipment.

4. Move the engine (or cars) toward the standing car, then stop the movement within 3 feet of the standing car.

5. After the movement stops, keep one foot outside the rail, place the other end of the strap around the second knuckle, and stand clear of the equipment.

6. Slowly separate the equipment to remove slack from the strap, then align the couplers. Stop the movement immediately when the alignment is complete to avoid breaking the strap.

7. Stop and get help if you have difficulty attaching or using the alignment strap. Do not attempt manual alignment, even with more than one person. If the drawbar will not move using normal procedures, bad-order the car and notify mechanical personnel.

8. Move the equipment close enough to provide slack in the strap, then stop the movement.

9. Keeping one foot outside the rail, remove the strap as follows:
   a. Remove the strap from the knuckle.
   b. Separate the equipment at least 50 feet apart.
   c. Remove the strap from the other knuckle and open at least one knuckle.
   d. Stand clear of the equipment and continue coupling.

10. After aligning the drawbar, return the alignment strap to its assigned location and resume normal train movements.
D. Using a Knuckle-Mate

When using a knuckle-mate to adjust a mismatched coupler, follow this procedure:

1. Separate the mismatched couplers by at least 50 feet, and obtain positive confirmation of protection from train movement in all directions. Then close the knuckle of the coupler or couplers that need adjustment.

2. Place the knuckle-mate over the top of the knuckle, with the pin securely in the hole at the top of the knuckle. (Adjust the pin by loosening the top levered nut.)

3. Place both hands on the handle.

4. Pull the handle steadily, avoiding unexpected movements of the coupler that could cause you to be overbalanced and fall.

5. When the couplers are properly aligned:
   a. Remove the knuckle-mate.
   b. Open at least one knuckle.
   c. Stand clear of the equipment and continue coupling.

6. Return the knuckle-mate to its assigned location.

E. Using a Come-Along

1. Separate rolling equipment to at least 50 feet and obtain positive confirmation of protection from train movement in all directions.

2. Close the knuckle on the misaligned drawbar, and check for adequate lubrication by leaning on the coupler. If the coupler does not readily move, proceed with mechanically-assisted alignment.

3. Obtain come-along from storage location and visually inspect the chain and hook for excessive wear or damage. If wear or damage is determined as a result of this inspection, then contact the office responsible for come-alongs in that area for repair or replacement. Release the direction selector to the NEUTRAL position, and pull out enough chain to reach between attach points.

4. Inspect the alignment pin for defects such as worn spots, bent areas, or cracks. Do not use hardened steel pins or eye to reduce potential for injury when a hardened pin fails under load. Use a pin made of non-hardened steel so that it will bend rather than suddenly break if it fails under load. If no defects are found, insert the pin in the knuckle flag hole, and attach the come-along hook as described in the operating instructions provided with the come-along.

5. Secure a load-certified nylon choke to a rigid point of attachment near the corner of the car that is in the direction the drawbar to be moved. Select this attachment point to provide the best angular advantage for using the come-along. The best attachment point location is at or slightly above the level of the first attachment point. Attach the second come-along hook to the nylon choke.

6. Pull any excess chain through the come-along, and turn the direction selector knob to the desired position for tightening the chain. Using smooth motions, tighten the come-along until the drawbar moves to centerline. Stop if any difficulty is encountered in moving the drawbar with the come-along, or if the alignment pin or attachment point begins to bend. At this point, bad-order the car and notify mechanical personnel to address the problem. Do not attempt manual alignment. Do not extend the come-along handle in any way.

7. Reverse the come-along mechanism to loosen and remove hooks, pins, and nylon choke. Replace these items in the come-along storage and carrying bag, and return the bag to its storage area.
8. Make sure the knuckles remain locked closed when the aligned coupler is joined to the train. Resume normal switching movements.

F. Carry-Lite Drawbar Strap
When available, use the carry-lite drawbar strap to:

- Remove broken assemblies from between the rails.
- Align drawbars so a coupling can be made.
- Replace the “bull chain” as a means of allowing rail cars with broken coupler assemblies to be moved to locations where repairs can be made.

S-13.2.5 Replacing Knuckles
When replacing a coupler knuckle, unless other safeguards are provided, such as blue signal protection, follow this procedure:

1. Separate the equipment by at least 50 feet.
2. Make sure the equipment is stopped and secured.
3. Communicate with the engineer and other crew members to understand the work.
4. Make sure the knuckle pin is in place and open the knuckle while keeping feet clear of the area under the coupler.
5. Remove the pin and set it within easy reach.
6. Remove the knuckle from the coupler.
7. Dispose of the knuckle, holding it as close to the body as possible, where it will not become a tripping hazard.
8. Holding the uncoupling lever up, move the knuckle thrower back into the coupler recess as far as it will go.
9. Obtain the correct knuckle type.
10. Lift the knuckle carefully and place it into the coupler pocket.
11. Insert the knuckle pin into the pin hole, close the knuckle, and make sure it locks properly.

S-13.2.6 Opening Knuckles
When opening knuckles:

1. Do not place your leg or foot where the knuckle might fall on it. Do not stand in front of the cushioned drawbar to adjust or open the knuckle.
2. Check for broken or missing knuckle pins to prevent the knuckle from falling to the ground when it is opened.

If you remove the knuckle pin, replace it or provide a safeguard to prevent injury to others.

S-13.3 Air Hoses and Angle Cocks
Treat all angle cocks and air hoses as if they are under pressure.

S-13.3.1 Connecting Air Hoses
When connecting air hoses, keep one foot outside the rail whenever possible.
S-13.3.2 Opening Angle Cocks
When opening an angle cock:
1. Open the angle cock slowly, keeping legs and feet clear of the air hose coupling.
2. Listen for escaping air, which indicates a faulty coupling that could fly apart.
3. If you hear an air leak, close both angle cocks and make sure there is no pressure in the hoses before adjusting or repairing the leak.
4. Never kick, strike, or jostle pressurized hose couplings.
5. Before opening the angle cock to an uncoupled air hose:
   a. Grasp the hose at the glad hand clear of the vent port.
   b. Brace the glad hand firmly against your thigh just above the knee.
   c. Turn your face away from the glad hand before opening the angle cock.

S-13.3.3 Parting Hoses
To part air brake train line hose connections or locomotive control connections by hand, close the angle or cutout cocks and grasp the hoses firmly, turning your face away from the coupling.

S-13.3.4 Controlling Movement
Do not open the angle cock on the leading end of a moving car or engine to control or stop movement.

S-13.4 Crossing Over Rail Equipment
S-13.4.1 Crossing Through a Standing Train or Cut of Cars
- When crossing through a standing train or cut of cars, cross only through cars equipped with crossover platforms and hand holds.
- Be prepared for sudden movement and maintain a firm grip.
- When no car is within sight distance with a continuous hand hold for crossing, you may cross over empty intermodal cars or ends of intermodal cars with an empty stanchion. Before crossing over, obtain positive confirmation that the car will not be moved and that the platform is sufficiently wide to allow walking across it in a safe manner.

S-13.4.2 Climbing Through Standing Coupled Cars
When climbing through standing coupled cars:
- Do not step on the coupler or uncoupling lever.
- Do not place hands, feet, or other parts of the body on the sliding sill or between the coupler horn and end sill of the car.

S-13.4.3 Crossing Underneath Couplers or Standing Cars
Cross under couplers or underneath standing cars or trains only if you are making repairs and when proper safeguards, such as blue signal protection, are provided.

S-13.4.4 Climbing Over Couplers or Under Moving Cars
Do not climb over couplers of moving cars or underneath moving cars. When you must cross over moving equipment, use locomotive or caboose steps.

S-13.5 Getting On or Off Equipment
Do not get on or off moving equipment, except in an emergency to avoid injury.
S-13.5.1 Getting On Moving Equipment

In an emergency, when it is necessary to get on moving equipment:

1. Face the equipment as it approaches and make sure:
   a. The speed will allow you to get on the equipment safely.
   b. Stirrups, hand holds, or handrails are not bent, loose, or missing.
   c. Switch stands, close clearances, signals, and other items do not prevent you from getting on safely.

2. Always mount equipment from the side, using the sill step and side ladder (where equipped). Do not use the uncoupling lever as a step.

3. Get on an approaching locomotive or box-type car as follows:
   a. Firmly grasp the handrail or ladder rung.
   b. Place your trailing foot on the trailing side of the step or stirrup.
   c. Let the movement lift you off the ground, and then place your leading foot on the step or stirrup.

4. Do not get on a moving tank car. Make sure a conventional flat car or a TOFC/COFC car is stopped before getting on or off it.

5. To get on moving coupled equipment, board the leading or approaching end of the car or locomotive if possible. Get on or off a moving caboose at the rear steps.

S-13.5.2 Getting Off Equipment

A. Standing Equipment

When getting off standing equipment:

- Face the equipment.
- Before getting off, determine that no obstructions or debris are where your feet will land. Be alert for switch stands, close clearances, uneven footing, signals, and other items that could prevent you from getting off safely.
- When getting off a caboose, walk down the steps, turn at the bottom step and face the car, then get off.
- Except in an emergency, do not jump to the ground from rail car and engine ladders, step platforms, or decks.

B. Moving Equipment

In an emergency, when it is necessary to get off moving equipment:

- Face the direction the equipment is moving.
- Get off with the trailing foot first to direct you away from the equipment.
- When getting off a caboose, walk down the steps, turn at the bottom step and face the car, then get off.
- Avoid jumping to the ground from a rail car or an engine ladder, step platform, or deck.

S-13.5.3 Getting On and Off Full Car Body Locomotives

On locomotives that have a vertical side ladder access to the cab and are equipped with cab doors located on the sides of the cab, use the corner step well cab access to enter and exit the locomotive cab and car body areas in all cases except:

- Emergency exit from the locomotive.
• Entrance and exit from the locomotive while it is located at a service facility that has a raised ramp surface so that no more than one ladder tread must be used when entering or exiting the car or car body of the locomotive.

• Units that are accessible only by ladder.

Where other units are available, do not use a full car body locomotive as the lead locomotive.

S-13.5.4 Using Ladders
When using a ladder to get on and off equipment:

• Use the side ladder, not the end ladder.

• Climb up and down the ladder by turning your feet at an angle and placing the ball of your foot on the ladder rung.

S-13.5.5 Loading and Unloading Luggage
Do not throw or "swing" luggage onto a locomotive from the ground.

Load or unload luggage, grips without straps, ice chests, and other objects onto locomotives and cabooses before you get on or off. In doing so:

• Wait for a co-worker to safely board and get securely positioned on the deck or platform.

• Secure the item to be loaded against shifting or separating.

• Get a firm footing and use proper body mechanics/lifting techniques to pass the item to your co-worker.

Board or detrain carrying grips with shoulder straps by resting the strap on your shoulder and maintaining both three-point contact and your balance.

S-13.5.6 Carrying Lanterns
When carrying a lantern while riding on equipment, hold the lantern handle in the crook of your hand, between the base of your thumb and index finger.

S-13.6 Operating Hand Brakes
S-13.6.1 Hand Brake Categories
The three categories of hand brakes include:

• Vertical wheel (high- and low-mounted).

• Lever (ratchet).

• Horizontal wheel (staff).

When operating hand brakes, determine:

• Brake location (end- or side-mounted).

• Brake position (high or low, right side or left).

• Method of operation.

S-13.6.2 Hand Brakes on Moving Cars
Except in an emergency or if making gravity switch moves, do not operate hand brakes on moving cars.
S-13.6.3 Position to Operate

A. End-Mounted with Brake Steps or Crossover Platform

If the car has end-mounted brakes and a brake step or crossover platform:

1. Stand on the brake step or crossover platform to operate hand brakes.
2. Apply hand brakes by standing on the left side of the brake with your left foot on the ladder rung and your right foot on the brake platform.
3. Grasp the ladder rung or top handhold with your left hand and operate the brake with your right hand.

B. Side-Mounted

Operate side-mounted hand brakes from the ground if the brake mechanism is within easy reach and you can safely operate it without straining too much and risking injury.

C. End-Mounted Without Brake Steps or Crossover Platform

If the car has end-mounted hand brakes without brake steps or crossover platforms:

- Do not operate the hand brakes from the ground unless proper safeguards are provided, such as blue signal protection.
- To operate the hand brakes, stand on the car or on the ground at the side of the car.

D. Horizontal Wheel or End-Mounted, Inward Facing

Stand on the car to operate horizontal wheel (staff) hand brakes and end-mounted, inward facing hand brakes.

E. Vertical wheel hand brakes may be operated without getting on the railcar if:

1. The car remains stationary.
2. Both feet remain flat on the ground and outside the rail.
3. Elbows are slightly bent during operation.
4. One hand can hold onto the grab iron while the other hand is used to operate the brake wheel.

S-13.6.4 Use of Feet

When operating hand brakes:

- Do not use your feet to operate the hand brake, except to manipulate the pawl on horizontal wheel (staff) brakes.
- Do not place your feet on any movable part of the car, such as the uncoupling lever or sliding sill.

S-13.6.5 Movement from Side to End Ladder

When necessary to move from the side ladder to the end ladder to operate the hand brake, be alert and hold on to the ladder firmly.

S-13.6.6 Vertical Wheel

To apply a vertical wheel brake:

1. Place the release lever or pawl (if so equipped) in the ON position by reaching behind the brake wheel, not through the wheel spokes.
2. Turn the brake wheel clockwise to take up slack in the brake chain.
3. Watch for the brake chain to bunch or slip unexpectedly.
4. After the chain slack has been taken up, apply pressure to the brake wheel by turning it clockwise, using short, steady pulls without jerking.
5. To release hand brakes equipped with a release lever, rotate the lever clockwise to the OFF position, pushing firmly until the brake releases. If the quick release lever does not release the brake, operate the wheel with steady pressure. If the wheel does not easily release the brake, apply air to the car or get help. If the brakes still do not operate, bad-order the car.

With some older hand brakes, the brake wheel will spin when the brake releases. Keep fingers and hands clear.

6. To release hand brakes not equipped with a release lever (gradual release type), grip the wheel rim and turn the wheel counterclockwise until the brake releases.

S-13.6.7 Lever or Ratchet Brake
To operate a lever or ratchet brake:

1. Apply the brake by placing the release lever or pawl in the ON position and pumping the brake lever. (On some styles, the release lever is automatically placed in the ON position when you pump the brake lever.)

2. After the chain slack has been taken up, apply steady pressure on the lever as necessary, but do not jerk it.

3. Operate low-mount lever brakes on standing cars with your left side nearest to the car, where possible. (These brakes are mounted to the frame of the car at or below the deck level.)

4. Before releasing lever brakes, inspect the lever stop on the housing. Do not operate the brake if:
   a. The stop is excessively worn or missing.
   or
   b. The mechanism allows the lever to bypass its normal stop position.

   If operated under these circumstances, the brake lever could fly around forcefully when the brake is released.

5. Release the hand brake by rotating the release lever clockwise, pushing firmly until the brake releases.

S-13.6.8 Horizontal Wheel or Staff Brake
To operate the horizontal wheel or staff brake:

1. Make sure the brake wheel and shaft are fully raised and locked. (Some brakes have a drop-shaft movement, allowing the brake wheel to lower to the car floor.)

2. If the wheel and staff are in the lowered position, use both hands and lift the brake wheel until the shaft support moves into place under the end of the shaft and locks the wheel shaft in the raised position.

3. Apply the brake as follows:
   a. If the hand brake has a pawl, engage the pawl in the ratchet with your foot.
   b. Grasp the brake wheel rim with both hands, keeping your thumbs on the outside of the wheel.
   c. Turn the wheel clockwise until enough force is applied. Do not jerk the brake wheel, but apply steady pressure, keeping alert in case the chain bunches or slips.

4. Release the brake as follows:
   a. If the brake staff has a pawl, using both hands, turn the brake wheel clockwise enough to release the pawl with your foot.
   b. Release your grip on the wheel.
   c. As the brake wheel spins counterclockwise, keep your hands, body, and clothing clear.
   d. If the brake staff does not have a pawl, turn the wheel counterclockwise until the brake releases.
5. If necessary, lower the hand brake wheel shaft as follows:
   a. Make sure the car will not be moved, and step (on the ground) around the end of the car.
   b. Lift the hand brake shaft with one hand, enough to take the weight of the shaft off the shaft support.
   c. While holding the brake wheel shaft in the above position with one hand, use the other hand to move the shaft support from under the end of the shaft.
   d. Using both hands, slowly lower the brake wheel, being careful to avoid pinch points.

S-13.7 Operating Switches and Derailed
Only authorized and trained individuals may operate switches or derailed.

S-13.7.1 Checking for Damage and Obstructions
A. General Requirements
Switches have different operating characteristics that could change because of weather, temperature, and maintenance. Before attempting to operate a switch:
1. Stop the car, locomotive, or other on-track equipment at least 50 feet from the switch stand to be lined, when possible.
2. Look in both directions and watch for moving equipment on adjacent tracks.
3. Visually inspect the switch to make sure it is not damaged, locked, or spiked.
4. Verify that switch points are not fouled by ballast, ice, snow, or other material.
5. Remove foreign material from between the switch point and stock rail using a broom, stick, or similar object. Do not use your hand or foot. When handling a switch or derail, keep hands and feet clear to avoid being struck or caught by the switch lever handle. Do not strain your body and risk physical injury.

B. Defective Switches
Remove from service immediately any switch that is defective, hard to throw, or in need of maintenance, until it can be inspected and repaired.
Label the defective switch as follows:
1. Identify the switch's exact location and problem and report them to the dispatcher or proper authority.
2. Attach an out-of-service tag to the switch.
3. Do not use the switch until it has been inspected, repaired, and the out-of-service tag removed.

S-13.7.2 Operating Ground Throw or “Flop Over” Switch
To operate a ground throw or “flop over” switch:
1. Face the switch squarely, standing firmly. Watch for conditions that may interfere with footing.
2. Release the foot latch, if equipped. Use two hands when operating the switch.
   Be alert for a switch under compression that could fly up when released from the latch or keeper.
3. Bring the lever to the straight-up position using good lifting practices.
4. Shift your position so that your body is over the lever on its downward movement.

5. Push the lever handle to the latched position as follows:
   a. Use slow, even pressure.
   b. Do not jerk or use unnecessary force.
   c. Keep hands and legs firmly braced and clear of the operating lever.
   d. Be prepared for the lever to suddenly operate easily or stiffly.
   e. One foot may be used to finish the last few inches of handle movement on “submarine” switches. One foot must remain on the ground for balance when using this method.

6. Make sure the switch is latched.

**S-13.7.3 Operating High Stand Switch**

To operate a high stand switch:

1. Establish a firm stance and watch for conditions that could interfere with footing.

2. Lift up on the switch handle, keeping your body clear of the handle movement.
   Be alert for a handle under compression to swing around when released from the keeper slot.

3. Slowly pull the handle through its line of travel as follows:
   a. Keep your hands and feet firmly braced. Reposition your feet as needed to avoid a twisted or awkward body position. Use leg muscles, not back muscles.
   b. Be prepared for the switch to suddenly operate easily or stiffly.
   c. Do not jerk the handle or use unnecessary force.

4. Fully seat the handle in the keeper slot when the switch is in the desired position. Do not use your feet to operate the switch or secure the handle.

**S-13.7.4 Operating Switch Point Locks**

When working with switches equipped with switch point locks (so designated by yellow handles):

1. Know the difference between the two basic types of switch point locks.

2. Remove the padlock from the switch point lock.

3. Use your foot only to depress the pedal, which places both types of lock under spring tension.

4. Snap the switch point lock into locking position by returning the switch to the normal position. Inspect to assure the locking position before putting your hands near the switch point lock to replace the padlock. If the switch point lock fails to snap into locking position, reopen the switch and repeat the process.

5. Do not attempt to pull up the pedal by hand or other means. Contact the train dispatcher and report the switch point lock defective. Tag out the switch.

Repair or correct defective switch point locks only if you are a qualified Maintenance of Way employee.

**S-13.7.5 Switch Heaters**

When working around burning switch heaters:

- Avoid contact with heaters or switch rails.
S-13.8 Fusees and Torpedoes

S-13.8.1 Storing Fusees and Torpedoes

Store fusees and torpedoes as follows:

- Store them in approved metal containers in motor vehicles and other designated equipment.
- Store them in flagging kits or racks in engines and cabooses.
- Do not leave them on floors, seats, or walkways.
- Keep them away from high temperatures, open flames, combustibles, and locations where they may become wet.
- Store them, when possible, in a locked compartment not intended for passenger occupancy where unauthorized persons cannot obtain them.
- At fixed facilities, keep fusees and torpedoes in original shipping containers, and store in a flammable storage cabinet meeting NFPA standards. Do not store other flammable or nonflammable material in the same cabinet. Store the minimum amount needed, but no more than a 60-day supply.

S-13.8.2 Disposing of Damaged Fusees and Torpedoes

Do not use fusees and torpedoes that have been soaked in water, oil, or otherwise damaged. Dispose of them appropriately.

S-13.8.4 Lighting and Handling a Burning Fusee

To light and handle a burning fusee:

1. Grasp the fusee near its base.
2. Remove the plastic top or pull the tape over the top to expose the scratch surface on the end of the cap.
3. Twist the cap off the fusee head.

When igniting a fusee, turn your face away and expect hot sparks to spray in all directions.

4. Hold the fusee in one hand and the cap with the exposed scratch surface in the other.
5. Strike the igniter button on the fusee against the scratch surface of the cap, while holding the cap still. Strike away from the body.
6. If you will drop the fusee from a moving train:
   a. After the fusee ignites, continue to hold it at arm’s length with the burning end away from your body for at least 5 seconds, but no more than 10 seconds.
   b. Be careful to prevent the hot, melting slag from falling on you if you hold the fusee for longer than 5 seconds.
   c. Do not drop the fusee too soon, or the igniter may go out and the fusee will not remain lighted.

S-13.8.5 Placing Fusees and Torpedoes

A. Fusees

Do not place a fusee where the fire may spread to:

- Platforms.
- Bridges.
- Buildings.
- Combustible surfaces of road crossings.

Be careful when placing a fusee near trees, brush, or grass along the right-of-way.

B. Torpedoes

Do not use torpedoes near station buildings or road crossings. Do not use them on other than main tracks or sidings.

S-13.8.6 Giving Signals with Fusees

When giving hand signals with the fusee:

- Point the burning end down and away from yourself and others.
- Never hold the fusee near the flame.
- Avoid breathing the vapors and gases produced by the burning fusee.
- Do not look directly at the flame.

S-13.8.7 Extinguishing Fusees

To extinguish the fusee before it burns out, use one of the following methods:

- Gently strike the burning end over the edge of a rail or over a heavy metal object.
- Strike three or four times to separate the burning compound from the rest of the fusee.
- Bury the burning end in sand or dirt.

Do not touch the burning melting material on the fusee.

S-14.0 On-Track Machines and Vehicles

(Includes motor cars, push cars, and hy-rail vehicles.)

S-14.1 Riding On Machines

Ride on machines only if you are the machine operator or are authorized by the manager in charge.

When riding on an on-track machine:

- Notify the machine operator before boarding.
- Sit where operator indicates, or, if directed to stand, hold on firmly at all times and maintain three points of contact.
- Watch for obstructions, approaching trains, and vehicle traffic at road crossings giving the right-of-way to all vehicle traffic. Inform the operator of hazards.
- Do not operate on-track equipment when a train is passing on an adjacent track, if the equipment will foul the adjacent track.
- Do not work between the adjacent tracks while a train is passing.

Do not ride on a flat car loaded with machines while the car is being moved in the train. Operators may ride in a crane cab when duties require.

S-14.1.1 Warning Devices

When operating on-track machines:

1. Sound whistles, horns, or other warning devices to alert others of approaching trains.
2. Do not rely on others to warn you of moving equipment, except where designated lookouts are provided.
S-14.2 Working On or About Equipment and Machines
Operate equipment only if you are authorized and trained. Operators are responsible for machine safety and machine maintenance.

When working on or about equipment and machines:
- Read and understand the machine's operating manual before using the equipment.
- Use lockout/tagout procedures.
- Lower all suspended loads and attachments before leaving the machine.
- Do not sit or lie underneath a machine, except when inspecting or repairing it.
- Do not overload equipment.
- Be aware of power lines overhead and underground.
- Secure unattended equipment from movement and theft.

Never place yourself under a raised machine supported only by a jack.

S-14.3 Moving Cars and Work Equipment on Repair or Service Track
- Establish blue signal protection.
- Give proper warning signal before moving.
- Make sure all personnel are clear of movement.
- Refer to local practices for car and work equipment movement.

S-14.5 Hearing Protection
Wear approved hearing protection when operating or working within 20 feet of machines with hearing protection warning labels or decals, and other machines covered in special instructions.

S-14.8 Operating Track Equipment Indoors
Do not operate track equipment indoors unless exhaust is directly discharged outdoors via ducting.

S-15.0 Oxygen and Fuel Gas

S-15.1 Storing Gas Cylinders
Follow these requirements for storing gas cylinders:
1. Store oxygen, acetylene, and fuel gas cylinders with the valve end up.
2. When oxygen, acetylene, and fuel gas cylinders are not in use or when they are empty, close their valves tightly and put the protective cap in place.
3. Secure gas cylinders to protect them from damage.
4. Store gas cylinders in a well-ventilated area away from elevators, stairs, and gangways.
5. Separate oxygen cylinders from acetylene and other fuel gas cylinders as follows:
   - Separate them by at least 20 feet.
   - or
   - Separate them with a noncombustible barrier at least 5 feet high with a fire resistance rating of at least a 1/2 hour.
Exception: This does not apply to cylinders in use or ready for immediate use. Secure these cylinders in suitable racks or cabinets on trucks or in fixed locations.

6. Store oxygen cylinders at least 20 feet away from flammable material, especially oil, grease, paint, or any substance that could cause or intensify a fire. Do not store, use in, or convey oxygen through a paint shop or any paint storehouse.

7. Do not store gas cylinders near heat sources such as furnaces or boilers. In locations with extreme temperatures, screen gas cylinders stored outdoors from the sun.

8. Store empty and full gas cylinders separately. Mark empty cylinders as EMPTY or MT.

S-15.2 Testing for and Handling Leaks

S-15.2.1 Testing for Leaks

When testing for leaks, use soapy water with a nonfat base. Do not use an open flame.

S-15.2.2 Handling Leaks

If a welding gas cylinder is leaking:
1. Remove the cylinder to an open area away from possible ignition sources.
2. Allow the cylinder to drain completely.
3. Close the valve.
4. Tag the cylinder indicating the defect.
5. Return the cylinder to the supplier.

S-15.3 Mixing Gases

Do not mix gases in a cylinder or refill a cylinder.

S-15.4 Handling and Transporting Gas Cylinders

When handling or transporting gas cylinders:
1. Do not handle oxygen cylinders with oily or greasy hands or gloves.
2. Securely chain or clamp gas cylinders with valve ends up.
3. Valve protection caps, where cylinder is designed to accept a cap, shall always be in place, hand-tight, except when cylinders are in use or connected for use.
4. Do not remove or change numbers or marks stamped on gas cylinders.
5. Gas cylinders may be difficult to carry by hand because of their shape, smooth surface, and weight. Gas cylinders may be rolled on their bottom edge but never dragged.
6. Follow these lifting restrictions:
   a. Do not lift a compressed gas cylinder with an electromagnet.
   b. Do not lift a gas cylinder by its valve cap.
   c. When using a crane or derrick to lift a gas cylinder, secure it to the crane hook with a cylinder sling or place it in a cradle or suitable platform.
7. Contact the gas supplier when you are unsure how to properly handle a compressed gas cylinder or its contents.

When transporting compressed gas cylinders in a company vehicle on other than BNSF property:
1. Secure cylinders tightly with a chain, strap or equivalent device, and close cylinder valve.
2. Always secure cylinders in a closed compartment when available. Cylinders must not be placed or transported in a passenger-carrying compartment.
S-15.5  **Changing Gas Cylinders**  
Before changing or disconnecting a gas cylinder, close the cylinder valve and individually drain hoses to remove any gas mixture. Do not open a cylinder valve unless the cylinder is secured.

S-16.0  **Power Tools and Machinery**

S-16.1  **Authorized Employees**  
Operate power tools and machinery only if you are authorized to do so.

S-16.2  **Inspection and Use**  
Inspect tools and equipment for defects before and during use, repairing or removing from service those that fail inspection. Promptly tag and report to your supervisor or person in charge any defect. If necessary, guard the hazard.

S-16.3  **Insulation/Grounding**  
Frequently inspect the power cord insulation and connections on electric power tools, and maintain them to prevent shorts and faults. Unless the power tool is double-insulated, make sure it has three conductor cords, one of which grounds the tool frame when connected to an adequate ground. Do not remove the grounding prong from the plug.

S-16.4  **Power Source**  
Disconnect the power source before cleaning, repairing, adjusting, or replacing accessories on electric and pneumatic power tools. Where required, follow lockout/tagout procedures.  
*Exception:* Spring-loaded quick-disconnect sockets are exempt.

S-16.5  **Storage/Handling of Abrasive Disks and Wheels**  
Store abrasive disks and wheels in a dry area protected from extreme temperature changes, especially in below-freezing temperatures. Handle abrasive stones carefully to prevent dropping or bumping them. Always inspect disks prior to use.

S-16.6  **Floor Area/Aisles**  
Keep the floor area around shop machinery free from holes and irregularities. Designate aisles with railings, safety chains, paint, or other markings.

S-16.7  **Safety Guards**  
Do not operate power tools, machinery, or appliances without required safety guards on belts, shafts, gears, and other moving parts.

S-16.8  **Gloves**  
Do not wear gloves while operating tools or machinery if the gloves could be caught by moving parts or rotating stock.

S-16.9  **Pneumatic Tool Use**

S-16.9.1  **Air Valve**  
Close the air valve at the supply source and relieve the line pressure on pneumatic tools that will not be used for a long time.
S-16.9.2 Hose Connections
Make sure air hose connections are secure. Unless the connections are equipped with quick disconnects, do the following before uncoupling them:

- Close the air valve.
- Relieve the line pressure.
- Use whip stops.

Do not use wire in air or hydraulic couplings in place of clip pins. Do not use hoses on hydraulic or pneumatic tools for hoisting or lowering.

S-16.9.3 Spindle Speed
Regularly check pneumatic grinding tools for proper spindle speed, especially if the tools have been dropped.

S-16.10 Set Screws
Use safety set screws in all revolving spindles or shafts unless a collar protects them. Make sure all set screws or keys are flush or countersunk. Do not use nails or wire to hold the sockets in place.

S-16.11 Laying Tools Down
Stop the motor before laying down pneumatic, electric, or other power tools. Place the tool so it will not start accidentally.

S-16.12 Surfaces
Do not place electric power tools on wet surfaces or in loose dirt.

S-16.13 Falling Tools
If a tool or other object falls to the bed of a machine, stop the machine before removing the tool.

S-16.16 Chain Saw Use
Operate a chain saw only if you are authorized to do so. Inspect the saw before using it to ensure that:

- The handles and guards are in place and tight.
- The controls function properly.
- The muffler is operating properly.
- The cutting chain is properly adjusted.
- The bar is not worn or burnt, especially at the tip.

Before starting the saw:
- Alert others of flying debris.
- Inspect for conditions that could interfere with your footing and safe operation.
- Clear away brush.

When using the saw:
- Do not use the saw to cut directly overhead or far enough away that you cannot safely grip the saw.
- Avoid contact between the saw tip and objects that could cause the saw to kick upward.
S-16.17 Lockout/Tagout of Machinery
When machinery is being repaired, cleaned, or adjusted, ensure that the control switch or power source is locked in the OFF position and tagged. The employee working with the machine must keep the key.

S-16.18 Grinding Machine Use
Use the grinder only for tasks for which it was designed.

S-16.18.1 Inspecting Grinding Wheels
Inspect grinding wheels as follows:
- Inspect each wheel immediately after unpacking it from the shipping container and again just before mounting it on the grinder.
- Ring-test each wheel and inspect it for surface cracks, chips, or other defects, before mounting grinding wheels.
- Make sure protective guards are in place, secured, and properly aligned. Make sure the tool rest and tongue guard adjustment is not more than 1/8 inch from the wheel.
- Make sure the frame is securely mounted with no vibrations, and the wheel face is well-lighted and dressed evenly. The grinder RPM must be plainly labeled and not exceed the RPM rating of the wheel.
- Make sure a competent employee dresses and trues the wheels.

S-16.18.2 Mounting Grinding Wheels
When mounting grinding wheels, make sure:
- The wheel is the appropriate type and size for the machine on which it will be used.
- The wheel fits freely on the spindle and remains free under all grinding conditions.
- The contact surfaces of wheels, blotters, and flanges are flat and free of foreign matter.
- The blotters or flange facings of compressible material cover the entire contact area of the wheel flanges.
- The spindle and nut are tightened enough to drive the wheel and prevent slipping.
- The flanges are equal in size and are the correct diameter for at least 1/3 of the wheel diameter. For cut-off wheels, flanges will be at least 1/4 of the wheel diameter.

S-16.18.3 Operating Grinding Wheels
When operating grinding wheels:
- Run new wheels at full operating speed for at least 1 minute before applying work. (Most defective wheels break when first started.) During this time, do not stand in the direct line of the rotating wheel.
- Operate wheels at the manufacturer’s recommended speed.
- Do not drop, bump, roll, or handle grinding wheels carelessly.
- Protect grinding wheels from oil, grease, water, or other liquids, and from freezing temperatures or conditions that cause surface condensation.
- Do not perform grinding operations on the sides of wheels, except on wheels designed for side-face grinding.
- Do not grind nonferrous materials on wheels not specified for that purpose.
- When the wheel is cold, apply grinding force gradually and evenly to prevent thermal shock, which could break the wheel. Avoid forcing it and causing glazing or breakage.
S-16.18.4 Operating Portable Grinders

When operating a portable grinder:

- Be careful to avoid damaging the abrasive wheel.
- Do not leave or lay the portable grinder down while it is running.
- Use a protective shield or screen to protect others from sparks and flying debris.

S-16.19 Wire Brush Wheels

When using wire brush wheels:

- Follow the manufacturer’s recommended wheel speed.
- Make sure the hood is adjustable and encloses the wheel as completely as the work allows. The hood should cover the exposed arbor ends. If not, install a smooth-headed nut.
- Do not use wire brush wheels to remove ACM from surfaces, such as gaskets.

S-16.20 Band Saws

When using a band saw:

- Make sure the length of blade exposed is no longer than the thickness of the stock being cut plus 3/8 inch.
- Feed the stock gradually and steadily.
- Make sure the blade is not twisted or crowded.

S-16.21 Other Metal or Woodworking Machines

When using other metal or woodworking machines:

- When installing the machine, place its front end slightly higher than its rear to cause the cutting head to return gently to the starting position when the operator releases it.
- Stand to one side and not directly in back of the material being fed for saws where kickback is possible.
- Use a push block to feed narrow material through a circular or band saw.
- Do not reach over a circular saw.
- Do not operate circular rip saws with missing or broken hoods, spreaders, or kickback devices.
- Provide an adjustable stop to prevent the blade from traveling beyond the point necessary to complete the cut in repetitive operations.
- Do not join short pieces of stock. The length of the pieces joined should be at least four times the width of the bed opening.
- Do not adjust either half of the joiner table horizontally to make the clearance between the edge of the table and the revolving knife more than 1/8 inch.
- Do not lower dead plates on planers while material is in the machine and the machine is running.
- Use hold-downs/push blocks whenever joining stock that is narrower than 3 inches.

S-16.22 Clean Up

S-16.22.1 Removing Chips

Do not use your hands to remove chips or shavings from a drill press or other machine. Use a brush, vacuum equipment, or special tools designed for that purpose.
S-16.22.2 Use of Compressed Air/Gas

1. When cleaning equipment, use an air nozzle that meets OSHA requirements—less than 30 psi with effective chip guarding.

2. Do not use compressed air, oxygen or other pressurized gas to:
   - Clean equipment where lead, silica-containing dust or asbestos may have accumulated.
   - Blow dust or dirt from your body or clothing. Do not place the air nozzle against your body or purposely inhale compressed gas.
   - Clean shop areas.

S-16.23 On/Off Switch

Protect on/off switches to prevent the machine or equipment from being unintentionally energized.

S-17.0 Rigging, Cranes, and Hoists

Observe the manufacturer’s instructions for operation and maintenance of cranes. Be familiar with safe hoisting capacities and do not exceed the load chart ratings.

S-17.1 Rigging

When rigging for an overhead lift, make sure that all slings, wire ropes, and other hardware are approved by the manufacturer for overhead lifting. If you are the rigger, you must verify that the Working Load Limit (WLL) of each component involved in a lift is equal to or greater than the stress it will be subjected to during the lift. When determining sling capacity, consider that the stress on a sling varies with the angle of its legs.

Store slings in a clean, dry place. Store synthetic slings away from direct sunlight.

Cable clamps are not recommended for overhead lifting. When such use is necessary, use only new clamps applied and torqued to the proper specifications. Check the cable clamp torque regularly to ensure that vibration does not loosen the clamps.

S-17.1.1 Inspection Requirements

Inspect all new or repaired ropes, slings, and other rigging hardware upon initial receipt, daily before use, and whenever you suspect damage.

S-17.1.2 Identification Tags

All slings must have a durable identification tag that states the following:

All slings:
- Manufacturer’s name
- Working Load Limit (WLL)

Cable and chain slings:
- Size

Chain slings:
- Serial number
- Grade
- Reach
S-17.3 Rigging a Load
When securing a load:
- Do not wrap the hoist cable around the load.
- Never attach a hoisting equipment hook directly to an object being lifted unless the object has a permanent lifting eye or similar attachment device designed for overhead lifting; use a sling or other certified overhead lifting device.
- Protect the sling or lifting device from chafing or cutting.
- Make sure the load is securely hooked and well-balanced.
- Make sure the load is always properly set in the bowl of the hook. Loading on or toward the point (except in the case of grab hooks or other hooks designed for such loading) overloads the hook and causes the hook to spread and possibly fail.
- When freeing a sling, make sure the load has settled before unhooking the sling. Stand clear to avoid being struck by the sling or load.

S-17.4 Chain Slings
Chain slings used for overhead lifting must be constructed of Grade 8 alloy steel.
- Never splice or shorten a chain by inserting a bolt between links.
- Never load a kinked chain. When applying a load, take up slack slowly and see that every link in the chain seats properly.
- Use chain attachments (rings, shackles, couplings, and end links) designed for the chain to which they are fastened.

S-17.5 Below-the-Hook Lifting Devices
Use only below-the-hook lifting devices that are certified by a qualified individual or manufacturer. Certified below-the-hook lifting devices will have a permanent nameplate or marking stating the following information:
- Manufacturer’s name
- Serial number
- Lifter weight (if over 100 lbs.)
- Rated load (capacity)
Modify or re-rate below-the-hook lifting devices only with written permission from the manufacturer. Repair below-the-hook lifting devices only if you are qualified or are under the direction of a qualified person.

S-17.2 Cranes and Hoists
S-17.2.1 Requirements
If you are the operator and you are leaving the crane, ensure that the:
- Master clutch is off.
- Machine brakes are set.
- Load is lowered to the ground.
If crane is rail-mounted, set the hand brake and ensure that at least one wheel is chocked or “skated.”
Complete the “Work Equipment Crane Operation” class before operating a movable counterweight crane.
Operators must document monthly inspection of cranes, repairing or removing from service those that fail inspection.

A log book, operator’s manual, and service manual must be readily accessible in the cab of cranes at all times.

**S-17.2.2 Lifting**

When lifting:

- Ensure that a designated employee will direct movement and give signals. This employee must determine that all personnel are in safe positions before hoisting begins.
- The operator must stay at the controls when a load is suspended.
- Return cranes and hoists to neutral and secure positions when not in use.
- When lifting heavy loads, test the brakes when the load is suspended a few inches above the floor or ground.

**S-17.2.3 Outriggers**

Comply with manufacturer’s requirements for deployment of crane outriggers unless a written exception has been issued by the manufacturer to BNSF. Manufacturer’s requirements can be found in the operator’s manual and/or on the load chart(s) that are required to be on the crane at all times.

**S-17.2.4 Fouling Track**

Provide adequate protection for a machine, boom, or load before allowing it to foul a track.

**S-17.2.5 Power Line Clearance**

Maintain mandatory minimum clearances, as shown in the chart, between electrical power lines and any part of a hoisting device or load. If the power line voltage cannot be determined, maintain a minimum of 45 feet clearance.

<table>
<thead>
<tr>
<th>Power Line Voltage</th>
<th>Distance from Power Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 kV or below</td>
<td>10 feet</td>
</tr>
<tr>
<td>50 kV - 200 kV</td>
<td>15 feet</td>
</tr>
<tr>
<td>200 kV - 350 kV</td>
<td>20 feet</td>
</tr>
<tr>
<td>350 kV - 500 kV</td>
<td>25 feet</td>
</tr>
<tr>
<td>500 kV - 750 kV</td>
<td>35 feet</td>
</tr>
<tr>
<td>750 kV - 1000 kV</td>
<td>45 feet</td>
</tr>
</tbody>
</table>

Clearances for Cranes or Other Equipment in Transit Near Power Lines

<table>
<thead>
<tr>
<th>Power Line Voltage</th>
<th>Distances From Power Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.75 kV or below</td>
<td>4 feet</td>
</tr>
<tr>
<td>0.75 kV - 50 kV</td>
<td>6 feet</td>
</tr>
<tr>
<td>over 50 kV - 345 kV</td>
<td>10 feet</td>
</tr>
<tr>
<td>over 345 kV - 750 kV</td>
<td>16 feet</td>
</tr>
<tr>
<td>over 750 kV - 1000 kV</td>
<td>20 feet</td>
</tr>
</tbody>
</table>

*Note: 1 kV = 1,000 Volts*

If power line voltage clearance requirements cannot be met, then ensure that a power company official de-energizes and grounds the power lines before any part of the crane or load enters the clear zone.

Whenever possible, perform your work moving away from the power line, not towards it.

Whenever working a crane within one boom length of the mandatory minimum clearance from a power line in any direction—front, back, side or overhead—position a lookout on the ground to warn you of the approach to the limits. The lookout cannot be the same person (groundman) who is giving signals for the move.

**S-17.2.6 Load Clear of Persons**

Do not move a load until all persons are clear. Never move a load over people or occupied equipment. Use a warning device to warn persons in the path of the approaching load.

**S-17.3 Passengers**

Board a crane only if authorized by the operator. If you are a passenger, ride only in safe areas designated by the operator.
S-17.4 Electric Cranes
When operating an electric crane, do not leave the crane cab or allow anyone on top of the cab without opening the main switch.

S-17.5 Restrictions Near Hoisting Equipment

S-17.5.1 Working Near Equipment
Do not walk, stand, or work under a suspended load. When possible, avoid walking, standing, or working under crane booms, or in close proximity to pile driver leads.

When working with or near lifting operations, keep clear of the swinging boom, counterweight, or cab.

S-17.5.2 Guiding the Load
Use only tag lines, poles or load hooks to guide a load. Use guides or fixtures, where available, for precision placement.

**Exception:** When necessary for precision placement and following risk assessment, gloved hand or hands may be used to guide a load into final position, provided that no part of the body is placed between the load and any obstruction that would create a pinch point.

S-17.6 Crane and Hoisting Signals

Only a designated employee (groundman) will give signals to the hoisting machine operator. Before work begins, the groundman must communicate with the operator to develop an understanding of all signals.

The crane operator must stop the move if a signal is not understood or if visual contact is lost with the groundman. The groundman must continue to give signals until the move is complete.

When two or more hoisting machines are lifting the same load, only one designated employee will direct the movements.

Accept signals for operating hoisting equipment only from the designated groundman, except in an emergency. An emergency stop signal must be accepted from anyone.

S-17.7 Standard Crane Hand Signals

HOIST: With forearm vertical, forefinger pointing up, move hand in small horizontal circle.
LOWER: With arm extended downward, forefinger pointing down, move hand in small horizontal circle.
STOP: Arm extended, palm down, move arm back and forth horizontally.
EMERGENCY STOP: Both arms extended, palms down, move arms back and forth horizontally.
SWING: Arm extended, point with finger in direction of swing of boom.
TRAVEL: Arm extended forward, hand open and slightly raised, make pushing motion in direction of travel.
RAISE BOOM: Arm extended, fingers closed, thumb pointing upward.
LOWER BOOM: Arm extended, fingers closed, thumb pointing downward.
USE MAIN HOIST: Tap fist on head; then use regular signals.
USE WHIPLINE (Auxiliary hoist): Tap elbow with one hand; then use regular signals.
MOVE SLOWLY: Use one hand to give any motion signal and place other hand motionless in front of hand giving the motion signal. (Hoist slowly as shown in picture.)
DOG EVERYTHING: Clasp hands in front of body.
RETRACT BOOM (Telescoping Booms): Both fists in front of body with thumbs pointing toward each other.
EXTEND BOOM (Telescoping Booms): Both fists in front of body with thumbs pointing outward.
RAISE BOOM, LOWER LOAD: With arm extended, thumb pointing up, flex fingers in and out as long as load movement is desired.

LOWER BOOM, RAISE LOAD: With arm extended, thumb pointing down, flex fingers in and out as long as load movement is desired.

TRAVEL (One Track): Lock the track on side indicated by raised fist; travel opposite track in direction indicated by circular motion of other fist, rotated vertically in front of body. (For land cranes only)

TRAVEL (Both Tracks): Use fists in front of body, making a circular motion about each other, indicating direction of travel, forward or backward. (For land cranes only)

S-17.9 Personnel Hoisting
Material handling cranes must not hoist personnel, except with the authority of the supervisor and only in compliance with the requirements stated in ANSI standard B30-5-1994 “Mobile and Locomotive Cranes.”

S-20.0 Work Environment

S-20.1 Protection for Openings
Keep covers on drop pits, manholes, or similar openings. When necessary to remove the covers, use the proper barricades or guard rails to protect the opening.

Do not step or jump across pits, manholes, or similar openings.

S-20.2 Clearances and Obstructions

S-20.2.1 Overhead and Side Obstructions
Do not contact overhead or side obstructions on or near the right of way.

S-20.2.2 Communication/Signal Wires
Do not touch broken or sagging communication and signal wires, power lines, and guy wires. Repair wires and power lines only if you are qualified to do so. Do not use metal or metal-reinforced tape near wires.

S-20.3 Confined Space
Consider all confined spaces hazardous unless proven otherwise. All employees and subcontractors must have a permit before entering a permit-required confined space.

S-20.4 Machine Operation
Unauthorized persons must not be on hoists, machines, or any shop machinery, or distract employees operating such equipment.

S-20.4.1 Protecting Hoses/Cables
Operate mobile equipment over hoses or electrical cables only if they are properly bridged.

S-20.4.2 Working Surfaces
Keep working surfaces free of coolants, lubricants, petroleum products, or other slippery material when these surfaces are on or around vehicles, machines, or equipment that employees are operating.

S-20.5 Office Environment

S-20.5.1 Office Equipment Arrangement
Arrange office equipment to keep aisles and emergency exits clear.
S-20.5.2 Filing Cabinets and Desks

Arrange contents of filing cabinets to balance the cabinet.
Distribute contents throughout the cabinet rather than in the top drawer; place the heavier materials in the bottom drawer.
Arrange the material neatly and keep the cabinet and desk drawers closed while unattended.
Do not use the top of cabinets for storage.

S-20.5.3 Chairs

Do not scoot across floors or stand on chairs with casters. Keep all chair legs on the floor.

S-20.5.4 Cords

In walking areas, encase the telephone or electrical cords in cord protectors, or properly secure them.

S-20.5.5 Paper Cutters

Use paper cutters and other office equipment carefully, keeping body parts clear. Close and secure the paper cutter blade after use.

S-20.5.6 Reaching Overhead

Use a ladder or step stool to reach overhead objects.

S-21.0 Personal Protective Equipment and Clothing (PPE)

S-21.1 Personal Protective Equipment Requirements

All BNSF employees, contractors and their agents, visitors, and vendors must wear the following equipment while on BNSF property:

- Hard hats with minimum six-point suspension.
  
  **Exception:** If the hard hat currently being worn has fewer than six points of suspension, it may continue to be used until it is worn out or damaged. The replacement hard hat must have a minimum six-point suspension.

- Safety glasses with permanently mounted side shields and authorized by BNSF. Authorized tints for safety glasses are: Rose #1 and 2 and Grey #1 indoors, and Rose #1 and 2 and Grey #1, 2 and 3 outdoors. No other tinting is permitted. Mirrorlike lenses and amber (“shooters”) lenses are prohibited.

- Safety boots.

- Hearing protection (ear plugs/ear muffs) when entering designated hearing protection areas, while performing designated jobs/activities, or in situations where the noise requires you to raise your voice during normal conversation at a distance of 3 feet.

- Hand protection when there is a risk of exposure to harmful substances, punctures, severe abrasions, lacerations or cuts, chemical or thermal burns, high voltage, vibration, temperature extremes, or infectious biological agents.

- Enhanced-visibility work wear (reflective lime green, yellow, or orange) when working at derailment sites, grade crossings, on work trains, or at intermodal facilities. At intermodal facilities, checkpoint employees must wear enhanced-visibility vests. Roadway workers, when working on or near track, must wear at least one item of high-visibility, orange work wear. (At night, the work wear must be retro-reflective.) The following items meet high-visibility requirements: radio waist belt/harness, radio belt, striping, welding jacket, hard cap/hat with reflective markings, and hard cap/hat with high-visibility cover. All mechanical/P&M employees are to wear reflective vest or belt on service tracks.
Exceptions

- Personal protective equipment (PPE) is not required in offices, automobiles on paved surfaces, or passenger-carrying rail cars.

- Hard hats: Not required for Train, Yard, and Engine (TY&E) employees except when performing work service with Maintenance of Way, at derailments, or as directed by supervisor. Not required in vehicles or equipment with overhead protection. Not required for railroad police except at derailments and in shops as required.

- Safety boots and safety glasses: Not required when excepted by contractual agreements.

Off-the-Job Use

Employees are encouraged to use BNSF-provided personal protective equipment (PPE) off the job.

Other

Additional personal protective equipment, such as face shields, fall protection, welding jackets, etc., may be required by supervisors and/or as good safety practice warrants. See the PPE Chart for task/exposure-specific personal protective equipment requirements and recommendations.

S-21.1.1 Approved Equipment

BNSF employees must use personal protective equipment approved by the company. Replace and discard any PPE that no longer provides protection. Refer to the PPE Chart for requirements and recommendations.

S-21.2 Personal Protective Clothing Requirements

All BNSF employees, contractors and their agents, visitors, and vendors, working in other than an office environment, must wear long pants and waist-length shirts with sleeves at all times. Clothing must not interfere with vision, hearing, or use of hands and feet.

- Do not wear jewelry, wrist watches, finger rings, long watches or key chains, key rings, or other suspended jewelry when they present a hazard around machinery or electrical lines and equipment.

- Hair must be secured out of the way if it could become entangled in machinery or obscure your vision.

S-21.2.1 Special Protective Clothing

Wear protective clothing when the potential for chemical or physical injury to the body exists.

S-21.2.2 Safety Boots

Safety boots must meet the following criteria:

- Leather or leather-like upper.
- Sturdy non-leather sole that will resist puncture.
- 3/8-inch to 1-inch defined instep.
- Rounded toe.
- Above ankle (5-inch height as measured from inside boot).
- Minimum ANSI Z41.1—75-pound (100 pounds in Canada) impact and compression class toe.
- Chemical resistant.
- Lace-up.

S-21.2.3 Protective Gloves

Wear protective gloves where the potential for chemical or physical injury to the hands exists. Use the PPE Chart and Work Glove Selection Guide to select the appropriate glove for the task. When selecting chemical-resistant gloves, check with your supervisor.
S-21.3 Respirator Selection and Use
Refer to the Respiratory Protection Chart to determine which task requires use of respirators. Your supervisor, safety manager, or the Industrial Hygiene group may specify additional tasks or activities not listed that require the use of respirators. For appropriate respirator selection, contact Industrial Hygiene.

S-21.3.1 Respiratory Protection Program
All BNSF employees who use a respirator must comply with the practices and procedures outlined in the Respiratory Protection program. If you use a respirator, even if such use is voluntary, you must:
- Be trained and fit-tested annually for the specific make and model of the respirator used.
- Be medically qualified annually.
- Be clean-shaven where the respirator seal meets the face.
- Inspect your respirator prior to use.
- Clean and properly store respirator following use.

S-21.4 Dark Lens Eye Protection
Except when welding or operating a torch, do not wear dark lens goggles or glasses at night or when working inside buildings/shops.

Photo-grey or transition lenses are not to be worn by personnel operating mobile equipment from outdoor to indoor locations, or by personnel who perform similar tasks requiring critical activity or fast reaction to visual stimuli.

S-21.5 Hearing Protection
Wear hearing protection if you work in the following areas:
- On a locomotive under load.

**Exception:** When all doors and windows are closed, hearing protection is not required inside the control compartment of GE locomotives B40-8W, C40-8W, B40-8, C44-9W and EMD locomotives GP60M, SD60M, SD70M, and SD70MAC.
- Within 100 feet of humping or retarder operations.
- In a high-noise area required by posted notice or special instructions.
- In an area where continuous noise requires you to raise your voice to be heard at a distance of 3 feet.

Annual hearing conservation training and audiometric testing is mandatory for employees required to wear hearing protection on the job. Regardless of noise exposure, you are encouraged to participate in the hearing conservation program.

S-21.5.1 Use of Hearing Protection During Hot Work
All employees involved in welding, cutting, or heating operations must wear earplugs or ear muffs.
### Personal Protective Equipment and Clothing Chart (PPE)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hearing Protection</th>
<th>See Eye &amp; Face Protection Chart</th>
<th>Protective Handwear (See Work Glove Selection Chart)</th>
<th>See Respiratory Protection Chart</th>
<th>Welder’s Jacket or Sleeves</th>
<th>Spats, Leggings</th>
<th>Disposable Overalls</th>
<th>Rubberized Apron</th>
<th>Remarks/ Special Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasive blasting</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td></td>
<td>#</td>
<td></td>
</tr>
<tr>
<td>Abrasive grinding or cutting (stationary)</td>
<td>O</td>
<td>X</td>
<td></td>
<td></td>
<td>#</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abrasive grinding or cutting (portable)</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td>All employees involved in welding, cutting or heating operations must wear earplugs or ear muffs while performing this task.</td>
</tr>
<tr>
<td>Adzing machine</td>
<td>X</td>
<td>X</td>
<td>O</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Metal leggings and foot guards required.</td>
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<tr>
<td>ATV, operation of</td>
<td>#</td>
<td>X</td>
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<td></td>
<td></td>
<td>See S-12.2</td>
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<td>Banding materials</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Batteries, servicing locomotive</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blowing and cleaning with compressed air, steam, or water</td>
<td>#</td>
<td>X</td>
<td>O</td>
<td>#</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>See S-3.3.1</td>
</tr>
<tr>
<td>Boring, reaming, drilling</td>
<td>#</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breaking frozen material, (ice, ground, gravel, cinders, ballast, taconite, etc.) with hand tools</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breaking or cutting concrete, stone, or asphalt</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bridge work</td>
<td>#</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buffing and polishing with a wire wheel</td>
<td>#</td>
<td>X</td>
<td></td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon-arc cutting and gouging</td>
<td>#</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td>All employees involved in welding, cutting or heating operations must wear earplugs or ear muffs while performing this task.</td>
</tr>
<tr>
<td>Chain saw, chop saw</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Chaps required.</td>
</tr>
<tr>
<td>Chipping, cutting, or caulking metal</td>
<td>#</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td></td>
<td></td>
<td>All employees involved in welding, cutting or heating operations must wear earplugs or ear muffs while performing this task.</td>
</tr>
<tr>
<td>Climbing poles and rail/work equipment</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cut-off disks, saws, or other tools with carbide bits</td>
<td>X</td>
<td>X</td>
<td></td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>All employees involved in welding, cutting or heating operations must wear earplugs or ear muffs while performing this task.</td>
</tr>
<tr>
<td>Cutting rivets, bolts, or cotter keys, splitting nuts, etc.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPE Chart</td>
<td>Hearing Protection</td>
<td>See Eye &amp; Face Protection Chart</td>
<td>Protective Handwear (See Work Glove Selection Chart)</td>
<td>See Respiratory Protection Chart</td>
<td>Welder's Jacket or Sleeves</td>
<td>Spats, Legging-s</td>
<td>Disposable Overalls</td>
<td>Rubberizered Apron</td>
<td>Remarks/ Special Requirements</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------</td>
<td>---------------------------------</td>
<td>-----------------------------------------------------</td>
<td>--------------------------------</td>
<td>-----------------------------</td>
<td>--------------------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Driving bucking, sticking, or heating rivets</td>
<td>#</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td></td>
<td></td>
<td>All employees involved in welding, cutting or heating operations must wear earplugs or ear muffs while performing this task.</td>
</tr>
<tr>
<td>Dusty conditions</td>
<td>#</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gloves of the proper classification are to be worn when working 50 volts and over.</td>
</tr>
<tr>
<td>Electrical hazard</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Kneepads required when kneeling for extended periods of time. All employees involved in welding, cutting or heating operations must wear earplugs or ear muffs while performing this task. See S-21.5.1.</td>
</tr>
<tr>
<td>Electrical welding</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td>Kneepads required when kneeling for extended periods of time. All employees involved in welding, cutting or heating operations must wear earplugs or ear muffs while performing this task. See S-21.5.1.</td>
</tr>
<tr>
<td>Fueling locomotive</td>
<td>#</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td>See S-12.2.</td>
</tr>
<tr>
<td>Gas welding, cutting, heating</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td>Kneepads required when kneeling for extended periods of time. All employees involved in welding, cutting or heating operations must wear earplugs or ear muffs while performing this task. See S-21.5.1.</td>
</tr>
<tr>
<td>Hammer - punch</td>
<td>X</td>
<td>X</td>
<td>O</td>
<td>#</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td>Tool holder must be used.</td>
</tr>
<tr>
<td>Hand tools</td>
<td>O</td>
<td>X</td>
<td>O</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Handling chemicals or refrigerants, or in greasy conditions</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermite welding</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>All employees involved in welding, cutting or heating operations must wear earplugs or ear muffs while performing this task.</td>
</tr>
<tr>
<td>Handling or servicing storage batteries</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermodal facility - outside of offices</td>
<td>#</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Enhanced visibility workwear must be worn. Checkpoint employees must wear enhanced visibility vests.</td>
</tr>
<tr>
<td>Lifting and carrying</td>
<td>X</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machining steel, iron, or other metals</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td>All employees involved in welding, cutting or heating operations must wear earplugs or ear muffs while performing this task.</td>
</tr>
<tr>
<td>MIG/TIG welding</td>
<td>#</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Painting</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**PPE Chart**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hearing Protection</th>
<th>See Eye &amp; Face Protection Chart</th>
<th>Protective Handwear (See Work Glove Selection Chart)</th>
<th>See Respiratory Protection Chart</th>
<th>Welder’s Jacket or Sleeves</th>
<th>Spats, Leggings</th>
<th>Disposable Overalls</th>
<th>Rubberized Apron</th>
<th>Remarks/ Special Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plasma arc cutting</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>Keep pads required when kneeling for extended periods of time. All employees involved in welding, cutting or heating operations must wear earplugs or ear muffs while performing this task.</td>
</tr>
<tr>
<td>Powder-actuated tools</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rail grinder</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rail saw or drill</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td>O</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sand blasting (abrasive blasting)</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sanding locomotives</td>
<td>#</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scaling, scraping, or removing welding flux</td>
<td>#</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spray painting (gun)</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steam cleaning</td>
<td>#</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Striking, or striking with, hardened tools and fastenings</td>
<td>#</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thawing with propane</td>
<td>O</td>
<td>X</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visitors</td>
<td>#</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Wear PPE according to what the person performing the task is wearing.</td>
</tr>
<tr>
<td>Washing locomotives</td>
<td>X</td>
<td>X</td>
<td>O</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodworking machines</td>
<td>#</td>
<td>X</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>O</td>
</tr>
</tbody>
</table>

Spraying/general use of cleaning agents: follow manufacturer’s instructions.

**S-21.31 Eye and Face Protection Chart (PPE)**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Type of safety eyewear and facewear to be worn (properly tinted lenses must be used as required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Requirements</td>
<td>More Severe Exposure</td>
</tr>
<tr>
<td>Abrasive blasting (sand blasting)</td>
<td>Supplied air hood</td>
</tr>
<tr>
<td>Abrasive grinding or cutting (portable)</td>
<td>Faceshield over impact goggle</td>
</tr>
<tr>
<td>Abrasive grinding or cutting (stationary)</td>
<td>Faceshield over safety glasses</td>
</tr>
<tr>
<td>Adzing machines</td>
<td>Faceshield over impact goggle</td>
</tr>
<tr>
<td>ATV, operation of</td>
<td>Safety glasses</td>
</tr>
<tr>
<td>Banding materials</td>
<td>Safety glasses</td>
</tr>
<tr>
<td>Batteries, servicing locomotive</td>
<td>Faceshield over splash goggles</td>
</tr>
<tr>
<td>Blowing or cleaning with compressed air</td>
<td>Splash or impact goggle; or welding helmet</td>
</tr>
<tr>
<td></td>
<td>Always direct air away from eyes. See Track Welding manual for requirements when welding.frogs.</td>
</tr>
</tbody>
</table>
## Eye and Face Protection Chart

<table>
<thead>
<tr>
<th></th>
<th>Basic Requirements</th>
<th>More Severe Exposure</th>
<th>Remarks/ Special Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boring, drilling or reaming</td>
<td>Safety glasses</td>
<td>Impact goggle</td>
<td></td>
</tr>
<tr>
<td>Breaking frozen ground, gravel, cinders, ballast, taconite, etc., with hand tools</td>
<td>Safety glasses</td>
<td>Faceshield over impact goggle</td>
<td></td>
</tr>
<tr>
<td>Breaking or cutting concrete, stone, or asphalt</td>
<td>Impact goggle</td>
<td>Faceshield over impact goggle</td>
<td></td>
</tr>
<tr>
<td>Buffing and polishing with a wire wheel</td>
<td>Faceshield over safety glasses</td>
<td>Faceshield over impact goggle</td>
<td></td>
</tr>
<tr>
<td>Carbon-arc cutting and gouging</td>
<td>Welding helmet</td>
<td></td>
<td>See Welding Operations Shade Chart.</td>
</tr>
<tr>
<td>Chain saw, chop saw</td>
<td>Impact goggle</td>
<td>Faceshield over impact goggle</td>
<td></td>
</tr>
<tr>
<td>Chipping, cutting, or caulking metal</td>
<td>Impact goggle</td>
<td>Faceshield over impact goggle</td>
<td></td>
</tr>
<tr>
<td>Climbing poles and rail equipment</td>
<td>Safety glasses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cut-off discs, saws, or other tools with carbide bits</td>
<td>Faceshield over impact goggle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutting rivets, bolts, cotter keys, splitting nuts, etc.</td>
<td>Safety glasses</td>
<td>Impact goggle; or face shield over safety glasses</td>
<td>When working overhead, wear impact goggle and faceshield.</td>
</tr>
<tr>
<td>Driving, bucking, sticking, or heating rivets</td>
<td>Faceshield over safety glasses</td>
<td>Faceshield over impact goggle</td>
<td></td>
</tr>
<tr>
<td>Dusty conditions</td>
<td>Safety glasses</td>
<td>Impact or monoshield goggle</td>
<td></td>
</tr>
<tr>
<td>Electrical welding</td>
<td>Welding helmet over safety glasses</td>
<td></td>
<td>See Welding Operations Shade Chart.</td>
</tr>
<tr>
<td>Electrical hazard</td>
<td>Safety glasses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fueling locomotives</td>
<td>Splash goggle; or faceshield over safety glasses</td>
<td>Faceshield over splash goggle</td>
<td></td>
</tr>
<tr>
<td>Gas welding cutting, and heating</td>
<td>Welding goggle; or shaded faceshield over safety glasses</td>
<td>Welding helmet over safety glasses</td>
<td></td>
</tr>
<tr>
<td>Hammer - punch</td>
<td>Safety glasses</td>
<td>Faceshield over safety glasses or impact goggle</td>
<td>See Welding Operations Shade Chart.</td>
</tr>
<tr>
<td>Hand tools</td>
<td>Safety glasses</td>
<td>Impact goggle</td>
<td></td>
</tr>
<tr>
<td>Handling chemicals or refrigerants, or in greasy conditions</td>
<td>Splash goggle</td>
<td>Faceshield over splash goggle</td>
<td></td>
</tr>
<tr>
<td>Handling molten metal</td>
<td>See Thermite Welding.</td>
<td>Handling or servicing storage batteries</td>
<td>Faceshield over splash goggle</td>
</tr>
<tr>
<td>Intermodal facility</td>
<td>Safety glasses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifting and carrying</td>
<td>Safety glasses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIG/TIG welding</td>
<td>Welding helmet over safety glasses</td>
<td></td>
<td>See Welding Operations Shade Chart.</td>
</tr>
<tr>
<td>Painting</td>
<td>Safety glasses</td>
<td>Faceshield over splash goggle</td>
<td></td>
</tr>
<tr>
<td>Plasma arc cutting</td>
<td>Welding helmet over safety glasses</td>
<td></td>
<td>See Welding Operations Shade Chart.</td>
</tr>
<tr>
<td>Powder-actuated tools</td>
<td>Impact goggle</td>
<td>Faceshield over splash goggle</td>
<td></td>
</tr>
<tr>
<td>Rail drills</td>
<td>Safety glasses</td>
<td>Impact goggle</td>
<td></td>
</tr>
<tr>
<td>Rail grinder or saw</td>
<td>Faceshield over impact goggle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sandblasting (abrasive blasting)</td>
<td>Supplied air hood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sanding locomotives</td>
<td>Safety glasses</td>
<td>Impact goggle</td>
<td></td>
</tr>
</tbody>
</table>
### Eye and Face Protection Chart

<table>
<thead>
<tr>
<th>Type of safety eyewear and facewear to be worn (properly tinted lenses must be used as required)</th>
<th>Basic Requirements</th>
<th>More Severe Exposure</th>
<th>Remarks/ Special Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scaling, scraping or removing welding flux</td>
<td>Safety glasses</td>
<td>Impact goggle</td>
<td></td>
</tr>
<tr>
<td>Spray painting (gun)</td>
<td>Splash goggle</td>
<td>Faceshield over splash goggle</td>
<td></td>
</tr>
<tr>
<td>Spraying and general use of chemicals</td>
<td>Splash goggle</td>
<td>Faceshield over splash goggle</td>
<td></td>
</tr>
<tr>
<td>Steam cleaning</td>
<td>Splash goggle</td>
<td>Faceshield over splash goggle</td>
<td></td>
</tr>
<tr>
<td>Striking, or striking with, hardened tools and fastenings</td>
<td>Safety glasses</td>
<td>Impact goggle</td>
<td></td>
</tr>
<tr>
<td>Thawing with propane</td>
<td>Safety glasses</td>
<td>Impact goggle</td>
<td></td>
</tr>
<tr>
<td>Thermite welding</td>
<td>Safety glasses with cobalt lenses</td>
<td>Faceshield over safety glasses with cobalt lenses</td>
<td></td>
</tr>
<tr>
<td>Visitors exposed to eye hazards</td>
<td>Safety glasses</td>
<td>Impact goggle</td>
<td>Employee in charge may require that additional equipment be worn.</td>
</tr>
<tr>
<td>Washing locomotives</td>
<td>Faceshield over safety glasses or splash goggle</td>
<td>Faceshield over splash goggle</td>
<td></td>
</tr>
<tr>
<td>Woodworking machines</td>
<td>Safety glasses</td>
<td>Impact goggle</td>
<td></td>
</tr>
</tbody>
</table>

### S-21.32 Work Glove Chart (PPE)

#### Work Glove Selection Guide

<table>
<thead>
<tr>
<th>X = Preferred glove</th>
<th>O = Acceptable alternative</th>
<th>Brown Jersey</th>
<th>Canvas</th>
<th>Grip</th>
<th>Leather Palm</th>
<th>Vinyl-Coated Knit-Lined</th>
<th>Leather Driver's</th>
<th>Welder's Glove</th>
<th>Welder's Mitten</th>
<th>Chemical Resistant</th>
<th>Cut Resistant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasive blasting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abrasive grinding or cutting (portable)</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adzing machines</td>
<td></td>
<td></td>
<td>O</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>ATV, operation of</td>
<td></td>
<td></td>
<td>O</td>
<td></td>
<td></td>
<td>O</td>
<td>X</td>
<td>X</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Banding material</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Batteries, servicing locomotive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Blowing and cleaning with compressed air or steam</td>
<td></td>
<td></td>
<td>O</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boring, reaming, drilling (portable)</td>
<td></td>
<td></td>
<td>O</td>
<td></td>
<td></td>
<td>O</td>
<td>X</td>
<td>O</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breaking or cutting frozen material (ice, ground, gravel, cinders, ballast, taconite, etc.) with hand tools</td>
<td></td>
<td></td>
<td>O</td>
<td></td>
<td></td>
<td>O</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>Bridge work</td>
<td></td>
<td></td>
<td>O</td>
<td></td>
<td></td>
<td>O</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Buffing and polishing with a wire wheel</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>Carbon arc welding and gouging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chain saw, chop saw</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chipping, cutting, or caulking metal</td>
<td></td>
<td></td>
<td>O</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>O</td>
<td></td>
</tr>
</tbody>
</table>
### Work Glove Selection Guide

| Activity                                                                 | Brown Jersey | Canvas | Grip | Leather Palm | Vinyl-Coated Knit-Lined | Leather Driver’s | Welder’s Glove | Welder’s Mitten | Chemical Resistant | Cut Resistant |
|--------------------------------------------------------------------------|--------------|--------|------|--------------|-------------------------|------------------|----------------|----------------|------------------|----------------|---------------|
| Climbing poles and rail/work equipment                                  | O            | O      |      | O            |                         |                  |                |                |                  |                |
| Cut-off disks, saws, or other tools with carbide bits                    | X            | X      | X    |              |                         |                  |                |                |                  |                |
| Cutting rivets, bolts, or cotter keys, splitting nuts, etc.              | O            | X      | X    |              |                         |                  |                |                |                  |                |
| Driving, bucking, sticking, or heating rivets                           | X            | X      | O    |              |                         |                  |                |                |                  |                |
| Electrical welding                                                      | X            |        |      |              |                         |                  |                |                |                  |                |
| Fueling locomotives                                                     | O            | O      | O    | O            |                         |                  |                |                |                  | X             |
| Gas welding, cutting, heating                                           | X            |        |      |              |                         |                  |                |                |                  | O             |
| Hammer (punch)                                                          | O            |        |      | X            |                         |                  |                |                |                  |                |
| Hand tools                                                               | O            | O      | O    | O            |                         | O                | O              |                 |                  | O             |
| Handling chemicals                                                      |              |        |      |              |                         |                  |                | X              |                  |               |
| Handling molten metal                                                   |              |        |      |              |                         |                  | X              | X              |                  |               |
| Handling/servicing storage batteries                                   |              |        |      |              |                         |                  |                |                |                  | X             |
| Intermodal facility                                                     | O            | O      | O    | X            | O                       | X                | X              | X              | X                |               |
| Lifting and carrying                                                    | O            | X      | X    | O            |                         | X                |                |                |                  |               |
| Machine operators                                                       | O            | O      | O    | X            |                         | X                |                |                |                  |               |
| Machining                                                               | O            | X      | O    | X            |                         |                  |                |                |                  |               |
| MIG/TIG welding                                                         |              |        |      |              |                         | X                | O              |                |                  |               |
| Painting                                                                |              |        |      |              |                         |                  |                | X              |                  |               |
| Plasma arc cutting                                                      |              |        |      |              |                         | X                | O              |                |                  |               |
| Power-actuated tools                                                    | X            | X      |      |              |                         |                  |                |                |                  | O             |
| Rail grinder, drill or saws                                             | O            |        |      | X            |                         |                  |                |                |                  | O             |
| Sanding locomotives                                                     | O            | O      | O    | X            | O                       | O                |                |                |                  |               |
| Scaling, scraping, or removing welding flux                             | O            | O      |      | X            |                         |                  |                |                |                  | O             |
| Spike Keeg Handling                                                     |              |        |      |              |                         |                  |                |                |                  | X             |
| Spraying or general use of cleaning agents                              |              |        |      |              |                         |                  |                |                |                  |               |
| Spray painting (gun)                                                    |              |        |      |              |                         |                  |                | X              |                  |               |
| Steam cleaning                                                          |              |        |      |              |                         |                  |                |                |                  | X             |
| Striking, or striking with hardened tools and fastenings                | X            | O      | X    |              |                         |                  |                |                |                  | O             |
| Stripping cable                                                         |              |        |      |              |                         |                  |                | O              |                  |               |
| Thawing with propane                                                    |              |        |      | X            | X                       |                  |                |                |                  |               |
| Washing locomotives                                                     |              |        |      |              |                         | X                |                | X              |                  |               |
| Woodworking tools                                                       | O            | X      | X    | O            |                         | O                | X              |                |                  | X             |
### S-21.33 Respiratory Protection Chart (PPE)

<table>
<thead>
<tr>
<th>Respirators Used at BNSF</th>
<th>Air Purifying Cartridges to Use with Reusable Half or Full Mask</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Multi-Contaminant/Contaminant/</td>
</tr>
<tr>
<td></td>
<td>P100-HEPA</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Asbestos (footnote 1)</td>
<td>X</td>
</tr>
<tr>
<td>Abrasive blasting</td>
<td></td>
</tr>
<tr>
<td>Ballast, sand, and taconite dust (visible)</td>
<td>X</td>
</tr>
<tr>
<td>Dust or mist (nuisance)</td>
<td>O</td>
</tr>
<tr>
<td>Frog repairs, torch gouging, welding, carbon arcing or gouging</td>
<td>X</td>
</tr>
<tr>
<td>Grinding (general)</td>
<td>O</td>
</tr>
<tr>
<td>Pesticide/insecticide application</td>
<td>O</td>
</tr>
<tr>
<td>Solvents</td>
<td>O</td>
</tr>
<tr>
<td>Spray paint (oil-based) using air compressor (footnote 2)</td>
<td>X</td>
</tr>
<tr>
<td>Spray paint (water-based) using air compressor (footnote 2)</td>
<td>X</td>
</tr>
<tr>
<td>Welding/cutting in confined spaces (requires ventilation)</td>
<td>X</td>
</tr>
<tr>
<td>Welding/cutting (mild steel)</td>
<td>O</td>
</tr>
<tr>
<td>Welding/cutting of galvanized or stainless steel</td>
<td>X</td>
</tr>
<tr>
<td>Welding/cutting, torch burning, or rivet busting (lead-based painted surfaces)</td>
<td>X</td>
</tr>
</tbody>
</table>

1. Cutting, drilling, or otherwise disturbing asbestos-containing materials.
2. Add a paint mist prefiter to the cartridge.
3. Required company-wide for operation or material. Specific selection will depend on protection factor of respirator, concentration of chemical agent, and individual’s physical condition. Consult Industrial Hygiene for specific selection.
4. This would be an appropriate selection if a respirator is not required at a specific location but an individual would prefer to wear a respirator.

**NOTE:** This chart is for informational purposes only. It is NOT a guide for selecting respirator protection. Industrial Hygiene will determine the correct respirator configuration based on material, exposure, and task. Consult Industrial Hygiene for information on materials or operations not listed in this chart.
## S-21.34 Welding Chart (PPE)

<table>
<thead>
<tr>
<th>Welding Operations Shade Chart</th>
<th>Lens selection guide for filter shades that must be used when welding and cutting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shade Number</strong></td>
<td>3 or 4</td>
</tr>
<tr>
<td>Carbon-arc cutting and gouging</td>
<td>x</td>
</tr>
<tr>
<td>Carbon-arc welding (heavy)</td>
<td></td>
</tr>
<tr>
<td>Carbon-arc welding (light)</td>
<td></td>
</tr>
<tr>
<td>Gas metal-arc welding MIG/Fluxcore (ferrous): 1/16&quot;, 3/32&quot;, 1/8&quot;, 5/32&quot; electrodes</td>
<td></td>
</tr>
<tr>
<td>Gas metal-arc welding MIG/Fluxcore (non-ferrous): 1/16&quot;, 3/32&quot;, 1/8&quot;, 5/32&quot; electrodes</td>
<td></td>
</tr>
<tr>
<td>Oxy/fuel welding: up to 1/8&quot;</td>
<td>x</td>
</tr>
<tr>
<td>Oxy/fuel welding: 1/8&quot; to 1/2&quot;</td>
<td></td>
</tr>
<tr>
<td>Oxy/fuel welding: 1/2&quot; and over</td>
<td></td>
</tr>
<tr>
<td>Oxy/fuel heating and cutting: up to 1&quot;</td>
<td></td>
</tr>
<tr>
<td>Oxy/fuel heating and cutting: 1&quot; to 6&quot;</td>
<td></td>
</tr>
<tr>
<td>Oxy/fuel heating and cutting: 6&quot; and over</td>
<td></td>
</tr>
<tr>
<td>Plasma arc cutting: less than 300 amps</td>
<td></td>
</tr>
<tr>
<td>Plasma arc cutting: 300-400 amps</td>
<td></td>
</tr>
<tr>
<td>Plasma arc cutting: greater than 400 amps</td>
<td></td>
</tr>
<tr>
<td>Shielded metal-arc welding: 1/16&quot;, 3/32&quot;, 1/8&quot;, 5/32&quot; electrodes</td>
<td></td>
</tr>
<tr>
<td>Shielded metal-arc welding: 3/16&quot;, 7/32&quot;, 1/4&quot; electrodes</td>
<td></td>
</tr>
<tr>
<td>Shielded metal-arc welding: 5/16&quot;, 3/8&quot; electrodes</td>
<td></td>
</tr>
<tr>
<td>Thermite welding</td>
<td>x</td>
</tr>
<tr>
<td>TIG welding: less than 50A</td>
<td></td>
</tr>
<tr>
<td>TIG welding: 50-150A</td>
<td></td>
</tr>
<tr>
<td>Torch brazing</td>
<td>x</td>
</tr>
</tbody>
</table>
S-22.0 Movement of Trains and Engines

S-22.1 Inspecting Passing Trains
Inspect passing trains. If you detect any of the following conditions, notify crew members on the passing train by any available means:

- Overheated journals.
- Sticking brakes.
- Sliding wheels.
- Wheels not properly positioned on the rail.
- Dragging equipment.
- Insecure contents.
- Signs of smoke or fire.
- Headlights or markers improperly displayed.
- Any other dangerous conditions.

When possible, a crew member on the engine of the train being inspected must notify a crew member on the rear of the train when the train is being inspected by other employees.

S-23.0 Railroad Radio Rules

S-23.1 Transmitting
Any employee operating a radio must do the following:

- Before transmitting, listen long enough to make sure the channel is not being used.
- Give the required identification.
- Not proceed with further transmission until acknowledgment is received.

S-23.2 Required Identification
Employees transmitting or acknowledging a radio communication must begin with the required identification. The identification must include the following in this order:

For base or wayside stations:

- Name or initials of the railroad.
- Name and location or other unique designation.

For mobile units:

- Name or initials of the railroad.
- Train name (number), engine number, or words that identify the precise mobile unit.
- If communication continues without interruption, repeat the identification every 15 minutes.

Short Identification
After making a positive identification for switching, classification, and similar operations within a yard, fixed and mobile units may use a short identification after the initial transmission and acknowledgment.
S-23.3 Repetition
An employee who receives a transmission must repeat it to the person transmitting the message, except when the communication:

- Concerns switching operations.
- Is a recorded message from an automatic alarm device.
- or
- Is general and does not contain any information, instruction, or advice that could affect the safety of a railroad operation.

S-23.4 Over
The employee transmitting must say, “Over” to the employee receiving the transmission when the communication is complete and a response is expected.

S-23.5 Out
The employee transmitting must give the required identification and say, “Out” to the employee receiving the transmission when the communication is complete and no response is expected.

S-23.6 Communication Not Understood or Incomplete
An employee who does not understand a radio communication or who receives a communication that is incomplete must not act upon the communication and must treat it as if it was not sent.

Exception: An employee who receives information that may affect the safety of employees or the public or cause damage to property must take the safe course. When necessary, stop movement until the communication is understood.

S-23.7 Monitoring Radio Transmissions
Radios in attended base stations or mobile units must be turned on to the appropriate channel with the volume loud enough to receive communications. Employees attending base stations or mobile units must acknowledge all transmissions directed to the station or unit.

S-23.8 Acknowledgment
An employee receiving a radio call must acknowledge the call immediately unless doing so would interfere with safety.

S-23.9 Misuse of Radio Communications
Employees must not use radio communication to avoid complying with any rule.

S-23.10 Emergency Calls
Emergency calls will begin with the words “Emergency,” “Emergency,” “Emergency.” These calls will be used only to cover initial reports of derailments, collisions, storms, washouts, fires, track obstructions, property damage, or injury to employees or the public. Emergency calls must contain as much complete information on the incident as possible.

All employees must give absolute priority to an emergency communication. Unless they are answering or aiding the emergency call, employees must not send any communication until they are certain no interference will result.

When monitoring marine radios to allow water traffic to pass under or through railroad bridges, the words “Mayday” will be used by marine traffic for distress calls and “Pan-Pan” for urgency signals. Absolute priority is to be given over other communications when heard.
S-23.11 Prohibited Transmissions
Employees must not transmit a false emergency or an unnecessary or unidentified communication. Employees must not use indecent language over the radio. Employees must not reveal the existence, contents, or meaning of any communication (except emergency communications) to persons other than those it is intended for, or those whose duties may require knowing about it.

S-23.12 Fixed Signal Information
Employees must not use the radio to give information to a train or engine crew about the name, position, aspect, or indication displayed by a fixed signal, unless the information is given between members of the same crew or the information is needed to warn others of an emergency.

S-23.13 In Place of Hand Signals
When the radio is used instead of hand signals, information must include the direction and distance to be traveled.

Movement must stop within half of the distance specified unless additional instructions are received.

S-23.14 Transmitting Track Warrants and Track Bulletins
When transmitted by radio, track warrants and track bulletins must be transmitted according to applicable operating rules and the following:

- The train dispatcher must state that a track warrant or track bulletin will be transmitted.
- The employee must inform the train dispatcher when ready to copy. An employee operating the controls of a moving engine may not copy track warrants or track bulletins. In addition, track warrants or track bulletins must not be transmitted to the crew of a moving train if the conductor, engineer, or train dispatcher feels that the transmission could adversely affect the safe operation of the train. Within ABS territory, when train is operating on a block signal indication requiring movement at restricted speed or prepared to stop short of next signal, the train must be stopped before a track warrant extending the existing main track authority is copied.
- The employee receiving track warrants or track bulletins must copy them in writing using the format outlined in the operating rules.

S-23.15 Phonetic Alphabet
If necessary, a phonetic alphabet (Alpha, Bravo, Charlie, etc.) will be used to pronounce clearly any letter used as an initial, except initial letters of railroads.

S-23.16 Assigned Frequencies
The railroad must authorize any radio transmitters used in railroad service. Radio transmitters must operate on frequencies the Federal Communications Commission assigns the railroad. Employees are prohibited from using other transmitters or railroad frequencies not assigned to that particular territory.

S-23.17 Radio Testing
Employees must test the radios at the beginning of each shift to verify that the radios are working.

The radio test must include an exchange of voice transmissions with another radio. The test must confirm the quality of the radio’s transmission.

S-23.18 Malfunctioning Radio
Malfunctioning radios must not be used. As soon as possible, notify each crew member and the train dispatcher or other affected employees that the radio is not working.
S-23.19 Blasting Operations
Employees must not operate radio transmitters located less than 250 feet from blasting operations.

S-23.20 Internal Adjustments
Employees are prohibited from making internal adjustments to a railroad radio unless they are specifically authorized by the FCC or hold a current Certified Technicians Certificate. Employees authorized to make adjustments must carry their FCC operator license, Certified Technicians Certificate, or verification card while on duty.

S-23.21 Mobile Radio Access System (MARS)
MARS is a radio system. Employees using the system must avoid using the MARS for personal business, including:

- Phone calls home.
- Access to tape-recorded crew lineup information.

S-24.0 Signals and Their Use

S-24.2 Blue Signal Protection of Workmen
This rule outlines the requirements for protecting railroad workmen who are inspecting, testing, repairing, and servicing rolling equipment. In particular, because these tasks require the workmen to work on, under, or between rolling equipment, workmen are exposed to potential injury from moving equipment.

As used in this rule, the following definitions apply:

**Workmen.** Railroad employees assigned to inspect, test, repair, or service railroad rolling equipment or components, including brake systems. Train and yard crews are excluded, except when they perform the above work on rolling equipment not part of the train or yard movement they are handling or will handle.

- “Servicing” does not include supplying cabooses, engines, or passenger cars with items such as ice, drinking water, tools, sanitary supplies, stationery, or flagging equipment.
- “Testing” does not include an employee making visual observations while on or along side a caboose, engine, or passenger car. Also, testing does not include repositioning the activation switch or covering the photoelectric cell of the marker when the rear of the train is on the main track. The employee inspecting the marker must contact the employee controlling the engine to confirm that the train will remain secure against movement until the inspection is complete.

**Group of Workmen.** Two or more workmen of the same or different crafts who work as a unit under a common authority and communicate with each other while working.

**Rolling Equipment.** Engines, cars, and one or more engines coupled to one or more cars.

**Blue Signal.** During the day, a clearly distinguishable blue flag or light, and at night, a blue light. The blue light may be steady or flashing.

The blue signal does not need to be lighted when it is attached to the operating controls of an engine and the inside of the engine cab area is lighted enough to make the blue signal clearly distinguishable.

**Effective Locking Device.** When used in relation to a manually operated switch or a derail, a lock that can be locked or unlocked only by the craft or group of workmen applying the lock.

**Car Shop Repair Area.** One or more tracks within an area where rolling equipment testing, servicing, repairing, inspecting, or rebuilding is controlled exclusively by mechanical department personnel.

**Engine Servicing Area.** One or more tracks within an area where engine testing, servicing, repairing, inspecting, or rebuilding is controlled exclusively by mechanical department personnel.

**Switch Providing Direct Access.** A switch that if used by rolling equipment could permit the rolling equipment to couple to the equipment being protected.
A. What a Blue Signal Signifies

A blue signal signifies that workmen are on, under, or between rolling equipment and requires that:

1. Rolling equipment must not be coupled to or moved, except as provided in “Movement in Engine Servicing Area” and “Movement in Car Shop Repair Area” of this rule.
2. Rolling equipment must not pass a blue signal on a track protected by the signal.
3. Other rolling equipment must not be placed on the same track so as to block or reduce the view of the blue signal.
   a. However, rolling equipment may be placed on the same track when it is placed on designated engine servicing area tracks or car shop repair area tracks, or when a derail divides a track into separate working areas.
4. Rolling equipment must not enter a track when a blue signal is displayed at the entrance to the track.

Blue signals or remote control blue signals must be displayed for each craft or group of workmen who will work on, under, or between rolling equipment.

Protection Removed. Blue signals may be removed only by the craft or group who placed them. Remote control display may be discontinued when directed by the craft or group that requested the protection. When blue signal protection has been removed from one entrance of a double-ended track or from either end of rolling equipment on a main track, that track is no longer under blue signal protection.

B. How to Provide Protection

When workmen are on, under, or between rolling equipment and exposed to potential injury, protection must be provided as follows:

On a Main Track. A blue signal must be displayed at each end of the rolling equipment.

On Other than a Main Track. One of these three methods of protection or a combination of these methods must be provided:

1. Each manually operated switch that provides direct access must be lined against movement onto the track and secured by an effective locking device. A blue signal must be placed at or near each such switch. In addition, any facing point crossover switch must be lined against movement and secured by an effective locking device.

[Diagram A.]

2. A derail capable of restricting access to the track where work will occur must be locked in derailing position with an effective locking device and:
   a. Positioned at least 150 feet from the rolling equipment to be protected.
      or
   b. Positioned at least 50 feet from the end of rolling equipment on a designated engine servicing track or car shop repair track where speed is limited to not more than 5 MPH. A blue signal must be displayed at each derail.
3. Where remote control switches provide direct access, the employee in charge of the workmen must tell the switch operator what work will be done. The switch operator must then:
   a. Inform the employee in charge of the workmen that the switches have been lined against movement onto the track and devices controlling the switches have been secured.
   b. Not remove the locking devices unless the employee in charge of the workmen says it is safe to do so.
   c. Maintain for 15 days a written record of each notification that includes:
      • Name and craft of the employee in charge of the workmen requesting protection.
      • Identification of track involved.
      • Date and time the employee in charge of workmen is notified that protection was provided.
      • Date, time, name, and craft of the employee in charge of workmen who authorized removal of the protection.

C. Blue Signal Readily Visible to Engineer

In addition to providing protection as required in “On a Main Track” and “On Other than a Main Track,” when workmen are on, under, or between an engine or rolling equipment coupled to an engine:
   1. A blue signal must be attached to the controlling engine.
   2. A blue signal must be visible to the engineer or employee controlling the engine.
   3. The engine must not be moved.
D. Protection for Workmen Inspecting Markers
Blue signal protection must be provided for workmen when they are:
1. Replacing, repositioning, or repairing a marker, and the rear of the train is on any track.
   or
2. Inspecting a marker by repositioning the activation switch or covering the photoelectric cell, and
   the rear of the train is on other than a main track.

E. Protection for Emergency Repair Work
If a blue signal is not available for employees performing emergency repairs on, under, or between
an engine or rolling equipment coupled to an engine, the employee controlling the engine must be
notified and appropriate measures taken to provide protection for the employees.

F. Movement in Engine Servicing Area
An engine must not enter a designated engine servicing area until the blue signal protection is
removed from the entrance. The engine must stop short of coupling to another engine.

An engine must not leave a designated engine servicing area unless the blue signal is removed from
the engine and the track in the direction of movement.

Blue signal protection removed to let engines enter or leave the engine servicing area must be
restored immediately after the engine enters or clears the area.

An engine protected by blue signals may be moved on a designated engine servicing area track when:
1. An authorized employee operates the engine under the direction of the employee in charge of
   workmen.
2. The blue signal has been removed from the controlling engine to be repositioned.
3. Workmen have been warned of the movement.

G. Movement in Car Shop Repair Area
When rolling equipment on car shop repair tracks is protected by blue signals, a car mover may
reposition the equipment if:
1. Workmen have been warned of the movement.
2. An authorized employee operates the car mover under the direction of the employee in charge
   of workmen.

S-25.0 Job Tools
S-25.1 Job Safety Briefing
Who
All individuals involved in a task.

What
A two-way communication tool to ensure that every team member is alert and focused on the job, knows
what is to be done, and knows how it will be accomplished. If you see a better way to do the job or are
not confident about what you will be doing, talk about it.
Why
To ensure that the job is done right the first time: without injuries or damage, and meeting BNSF standards.

When
At the beginning of the job or at any time during the job as conditions change or new tasks are started.

Where
On the job, at the work site, in the locker room, or wherever the whole crew can get together.

How
The following elements are essential to any job safety briefing:
- Statement of job.
- Assignment of tasks and responsibilities.
- Identification of existing and potential hazards.
- Required tools, equipment, and materials.
- Necessary safeguards and procedures.
- Feedback and questions.

When participating in a job safety briefing, be sure you leave the briefing knowing the answers to these questions:
- What will be doing?
- What is the plan of attack?
- What are the hazards?
- What safeguards must be used?
- What do I do if a hazard emerges?
- What special conditions should I watch for?
- When should we stop and re-brief?

Make room for special conditions: If the job is complex enough, brief it in portions. What portions work best? What changes in job conditions require a re-briefing?

Follow up: Each person must check frequently to see that the job is proceeding according to the plan as discussed in the job safety briefing and that any hidden hazards are identified and addressed. How do we make sure everyone stays alert?
S-25.2 Stretches

Overview
Check with your physician before beginning a new exercise program, or if you have had recent joint trouble, muscle problems, or surgery.
- Don’t bounce.
- Keep the stretch mild and comfortable.
- Relax muscles as you stretch.
- BREATHE, don’t hold your breath.
- Hold your stretch until tension releases, and then go further into another mild stretch.
- You should NEVER feel pain during or after a stretch.
- Stretch before you work, before any physical exertion and periodically to relieve muscle tension.
- A good rule of thumb is to stretch every 20 to 30 minutes.
- Don’t forget to stretch both sides of the body when stretching.
- Tension for the initial stretch should release within 60 seconds. If it doesn’t, reduce the intensity of the stretch slightly.

Benefits
- Increases range of motion, reducing risk of injury near joint limits.
- Warms muscles, reduces internal friction, and “resets” discs prior to activity.
- “Pre-fuels” muscles with oxygen before activity.
- Helps muscles relax and reduces soreness after activity.
Remind people that stretching is not a competition to see who can do the most or go the farthest. People have different levels of flexibility, and we need to respect these differences in ourselves, allowing each person to experience benefits at their own pace. It took your whole life to reach the level of flexibility (or inflexibility) you now have, so you should expect benefits to be gradual as you stretch regularly over time.

Remind people to check with their physician if they have particular problems with stretching, and to do only what they feel comfortable doing in the meantime.
Back of Leg

Put one foot forward, on heel. Bend back knee slightly. Bend forward at hips with straight back. Support upper body with hands on your bent knee. Arch your back slightly. Gently move your butt straight back to put tension on the back of leg.

Using chair for support, bend at the hips and keep the three natural curves of your back. Continue to bend forward at the hips until you feel mild tension in the muscles at the back of the leg.

Front of Hip

Place one foot forward. Keep your feet parallel to each other. Do not arch your back. Rotate your butt under until you feel mild tension in the front of hip of the straight leg.

Upper Back

Cup your hands together in front of you. With elbows slightly bent, move your cupped hands down. Move your cupped hands away from your body until you feel mild tension.

Forearm

Slowly bend or extend your wrist. You can do this either with or without a gentle pull from the opposite hand. Stretch until you feel mild tension in the forearms.

Shoulder and Arm

Let your arms hang comfortably at your sides. Slowly rotate your hand and arm outward until you feel mild tension. Rotate your arm and hand in the other direction until you feel mild tension. Repeat 5 times.
Tips for People Leading Stretches

Tell everyone that we have a new stretching routine to start using. It is based on some of the stretches we have used before and has been updated to cover all the major body areas, using techniques that should be both convenient and effective. When leading group stretches, be sure no one is bouncing or using extreme twisting motions as they stretch. You may want to diplomatically provide some corrective suggestions to people you see who seem to be having trouble understanding or doing any of the stretches.

**Back of Neck**

Stretch up as tall as you can through your spine. Tuck chin into neck. Lower your chin slightly until a mild stretch is felt. Hold until tension goes away.

**Side of Neck**

Stand or sit up with “Tall” posture. Tip ear toward shoulder. Hold mild stretch until tension goes away. Keep head tipped and rotate chin down towards shoulder. Hold until tension goes away. Lower chin towards shoulder. Hold until tension goes away.

**Chest**

Slowly round your shoulders and arms forward and back. Do 5 to 10 times each. Hold mild stretch in either position until stretch releases (up to 60 seconds).

**Upper Arm and Lower Back**

Stand up tall, stretching rib cage away from hips. Stretch your elbow upwards. Hold your stretch until tension goes away. Bend SLIGHTLY to opposite side, if needed, to increase stretch.
S-25.0 Policies

S-25.1 Conflict of Interest

No officers or employees of the company may have personal interests which might conflict or appear to conflict with the interests of the company or its affiliates or which might influence or appear to influence their judgment in performing their duties. The outside activities and affairs of all officers and employees should be conducted so as to avoid loss or embarrassment to the company and its affiliates.

Employees must not engage in another business or occupation that would create a conflict of interest with their employment on the railroad or would interfere with their availability for service or the proper performance of their duties.

This policy is designed to foster a standard of conduct which reflects credit in the eyes of the public on the company, its officers, and its employees, and which protects the reputation and financial well-being of the company. There is no intent to interfere with the personal interests or activities of officers and employees.

S-26.3 Medical Examinations

The Medical Department will determine when medical examinations are necessary, the content of such examinations, and requirements for participation as the needs arise. Employees subject to these examinations must follow any and all requirements as issued.

S-26.4 Sexual Harassment

Employees on duty or on railroad property must not sexually harass others. Sexual harassment includes unwelcome sexual advances, requests for sexual favors, or other verbal or physical sexual conduct given under the following conditions:

1. An individual must submit to the conduct as a term or condition of employment.
2. If an individual submits to or rejects the conduct, that action is used to influence decisions affecting the individual’s employment.
   or
3. The conduct interferes with an individual’s work performance or creates an intimidating, hostile, or offensive work environment.

Employees who feel they have been sexually harassed must contact their manager, local Employee Relations, or Corporate Employee Relations.

S-26.6 Smoking

It is BNSF’s policy to completely prohibit smoking on all enclosed properties by employees, customers, vendors, and guests. Outdoor smoking should not interfere with non-smokers’ rights to clean air as they enter and leave buildings.

“Smoking” will mean inhaling, exhaling, carrying, or burning any lighted pipe, cigar, cigarette, or other item which emits smoke.

“Enclosed property” will mean all BNSF- owned or leased office space or buildings, shops, automobiles, rail or work equipment vehicles, locomotives, cabooses, and all other railroad rolling stock.

“Employee” will mean all exempt and scheduled employees and other persons working for BNSF as consultants, private contractors, temporary employees, or in similar capacities.

S-26.7 Telecommunication Usage

Objective

The objective of this policy statement is to provide guidance in the efficient and effective use of BNSF telecommunications systems.
Scope
This policy applies to all users of BNSF telecommunications, including, but not limited to, the BNSF network, cellular phones, 800 service, telephone calling cards, and facsimile transmissions. Contractors are considered “users” within the context of this document.

Policy

General
In order to meet the needs of our customers and minimize expense to the company, use of telecommunications services should be restricted to business communications. Personal use should be limited to necessary and urgent matters.

Telecommunications must arrange for all telephone, pager, and cellular services and equipment at all BNSF locations, as well as designate the desired providers of such services and equipment.

It is each user’s responsibility to become familiar with the various features of the BNSF telephone system, and acquire the necessary skills to obtain maximum benefit from the telephone features in the execution of their jobs. It is also the responsibility of each user to utilize the most cost-effective service available. Telecommunications must make appropriate training and documentation available to the user community to facilitate the efficient and cost-effective use of the system features.

It is the responsibility of each department to establish usage expectations and guidelines within their respective departments, as well as to monitor compliance with the guidelines. This should include monthly self-assessment within the department by evaluating reports provided by telecommunications and/or service vendors.

Telecommunications must provide department heads with summary reports and access to detailed information to assist them in governing the utilization of services.

Each user is responsible for the reimbursement of charges associated with the personal use of company telecommunications facilities. The method of reimbursement must be addressed in instructions accompanying detailed statements of charges.

It is the responsibility of each department to monitor compliance with the reimbursement provisions of this policy.

Each user is responsible for the security of the telecommunications equipment, calling cards, and passwords provided for their use. The loss of any such item should be reported to Telecommunications immediately.

Misuse of BNSF’s telecommunications system or services may result, without limitation, in termination of employment, suspension, or other disciplinary action.

Public Telephone Network and Long Distance Service
The BNSF telephone network must be used whenever possible for intra-company communications. The public telephone network should be used only when a desired location is not accessible through the BNSF network.

Calls placed through the public network are to be dialed direct. Operator assistance must be avoided whenever possible.

Directory Assistance should be used only when a listing is not available from a published directory or such a directory is not available.

Calls to “pay-per-call services” (1-900, 976-, etc.) and 1-800 calls that are charged back must not be made.

800 Service
Calls to BNSF’s various 800 numbers, while provided at no cost to the calling party, are paid for by the BNSF. Therefore, 800 numbers must not be used when calls can be placed using the BNSF network. Furthermore, local telephone numbers should be used rather than 800 numbers whenever possible.

Users provided with 800 numbers to access the BNSF network should use this service only from locations where local access to the network is not available.
Cellular Phones
All cellular phones provided by BNSF must be obtained through Telecommunications, subsequent to written department head approval. Any transfer or reassignment of company-provided cellular equipment must be handled through Telecommunications.

Each user must review the detailed statement of charges for cellular service on a monthly basis, and take action to report billing errors, unauthorized usage, and further seek to reduce service costs by optimizing use, considering business needs.

Telephone Calling Cards
Telecommunications will issue telephone calling cards to employees, subsequent to written department head approval.

Each user must review the detailed statement of calling card charges on a monthly basis and take action to report billing errors and unauthorized use to Telecommunications.

Facsimile Machines
Facsimile transmissions will utilize the BNSF network whenever possible. Programmable facsimile machines must be programmed with BNSF network numbers to maximize the economy of the network.

Telephones associated with facsimile machines must be used only for fax-related purposes.

Modems
Modems will utilize the BNSF network whenever possible. Modem communication software must be programmed with BNSF network numbers to maximize the economy of the network.

Telephones associated with modems must be used only for data communications-related purposes.

Foreign Equipment
Devices not provided by Telecommunications must not be connected to any network location without first consulting with Telecommunications.

Voice Messaging (Phone Mail)
A separate policy governing the use of the Phone Mail system is available from Telecommunications.

The Phone Mail system must not be used for business purposes not directly related to BNSF.

Each user is responsible for maintaining Phone Mail security by utilizing a unique and confidential password. Users must not attempt to gain access to mailboxes for which they are not authorized.

Pagers
All pagers provided by BNSF must be obtained through Telecommunications, subsequent to written department head approval. Any transfer or reassignment of company-provided pagers must be handled through Telecommunications.

Audio and Video Teleconferencing
Audio and Video Teleconferencing are available and may be used as an alternative to travel. The use of these services must be arranged for by Telecommunications.

S-26.8 Complete and Accurate Reporting of All Accidents, Incidents, Injuries, and Occupational Illnesses Arising from the Operation of the Railroad
The Burlington Northern Santa Fe (BNSF) Railway is committed to complete and accurate reporting of all accidents, incidents, injuries, and occupational illnesses arising from the operation of our railroad. Harassment or intimidation of any person that is calculated to discourage or prevent such person from receiving proper medical treatment or from reporting an accident, incident, injury, or illness has not and will not be permitted or tolerated.
The BNSF requires all employees to take a responsible, safe approach to their duties in safeguarding the public and corporate trust. Steps taken to enhance a sense of personal responsibility for safe work practices, including training, coaching, and counseling employees found to have engaged in unsafe work practices or rules violations, is not a violation of this Internal Control Policy (ICP).

Further, holding employees accountable, through a reasonable discipline program, for rules violations reinforces the serious nature of their actions. This good faith assessment of discipline, in compliance with the BNSF “Policy for Employee Performance Accountability,” does not violate this ICP. The BNSF Labor Relations Team should be contacted if any doubt exists about the application of the BNSF “Policy for Employee Performance Accountability.”

BNSF Safety Rules require timely reporting of all injuries and incidents. Every employee has an absolute right and obligation to report injuries and incidents to the appropriate BNSF authority. At no time shall any employee be subjected to harassment or intimidation to discourage or prevent such person from receiving proper medical treatment or from reporting an accident, incident, injury or illness. Reporting determinations are the sole purview of the BNSF Director of Reporting and Analysis.

Any employee who feels he or she has been the subject of harassment or intimidation in violation of the Corporate reporting policies is encouraged to use the Burlington Northern Santa Fe Internal Complaint Resolution Procedure without fear of harassment or reprisal. Employees who report violations of this policy will not be subject to harassment or reprisal for making the report.

Officers of the company hold a position of trust with respect to the execution of their duty to appropriately apply all company policies. Violation of that trust will be viewed as a serious breach of trust and, if such allegations are sustained through the Resolution Procedure, will constitute cause for significant penalty and possible dismissal.

**S-26.9 Equal Employment Opportunity Policy and Program**

Burlington Northern Santa Fe’s commitment to Equal Employment Opportunity and Affirmative Action is shaped by our philosophy to treat individuals with respect and dignity; maintain an atmosphere free from harassment in which every person can contribute to the maximum of his or her potential; and foster an Equal Employment Opportunity work environment. Our Affirmative Action Programs protect all groups, including Minority and Female Business Enterprises, specified by such orders and regulations and are based on applicable laws, regulations and Executive Orders prohibiting employment discrimination.

All employment decisions and personnel actions including those related to hiring, compensation, benefits, promotions, transfers, layoffs, recall from layoffs, termination’s, company-sponsored training, education, tuition assistance, and social and recreational programs shall be administered in accordance with the principle of equal employment opportunity and made solely on the basis of job-related criteria without regard to race, color, religion, sex, age, national origin, sexual preference, disability, or veteran status.

I cannot stress enough how we all must actively participate in implementing our Affirmative Action Policy and Program. All job applicants and employees need and desire an equal opportunity to demonstrate their qualifications for employment or advancement. At Burlington Northern Santa Fe, qualified minorities and females will be afforded these opportunities whenever they exist.

If there is ever any indication of non-support of this policy or failure to implement our Affirmative Action Policies, appropriate management personnel will personally intervene and initiate measures to correct any procedure or decision that is not in compliance with the purpose and spirit of this Equal Employment Opportunity Policy and Program.

The Senior Vice President, Employee Relations, is designated as the Corporate EEO Compliance Executive. It is the responsibility of each Division Superintendent and Departmental Vice President (or equivalent) to see that all aspects of our Affirmative Action Programs are implemented within their respective divisions and departments throughout Burlington Northern Santa Fe.

Signed by Robert D. Krebs
President and Chief Executive Officer
S-26.10 Vietnam Era Veterans and Disabled Veterans Policy

Burlington Northern Santa Fe's commitment to Equal Employment Opportunity and Affirmative Action is shaped by our philosophy to treat individuals with respect and dignity; maintain an atmosphere free from harassment in which every person can contribute to the maximum of his or her potential; and foster an Equal Employment Opportunity work environment. Our Affirmative Action Programs are based on applicable laws, regulations, and Executive Orders prohibiting employment discrimination. One facet of our Affirmative Action Program focuses on our concern and commitment for the qualified Vietnam Era veteran or disabled veteran employee or applicant.

All employment decisions and personnel actions including those related to hiring, compensation, benefits, promotions, transfers, layoffs, recall from layoffs, termination's, company-sponsored training, education, tuition assistance, and social and recreational programs shall be administered in accordance with the principle of equal employment opportunity and made solely on the basis of job-related criteria without regard to status as a Vietnam Era veteran or disabled veteran.

I cannot stress enough that we all must actively participate and work to implement our Affirmative Action Policy and Program. All executives, managers and supervisors should understand that we look to them for leadership and responsibility in adhering to our Equal Employment Opportunity objectives. All individuals need and desire an equal opportunity to demonstrate their qualifications for employment and advancement. At Burlington Northern Santa Fe, qualified Vietnam Era veterans and disabled veterans will be afforded these opportunities whenever they exist. Reasonable accommodations will be made when they do not create an undue hardship on our operations.

If there is ever any indication of non-support of this policy or failure to implement our Affirmative Action Policies, appropriate management personnel will personally intervene and initiate measures to correct any procedure or decision that is not in compliance with the purpose and spirit of the Equal Employment Opportunity Policy and Program.

The Senior Vice President, Employee Relations, is designated as the Corporate EEO Compliance Executive. It is the responsibility of each Division Superintendent and Departmental Vice President (or equivalent) to see that all aspects of our Affirmative Action Programs are implemented within their respective divisions and departments throughout Burlington Northern Santa Fe.

Signed by Robert D. Krebs
President and Chief Executive Officer

S-26.11 Qualified Disabled Individuals Policy

Burlington Northern Santa Fe's commitment to Equal Employment Opportunity and Affirmative Action is shaped by our philosophy to treat individuals with respect and dignity; maintain an atmosphere free from harassment in which every person can contribute to the maximum of his or her potential; and foster an Equal Employment Opportunity work environment. Our Affirmative Action Programs are based on applicable laws, regulations, and Executive Orders prohibiting employment discrimination. One facet of our Affirmative Action Program focuses on our concern and commitment for the qualified disabled employee or applicant.

All employment decisions and Human Resources actions including those related to hiring, compensation, benefits, promotions, transfers, layoffs, recall from layoffs, termination's, company-sponsored training, education, tuition assistance, and social and recreational programs shall be administered in accordance with the principle of equal employment opportunity and made solely on the basis of job-related criteria without regard to disability status.

I cannot stress enough that we all must actively participate and work to implement our Affirmative Action Policy and Program. All executives, managers and supervisors should understand that we look to them for leadership and responsibility in adhering to our Equal Employment Opportunity objectives. All individuals need and desire an equal opportunity to demonstrate their qualifications for employment and advancement. At Burlington Northern Santa Fe, qualified disabled individuals will be afforded these opportunities whenever they exist. Reasonable accommodations will be made when they do not create an undue hardship on our operations.
If there is ever any indication of non-support of this policy or failure to implement our Affirmative Action Policies, appropriate management personnel will personally intervene and initiate measures to correct any procedure or decision that is not in compliance with the purpose and spirit of this Equal Employment Opportunity Policy and Program.

The Senior Vice President, Employee Relations, is designated as the Corporate EEO Compliance Executive. It is the responsibility of each Division Superintendent and Departmental Vice President (or equivalent) to see that all aspects of our Affirmative Action Programs are implemented within their respective divisions and departments throughout Burlington Northern Santa Fe.

Signed by Robert D. Krebs
President and Chief Executive Officer

S-27.0 Programs
To learn more about when and where you can get involved in these programs, contact your supervisor or safety manager.

S-27.1 Asbestos Control
The Asbestos Control program works to provide the safe handling and eventual elimination of asbestos-containing material (ACM) at BNSF. Its elements include the identification and labeling of existing ACM, training, error-monitoring, use of specific work practices, use of the necessary equipment and materials, material substitutions using less hazardous materials, and the use of experienced ACM removal contractors.

S-27.2 Back Conservation
The Back Conservation program fosters a healthy lifestyle for BNSF people around the clock. The program's training component promotes an understanding of how the back works and of how nutrition, rest, activity, and conditioning contribute to a pain-free back. The program's quality-improvement component continually seeks, studies, and acts upon recommendations for modifications of work practices and equipment.

S-27.3 Bloodborne Pathogens Exposure Control
The Bloodborne Pathogens Exposure Control program provides information, training, equipment, safe work practices, and immunizations necessary to minimize exposure and subsequent ill effects. The intended audience is BNSF people who, by the nature of their jobs, have reasonable potential of skin, mucous membrane, or parenteral contact with blood or other potentially infectious materials.

S-27.4 Confined Space
BNSF's Confined Space program guides BNSF people who are involved in confined space activities. Confined spaces include, but are not limited to, sewers, tanks, underground utility vaults, covered hopper cars, and some pits and excavations. The program’s safe work practices and training include criteria for identifying and classifying confined spaces, the hazards of confined space work, the precautions to be taken when entering or occupying a confined space, and the maintenance and use of the instruments and equipment used to safely perform confined space work. Employees who perform confined space-related activities must maintain current status in Confined Space training.

S-27.5 Electrical Safety
The Electrical Safety program was developed for BNSF people who work with or around electrical-powered equipment or energized systems, but who are not electricians. Program content includes the fundamentals of electricity and how it affects the human body, hazardous locations, methods for preventing electrical shock, electrical safety issues specific to various facilities, and emergency procedures in case of electrical shock.
S-27.6 Exposure Assessment

Periodic employee exposure assessments are conducted by Industrial Hygiene to evaluate employees’ exposures to chemical, physical, or biological agents. These assessments are performed to determine if new materials or a change in tools or work practices increases health or safety risks. These assessments also keep employees informed about and alert to safety and health in their work environment.

S-27.7 Fall Protection

The Fall Protection program is designed to minimize the fall hazards related to work activities on bridges, buildings, towers, poles, sand towers, and other structures; work on the tops of cars and locomotives; work in manholes and utility vaults; and work areas where there are wall, roof or floor openings, pits, or trenches.

Training programs teach affected employees about manufacturers’ recommendations relating to the proper inspection, maintenance, and use of passive protective devices and fall protection equipment, applicable FRA and OSHA regulatory requirements, and BNSF requirements.

S-27.8 Forklift Safety

The Forklift Safety program stresses safety in the performance of material-handling duties, and it introduces new employees to the history and operations of material-handling equipment. The training illustrates safe operational practices as well as some of the special techniques required to maneuver and operate in a warehouse or similar environment. Special effort is made to make operators aware of the extra alertness required when operating material-handling equipment around personnel on foot and to avoid collisions with other material-handling equipment and other hazards that might be encountered.

S-27.9 Hazard Communication

The Hazard Communication program teaches BNSF people to recognize chemical hazards found at work and at home, to know the labeling requirements for containers holding chemicals and the precautionary measures they can take to avoid injury and illness. Employees also learn how to obtain and read a Material Safety Data Sheet (MSDS) which details health and safety information on chemical substances. The program includes formal training, a written policy, access to MSDS in the workplace, and container labeling.

S-27.10 Hazardous Materials Training

In accordance with Subpart H, Part 172 of Title 49, Code of Federal Regulations, hazardous materials employees must receive appropriate training every two years. Hazardous materials employees are those employees who have job functions that can either affect or be affected by the transportation of hazardous materials. Those employees who are affected by the transportation of hazardous materials must receive awareness and safety training. Those employees who handle and transport hazardous materials must receive function-specific training in addition to awareness and safety training. Hazardous materials employees employed on or before July 2, 1993, must have received training prior to October 1, 1993. Those employed after July 2, 1993, must receive the training within 90 days after employment.

S-27.11 Hearing Conservation

The Hearing Conservation program focuses on the prevention of hearing loss that could be caused by noise both on and off the job. This program has four parts: identification and assessment of on-the-job noise exposure, educational sessions on the causes of hearing loss and precautionary measures, annual audiometric evaluations, and implementation of noise control and hearing protection measures.

S-27.12 Lead Protection

The Lead Protection program provides procedures for working safely with lead-containing materials encountered when performing tasks such as welding, torch-burning, or rivet-busting on steel structures coated with lead-based paints. The program relies on employee exposure assessment to identify tasks and workers subject to lead protection requirements. The program includes annual training, protective equipment, medical surveillance, and modified work practices.
S-27.13 Lockout/Tagout (LOTO)
The LOTO program was developed to protect BNSF people from possible injury caused by sudden movement, startup, or release of energy in equipment, machinery, or systems during servicing, maintenance, or calibration. The program features BNSF’s LOTO practice, which defines requirements and helps participants develop their sight-specific Hazardous Energy Control Plan (HECP). Contact your supervisor or Safety Manager to obtain a copy of your local HECP.

S-27.14 Policy for Employee Performance Accountability
The Policy for Employee Performance Accountability replaces the Progressive Discipline Policy, Progressive Intervention, and other current discipline programs. The Policy's goal is to eliminate all rule violations through coaching, counseling, and training. The policy applies to all operating and non-operating scheduled employees, as well as those employees in Accounting, Customer Service and Support, and Information Services.

Under this policy, most rule violations will be addressed according to standard practices that reflect the employee's work record and the nature of the rule violation. Employees may be able to “work off” a portion of a suspension through training. Strict limits are placed on the amount of discipline that may be issued at each level. Supervisors must consult with the Manager of Discipline before issuing any substantial discipline. Dismissal cases are subject to review by a board of senior management representatives. Employee feedback about the Policy for Employee Performance Accountability is welcomed.

S-27.15 Respiratory Protection
The Respiratory Protection program was developed for BNSF people to prevent inhalation of airborne contaminants which could cause irritation, respiratory problems, or other illness. The program offers a selection of respiratory protection devices and provides training on each device’s effective use, limitations, and maintenance. Fit testing is provided for all devices to verify adequate seals for particular devices. Individuals required to wear respiratory protection are also evaluated medically to verify their physical fitness to use a respirator.

S-27.16 Safety Risk Evaluation
Safety Risk Evaluation is a continuous safety improvement program whose goal is to assure understanding of and commitment to safe working practices by all BNSF people. Designed for use in safety marathons or briefings and in toolbox meetings, the program presents key performance criteria on various subjects related to major craft activities. Safety Risk Evaluation can also be used in a standard training setting. Interaction among participants essential to program success. The Safety Risk Evaluation manual is available from your supervisor.

S-27.17 Temperature Extremes
BNSF’s Heat Stress Prevention program is an awareness program that outlines the signs, symptoms, and prevention methods of heat-related illnesses, such as heat stroke, heat exhaustion, heat cramps, heat fainting.

S-28.0 General Responsibilities

S-28.1 Safety
Safety is the most important element in performing duties. Obeying the rules is essential to job safety and continued employment.

S-28.1.1 Maintaining a Safe Course
In case of doubt or uncertainty, take the safe course.
S-28.1.2 Alert and Attentive
Employees must be careful to prevent injuring themselves or others. They must be alert and attentive when performing their duties and plan their work to avoid injury.

S-28.1.3 Accidents, Injuries, and Defects
Report by the first means of communication any accidents; personal injuries; defects in tracks, bridges, or signals; or any unusual condition that may affect the safe and efficient operation of the railroad. Where required, furnish a written report promptly after reporting the incident.

S-28.1.4 Condition of Equipment and Tools
Employees must check the condition of equipment and tools they use to perform their duties. Employees must not use defective equipment or tools until they are safe to use. Employees must report any defects to the proper authority.

S-28.1.5 Inspection After Derailment
After derailed equipment has been re-railed, employees must check the condition of the track to ensure that it is safe for the equipment to proceed.

S-28.2 Personal Injuries and Accidents
S-28.2.1 Care for Injured
When passengers or employees are injured, do everything possible to care for them.

S-28.2.2 Witnesses
If equipment is involved in personal injury, loss of life, or damage to property, the employee in charge must immediately secure the names, addresses, and occupations of all persons involved, including all persons at the scene when the accident occurred and those that arrived soon after. The employee in charge must secure the names regardless of whether these persons admit knowing anything about the accident.

The employee in charge must also obtain the license numbers of nearby automobiles. When necessary, other employees can assist in obtaining this information, which must be included in reports covering the incident.

Where signaling devices are provided or a flagman is on duty, the employee in charge and assisting employees must try to determine who, among the witnesses, can testify whether the signaling devices were functioning properly or if the flagman was performing his duties properly.

When possible, obtain the names of witnesses who can testify about the bell and whistle signals.

S-28.2.3 Equipment Inspection
If an accident results in personal injury or death, all tools, machinery, and other equipment involved, including the accident site, must be inspected promptly by the foreman, another person in charge of the work, or other competent inspectors. The inspector must promptly forward to his manager a report of the inspection. The report must include the condition of the equipment and the names of those making the inspection.

The person in charge must secure and maintain custody of the equipment involved, until the Claims Department is contacted and determines disposition.

S-28.2.4 Mechanical Inspection
When engines, cars, or other equipment are involved in an accident that results in personal injury or death, the equipment must be inspected before it leaves the accident site.

A mechanical department employee must further inspect the equipment at the first terminal. This employee must promptly report inspection results to the proper manager.
S-28.2.5 Reporting

A. Injuries to Employees
All cases of personal injury, while on duty or on company property, must be immediately reported to the proper manager and the prescribed form completed.

If after the initial report of an injury, employees seek medical attention for a work-related injury, they must contact the appropriate supervisor and update their status.

A personal injury that occurs while off duty that will in any way affect employee performance of duties must be reported to the proper manager as soon as possible. The injured employee must also complete the prescribed written form before returning to service.

B. Injuries to Non-employees
All injuries to non-employees (passengers, trespassers, etc.) on company property that do not result from an on-track equipment accident must be immediately reported to the proper manager and the prescribed form completed.

C. Employees with Information Concerning Injuries
Employees with information concerning an accident or injury to themselves, another employee, or a non-employee must immediately report the information to the proper manager and complete the prescribed form.

D. On-Track Equipment Accidents
All accidents (collisions, derailments, rail-highway grade crossing accidents, etc.) involving on-track equipment must be immediately reported to the proper manager and the prescribed form completed.

E. Other Accidents Involving Damage or Loss
All other accidents (theft, vandalism, company vehicle accidents, fires, etc.) involving damage or property loss that do not result from on-track equipment accidents must be immediately reported to the proper manager and the prescribed form completed.

S-28.2.6 Statements
Except when authorized by the proper manager:

- Information concerning accidents or personal injuries that occur to persons other than employees may be given only to an authorized representative of the railroad or an officer of the law.

- Information about the facts concerning the injury or death of an employee may be given only to the injured employee, an immediate relative of the injured or deceased employee, an authorized representative of the railroad, or an officer of the law.

- Information in the files or in other privileged or confidential reports of the railroad concerning accidents or personal injuries may only be given only to an authorized representative of the railroad.

S-28.2.7 Furnishing Information
Employees must not withhold information, or fail to give all the facts to those authorized to receive information regarding unusual events, accidents, personal injuries, or rule violations.

S-28.3 Rules

S-28.3.1 Rules, Regulations, and Instructions
Safety Rules. Employees must have a copy of, be familiar with, and comply with all safety rules issued in a separate book or in another form.

General Code of Operating Rules. Employees governed by these rules must have a current copy they can refer to while on duty.
Hazardous Materials. Employees who in any way handle hazardous materials must have a copy of the instructions or regulations for handling these materials. Employees must be familiar with and comply with these instructions or regulations.

Air Brakes. Employees whose duties are affected by air brake operation must have a copy of the rules and instructions for operating air brakes and train handling. Employees must know and obey these rules and instructions.

Timetable/Special Instructions. Employees whose duties are affected by the timetable/special instructions must have a current copy they can refer to while on duty.

Train Dispatchers and Control Operators. The train dispatchers and control operators must have a copy of the rules and instructions for train dispatchers and control operators. They must be familiar with and obey those rules and instructions.

Classes. Employees must be familiar with and obey all rules, regulations, and instructions and must attend required classes. They must pass the required examinations.

Explanation. Employees must ask their supervisor for an explanation of any rule, regulation, or instruction they are unsure of.

Issued, Cancelled, or Modified. Mechanical Safety Rules may be issued, cancelled or modified by Mechanical Bulletin.

S-28.4 Carrying Out Rules and Reporting Violations
Employees must cooperate and assist in carrying out the rules and instructions. They must promptly report any violations to the proper supervisor. They must also report any condition or practice that may threaten the safety of trains, passengers, or employees, and any misconduct or negligence that may affect the interest of the railroad.

S-28.5 Drugs and Alcohol
The use or possession of alcoholic beverages while on duty or on company property is prohibited. Employees must not have any measurable alcohol in their breath or in their bodily fluids when reporting for duty, while on duty, or while on company property.

The use or possession of intoxicants, over-the-counter or prescription drugs, narcotics, controlled substances, or medication that may adversely affect safe performance is prohibited while on duty or on company property, except medication that is permitted by a medical practitioner and used as prescribed. Employees must not have any prohibited substances in their bodily fluids when reporting for duty, while on duty, or while on company property.

S-28.6 Conduct
Employees must not be:
1. Careless of the safety of themselves or others.
2. Negligent.
3. Insubordinate.
4. Dishonest.
5. Immoral.
6. Quarrelsome.
   or
7. Discourteous.

S-28.6.1 Suitable Language
Employees on duty must refrain from using boisterous, profane, sexist, or vulgar language.
S-28.7 Altercations
Employees must not enter into altercations with each other, play practical jokes, or wrestle while on duty or on railroad property.

S-28.8 Appearance
Employees reporting for duty must be clean and neat. They must wear the prescribed uniform when required.

S-28.9 Respect of Railroad Company
Employees must behave in such a way that the railroad will not be criticized for their actions.

S-28.10 Games, Reading, or Electronic Devices
Unless permitted by the railroad, employees on duty, must not:
- Play games.
- Read magazines, newspapers, or other literature not related to their duties.
  or
- Use electronic devices not related to their duties.

S-28.11 Sleeping
Employees must not sleep while on duty. Employees reclined with their eyes closed will be in violation of this rule.

S-28.12 Weapons
While on duty or on railroad property, employees must not have firearms or other deadly weapons, including knives with a blade longer than 3 inches. Employees may possess these weapons only if they are authorized to use them to perform their duties, or if they are given special permission by the designated manager.

S-28.13 Reporting and Complying with Instructions
Employees will report to and comply with instructions from supervisors who have the proper jurisdiction. Employees will comply with instructions issued by managers of various departments when the instructions apply to their duties.

S-28.14 Duty—Reporting or Absence
Employees must report for duty at the designated time and place with the necessary equipment to perform their duties. They must spend their time on duty working only for the railroad. Employees must not leave their assignment, exchange duties, or allow others to fill their assignment without proper authority.

Employees must not be absent from duty without proper authority. Except for a scheduled vacation period, authorized absence in excess of ten (10) calendar days must be authorized by formal leave of absence, unless current agreement differs.

S-28.15 Subject to Call
Employees subject to call must indicate where they can be reached and must not be absent from their calling place without notifying those required to call them.

S-28.16 Hours of Service Law
Employees must be familiar and comply with the requirements of the federal hours of service law. Employees are expected to use off-duty time so they are prepared for work.
If an employee is called to report for duty before legal off-duty time has expired, before accepting the call to work, the employee must notify the individual making the call that off-duty time has not expired.

A. Notification

When communication is available, employees must notify the train dispatcher or another authority of the time the law requires them to be off duty. Employees must provide notification early enough that they may be relieved, or transportation provided, before they exceed the hours of service.

B. Exceeding the Law

Employees must not exceed the hours of service law without proper authority. However, they must not leave trains, engines, or cars on the main track without proper protection. Employees must secure trains properly and, if possible, before they exceed the hours of service. Except as provided by this paragraph, employees are then relieved of all duties.

S-28.17 Unauthorized Employment

Employees must not engage in another business or occupation that would create a conflict of interest with their employment on the railroad or would interfere with their availability for service or the proper performance of their duties.

S-28.18 Care of Property

Employees are responsible for properly using and caring for railroad property. Employees must return the property when the proper authority requests them to do so. Employees must not use railroad property for their personal use.

S-28.18.1 Company Vehicles

Drivers of company vehicles must:

1. Unless authorized, must not use company vehicles for personal business or for commuting to or from a personal residence.

2. Not install or carry radio receivers or other accessories or appliances in the company vehicle without the proper authority.

S-28.19 Alert to Train Movement

Employees must expect the movement of trains, engines, cars, or other movable equipment at any time, on any track, and in either direction.

Employees must not stand on the track in front of an approaching engine, car, or other moving equipment.

Employees must be aware of location of structures or obstructions where clearances are close.

S-28.20 Occupying Roof

Employees whose duties require them to occupy the roof of a car or engine must do so only with proper authority and when the equipment is standing.

S-28.21 Not Permitted on Equipment

Unauthorized persons must not be permitted on equipment.

S-28.21.1 Unauthorized People

When an employee sees someone who should not be on BNSF property, the employee should notify the railroad police or railroad supervisor.
S-28.22 Altering Equipment
Without proper authority, employees must not alter, nullify, change the design of, or in any manner restrict or interfere with the normal function of any device or equipment on engines, cars, or other railroad property, except in the case of an emergency. Employees must report to the proper supervisor changes made in an emergency.

S-28.23 Clean Property
Railroad property must be kept in a clean, orderly, and safe condition. Railroad buildings, facilities, or equipment must not be damaged or defaced. Only information authorized by the proper manager or required by law may be posted on railroad property.

S-28.23.1 Avoid Littering
Do not throw articles from any of the following:
- Locomotives
- Cars
- Moving equipment
- Company motor vehicles
- Doors and windows of buildings

S-28.24 Credit or Property
Unless specifically authorized, employees must not use the railroad's credit and must not receive or pay out money on the railroad account. Employees must not sell or in any way get rid of railroad property without proper authority. Employees must care for all articles of value found on railroad property and promptly report the articles to the proper authority.

S-28.24.1 Proper Use of Postage
Employees may not use company postage for personal mail.

S-28.25 Gratuities
Employees must not discriminate among railroad customers. Employees must not accept gifts or rewards from customers, suppliers, or contractors of the railroad unless authorized by the proper manager.

S-28.26 Divulging Information
Employees who make up, handle, or care for any of the following must not allow an unauthorized person to access them or disclose any information contained in them:
- Correspondence
- Reports
- Books
- Bills of Lading
- Waybills
- Tickets
- Statistics
- Electronic mail
- Any document marked as "Confidential"

Employees are to ensure that data on the company’s financial performance and documentation supporting transactions are kept confidential.
S-28.26.1 Requirements for Disclosing Company Information

A. Definition of Company Information
   Company information consists of all information concerning the company and its employees, customers and suppliers.

B. Proper Disclosure
   Company information belongs solely to the company and is considered confidential. Employees may disclose company information externally only for legitimate business purposes and only if the supervisor approves. Employees must use the normal authorization channels to disclose company business.

   Without proper authorization, employees must not:
   - Access, use, retain, modify, or distribute company information.
   - Use company computing and telecommunications equipment.

   Unauthorized users of company equipment or information may receive disciplinary or legal action.

S-28.26.2 Monitoring of Company Information
   Without notifying the user, BNSF may at any time monitor or record access to company information or computing and telecommunications equipment.

   Any information electronically collected, stored, processed, or transmitted on company computing and telecommunications equipment is the property of BNSF. BNSF may at any time monitor or record such information on BNSF equipment.

S-28.27 Fire
   Employees must take every precaution to prevent loss and damage by fire.

   Employees must report promptly to the train dispatcher any fires seen on or near the right of way, unless the fires are being controlled. If there is danger of the fire spreading to a bridge or other structure, crew members must stop their train and help extinguish the fire.

   Cause of fire, if known, must be promptly reported.

S-28.61 Encroachment
   Encroachment on railroad property, including building occupancy or the unauthorized dumping or storage of material, is prohibited.

   When observing outside parties performing work that may encroach on the right-of-way, report the location and the nature of work to the proper authority.

S-28.61.1 Authorized on Railroad Property
   Persons must be authorized to be on railroad property, which includes:
   - Buildings.
   - Facilities.
   - Repair tracks.
   - Team tracks.
   - Other railroad property.

   Persons authorized to be on railroad property must wear protective equipment where required.
S-28.62 Legal Summons

A. Requirement to Report Summons to Proper Authority

If an employee receives a summons, complaint, or any other legal papers that references the business of Burlington Northern Santa Fe or any of its subsidiaries, that person must immediately contact all of the following:

- The appropriate General Claims Department Manager for the area where the action originated.
- Vice-President Law.

B. Contents of Report

When contacting the above individuals, the person who received the legal papers must:

1. Submit a written report with the following information:
   a. Names of people involved in the action.
   b. Court where the action is filed.
   c. Brief statement of the case, when possible.

2. Mail the legal papers immediately to the Law Department and include his or her name, title, and date and time of service.

S-40.0 Glossary

As used in this book, the following definitions apply.

**accident:** An unplanned and sometimes injury-causing or damaging event which interrupts the normal progress of an activity.

**air brake hose:** The flexible connection between the brake pipes of cars or locomotives.

**angle cock:** A two-position valve located at both ends of the brake pipe on locomotives, passenger and freight cars. When open, it allows the passage of air.

**approved:** 1. Sanctioned, endorsed, accredited, certified, or accepted as satisfactory by a duly constituted and nationally recognized authority or agency. 2. Acceptable according to BNSF policy.

**arc gate:** Device that controls the flow of taconite onto the shuttle conveyor.

**Asbestos-Containing Material (ACM):** Any material that contains asbestos.

**authorized:** A person who is approved or assigned by BNSF to perform a specific type of duty or duties or to be at a specific location(s) at the job site.

**bad order:** Equipment that is in need of repair.

**banding:** Strap or straps used to secure material.

**capacity:** The allowable load limit for any lifting or storing device as determined by the manufacturer, regulation, or both.

**carboy:** A bottle or rectangular container of about 5- to 15- gallon capacity for liquids. Carboys are made of glass, plastic, or metal, and are cushioned in a special container.

**center sill:** The center longitudinal part of the under frame of a car which forms the backbone of the under frame and transmits most of the buffing shocks from one end of the car to the other.

**certified:** Has met the requirements of federal, state, or local laws, or of company-approved programs, and has been granted a certificate.

**chock:** A device placed on the rail to prevent movement of stationary rolling equipment.

**compliance:** The act of obeying the rule or the law.
**conductive material**: Material that carries an electric current, including but not limited to copper and other metals and water.

**conveyor belt**: The moving rubber belt that transports taconite through the Taconite Facility.

**coupler**: An appliance for connecting cars or locomotives.

**coupler webbing**: The side pocket on a coupler that the end of train device mounts into.

**crossover stile**: A fixed platform that workers use to cross over conveyor belt.

**cushioned under frame**: The framework of a railway car which is designed to prevent the shocks and impact stresses from damaging the car structure or its lading.

**derail**: A track safety device designed to guide a car off the rails at a selected spot as a means of protection against collisions or other accidents; commonly used on spurs or sidings to prevent cars from fouling the main track.

**designated**: A person who is approved or assigned by BNSF to perform a specific type of duty or duties or to be at a specific location(s) at the job site (same meaning as “authorized”).

**drift pin**: A tapered steel pin, 12” to 18” in length, used by MOW to align bolt holes at rail joints. Drift pins are available in many sizes for various other applications.

**dust collector**: A bag house system for controlling emissions.

**End-of-Train Telemetry Device (ETD)**: A system of components that determines the rear car brake pipe pressure and transmits that information to the display on the head-of-train telemetry device (HTD).

**enhanced-visibility work wear**: Personal protective clothing that is either accented with or constructed entirely in reflective lime green, yellow, or orange material.

**environment**: The water, air, land, and all plants, humans, and animals living therein, and the inter-relationships which exist among them.

**fall protection**: Safety equipment designed to prevent falls and minimize injury in the case of falls.

**frog**: A track structure used at the intersection of two running rails to provide support for wheels and passageways for their flanges, thus permitting wheels on either rail to cross to the other.

**fusee**: A red flare used for flagging purposes.

**Gai-tronics**: The Taconite Facility intercom system.

**grates**: The area in the Index where cars are unloaded.

**gravity switch move**: A switching maneuver whereby gravity causes a stationary car to roll when the hand brake is released rather than being propelled by an engine.

**hand brake**: An assortment of levers, chains, rods, and gears. When applied manually by wheel or lever, the hand brake forces the brake shoes against the braking surfaces (wheel tread or disc) to control car or locomotive movement.

**hand truck**: A small, rectangular barrow with a pair of handles at one end, a pair of small, heavy wheels at the other, and a projecting edge to slide under a load.

**hazardous material**: A substance or material which is capable of posing an unreasonable risk to health, safety, and the environment.

**impact goggles**: Safety eye wear that meets ANSI Z87.1 specifications.

**improvised**: Created out of the conditions or materials at hand.

**incident**: An undesired event that, under slightly different circumstances, could have resulted in personal harm or property damage. Any undesired loss of resources. Sometimes referred to as a “near miss,” such as when a collision is avoided.

**inspect**: To examine officially in a critical, detailed manner.

**intoxicants**: Mind-altering chemicals including alcohol and drugs. Can also include some prescription and over-the-counter (OTC) medications.
job safety briefing: A communication tool used by professionals to make sure that everyone involved in a task knows what is to be done, how the task is to be accomplished, and how to mentally prepare to accomplish it. Job safety briefings must be conducted before beginning work activities and whenever there is a change in conditions or work activity.

knuckle: The pivoting casting that fits into the head of a coupler to engage a mating coupler.

leading foot: When riding on the side of moving equipment, the foot on same side as direction of movement.

Lockout/Tagout (LOTO): Procedures that involve tagging and locking systems so that no one can inadvertently activate the circuit, system, or equipment that is temporarily out of service.

marker: See End-of-Train Telemetry Device.

Material Safety Data Sheet (MSDS): A form, provided by the manufacturer or supplier, describing the chemical and physical hazards of a substance.

motor vehicle: A motor-driven conveyance primarily designed for operation other than on rail. Some motor vehicles, such as hy-rails, are also equipped to operate on rail.

M/X equipment: Bucket wheels and transfer conveyors.

operator: The person who “runs” and so must maintain control of mechanized equipment or a motor vehicle.

pawl: A pivoted tongue or sliding bolt on one part of a machine that is adapted to fall into notches or interdental spaces on another part so as to permit motion in only one direction.

Personal Protective Equipment (PPE): Any material or device worn to protect a person from exposure to or contact with any harmful substance or force.

positioner: A machine used to position cars over the grates in the Index (at the Taconite facility).

Potential Asbestos-Containing Material (PACM): A material not yet tested for asbestos content, but, on visual inspection, similar to materials known to contain asbestos. Contact Industrial Hygiene for guidance on testing PACM.

proper authority: (1) Those individuals who are qualified by virtue of their expertise or their position of leadership to approve, certify, or sanction. (2) Having secured approval for acting in a particular manner.

qualified: A person who, by possession of a recognized degree, certificate, or professional standing, or who by knowledge, training, and experience, has successfully demonstrated his/her ability to perform the task or solve or resolve problems relating to the subject matter, the work, or the project.

rail expander: Hydraulic- or ratchet-type tool used to pull rails together or to separate them.

rail fork: A long-handled tool with three jaws at one end used for rolling a rail.

reclaiming: Picking up taconite from a stockpile and placing it on the conveyor belt.

rope stop: A protection system that runs the length of the conveyor system. When pulled, it shuts down the conveyor belt.

shuttle: The movable conveyor belt located on the shiploader.

skate: A metal skid placed on the rail to stop the movement of rolling equipment.

sledge hammer (Mundy): A long-handed hammer with a double-faced head used to strike other tools such as a track chisel and a rail drift pin and to install or remove rail anchors.

three-point contact: Bodily contact consisting of two hands and one foot or two feet and one hand.

tie and timber tongs: Steel tongs designed for use handling rail ties and crossing timbers.

tie plate: Metal plate installed between the rail and cross tie to distribute the weight over a greater area of the tie.

torpedo: Explosive device placed on the rail.

trained: Has participated in learning event(s) appropriate to the topic. Learning events include, but are not limited to, one-on-one coaching on the job, job safety briefings, tool box or marathon meetings, and formal programs.

trailing foot: When riding on the side of moving equipment, the foot on the opposite side from the direction of
movement.

**transport:** The movement of goods and materials in commerce.

**unauthorized modification:** Improper use of tools and/or equipment for the job task. Unauthorized modifications include actual physical alteration of tools or equipment and use of tools or equipment for other than their intended purpose.

**universal hose and pipe coupling:** A fitting which permits quick connecting and disconnecting of hose-to-hose, hose-to-pipe, and hose-to-tool.

**unsafe condition:** Any physical state which results in a reduction in the degree of safety normally present in an activity.

**witness:** An individual who has, from personal observation, knowledge of an event.

**work environment:** The physical location, equipment, materials processed or used, and the kinds of operations performed in the course of an individual’s work, whether on or off the company’s premises.
M-1.0 **Blue Signal**

M-1.1 **Use of ID Tags**

**Information on I.D. Tags**

All employees required to work on, under, or between locomotives, including fueling and servicing, are required to have I.D. tags with their name and craft displayed. The I.D. tag may also include the employee's photograph, but it is not required.

**Applying I.D. Tags**

Each employee working on, under, or between locomotives shall attach their I.D. Tag to the Blue Signal of the locomotive they are working. The I.D. tag must be applied to any part of the Blue Signal visible from the ground on the engineer's side of the locomotive.

**Removing I.D. Tags**

When the employees complete their task(s) on the locomotive, they must each remove their own I.D. tag. The last employee working on the locomotive will also remove the blue signal after checking to be certain no other employees are on, under, or between the equipment.

M-1.2 **Flagging Controlling Locomotives**

Whenever two or more locomotives are coupled together, but are not connected by the MU cable or air hoses, a blue signal is to be applied to each locomotive prior to any work beginning. All locomotives in this status are to be considered controlling locomotives, whether they are running or not. Blue signals must be positioned in such a manner that they will be observed by a person sitting in the engineer's seat looking directly forward through the front windshield, and by anyone observing this locomotive from ground level on the engineer's side.

The intermediate locomotives may be protected by placing a magnetic blue light or small blue flag on the control stand, or by hanging a blue plastic donut-shaped tag over the throttle handle, with the engineer's light illuminated. *The tags must be marked “blue flag.”*

If the consist is MU'd with electrical and air, a blue signal must be attached to the controlling locomotive and be clearly visible to the engineer or employee controlling the unit.

M-1.3 **Derails on Service Tracks and at Shops**

A facility that engages in servicing and maintaining cars and locomotives must protect the tracks in which this activity occurs by the following means:

A derail with an effective locking device, or a switch that has been lined (so that movement cannot be made into the track where work will be performed) and locked to prevent movement of the handle. This procedure must be in place at both ends of the track prior to commencing work. A blue signal must be attached to each derail as well as at or near each locked switch.

This does not include those tracks in which consists are being made up, main line fueling facilities or yard tracks that are protected by existing means and in compliance with FRA standards.

**Derail Protection for Shops**

In addition, each track entering a shop must be protected by a derail capable of restricting access to the track where work will occur. The derail must be locked in the derailing position with an effective locking device and positioned at least 50 feet from the shop door. A blue signal must be displayed at each derail.

M-1.4 **Entering a Derailed Track**

An engine or engines must not enter a track that has been locked out or that is protected by a derail:

1. Before permission is granted to remove blue signal protection, all employees who are working in that track or length of track that the protection has been provided for are:
   a. Notified that the protection is going to be removed.
   b. In the clear of the locomotives and track.
2. Employees in charge of the movement must make an effective audible warning and continuous use of the locomotive crossing bell while the movement is being made.

M-1.5 Effective Warning System for Locomotive Movement
An effective warning system (i.e. rotating flashing lights, effective audible alarm or horn) is required in shop or repair facilities to warn employees of movements being made.

M-1.6 Daytime Use of Blue Lights
A blue flashlight or portable magnetic base light at or near the locked switch or derail during daylight hours is generally not distinguishable to engineers or hostlers.
Acceptable portable blue signals during daylight hours are blue flags or signs of sufficient size to make them distinguishable to engineers or hostlers.

M-1.7 Blue Signal Protection for Remotely Controlled Locomotives (RCLs)
This Blue Signal Protection applies for RCL attached to a cut of cars or left standing on a track with a cut of cars. The following steps must be performed in the order listed below:
1. Prior to flagging the locomotive to work the track or on the locomotive, a worker must climb up the Remotely Controlled Locomotive and observe the position of the Changeover Switch indicating Manual or BeltPack.
   - The switch itself will be found in Road Switch Engines in one of the following areas:
     - The nose of the short hood.
     - In the cab of the locomotive.
     - In the Cabless Switch Engine it will be in the area where the cab would be on a locomotive.
   - In Yard Switch Engines it will be located in the cab.
2. The switch should be in the MANUAL POSITION.
3. If the switch is not in the MANUAL POSITION, get off the locomotive and contact your supervisor immediately for assistance. The Supervisor will need to contact the Operating Department for placement of the switch to Manual.
4. Once the switch is in the Manual Position, a magnetic blue light or donut-shaped tag must be placed on the Changeover Switch panel in accordance with Mechanical Policy Letter IF-020812.
5. After completion of these items, apply Blue Signal Protection in accordance to BNSF Mechanical Safety Rules and Policies S-24.2.

M-1.8 Blue Signal Protection for Distributive Power Units (DP Power)
When trains are set up with Distributive Power Units (DP), Blue Signal Protection is required on the DP Lead Locomotive of the head-end consist. Blue Signal Protection is also required on the DP Remote locomotive in the Remote consist(s) in the train before work may begin. Individual I.D. Tags are to be placed on the Blue Signal of the consist that is being worked.

M-2.0 Personal Protective Equipment
M-2.1 Use of Goggles
Employees are to wear goggles when performing overhead work in areas where loose material or particles are a hazard or when flying dust or particles are created. When working under cars, goggles or a faceshield over safety glasses are required.

M-2.2 Reflective Wear on Service Tracks
All employees are to wear a reflective vest or belt at service tracks.
M-2.3 **High-Voltage Protective Gloves**
Gloves will be tested every six months per OSHA (29 CFR 1910.137, Table 1-6).

M-2.4 **Use of Gloves with Chain Saws**
When sharpening chain saw blades, use the proper chain saw file and wear cut-resistant gloves.

M-2.5 **Eye and Face Protection for Equipment and Machinery**
Wear a minimum of splash goggles when servicing or repairing systems (i.e.- piping, tanks, hoses) containing liquid that may result in exposure to a release of the contents of that system. For severe exposure, such as repairing/servicing systems that contain contents at extreme temperatures, corrosives, or toxic materials, the employee must wear a faceshield over splash goggles.

**Exception:** Additional eye protection would not be required if specific task has engineering controls or other safeguards to control risk from inadvertent contact.

M-3.0 **Work Process**

M-3.1 **Use of Crossing Ramps on Locomotives in Shop**
Crossing ramps must be installed to bridge the gap between locomotives and shop ramps if they are used to access the locomotive.

M-3.2 **Mount and Dismount Locomotives**
Mount and dismount locomotives by utilizing the crossover ramps positioned in the stairwell of the locomotive. When obstacles on the running board, such as tools and equipment, open doors, etc. create a slip, trip or fall hazard, employees may mount or dismount the locomotive by climbing under the locomotive handrail, provided the following precautions are taken:

1. Never attempt to mount/dismount a locomotive underneath a handrail with tools or other objects in your hands. Maintain three points of contact.
2. Never climb over a handrail.
3. Before getting on or off a locomotive underneath a handrail, check the gap between the locomotive and the ramp walkway. If you feel that the gap is too wide for you to safely cross, do not proceed.
4. Choose a path that is uncluttered by tools or other materials.

M-3.3 **GE-8/-9 Locomotive Startup Procedure**
While cranking the engine, if a power contactor fails in the closed position, the locomotive may move. Handbrakes must be set and employees clear of the undercarriage prior to starting. Check for closed power contactor prior to starting.

M-3.4 **Locomotive Tagout Procedures**
This procedure is to protect you and others from the inadvertent release of stored energy while working on locomotives. Never remove a tag placed on a locomotive by another individual.

Tagout devices, along with tags and nylon wire ties, will be distributed throughout the shop, service facility and the maintenance building.

To prevent the diesel engine from turning over or to de-energize the electrical circuits:

1. Notify others working on the locomotive.
2. Open the battery switch. (Not all low voltage circuits are de-energized by opening the battery switch. Use a meter to determine that voltage is not present. If voltage is present on the circuit, use a schematic to determine how to disable the circuit.)
3. Apply a tagout device to one leg of the battery switch.

4. Apply a tag with your name on it to the device. (This tag will be notification to everyone that you are working on the locomotive.)

5. When finished working on the locomotive, remove the tag. If your tag is the last tag to be removed, remove the tagout device and restore the circuit.

REMEMBER THE MOVABLE SIDE OF THE BATTERY SWITCH DOES NOT HAVE BATTERY VOLTAGE ACROSS IT WHEN THE SWITCH IS OPEN. NEVER APPLY A TAGOUT DEVICE ON A BATTERY SWITCH THAT IS NOT OPEN.

To leave the battery switch in and disable the starting circuit while working on the locomotive:

1. Notify others working on the locomotive.

2. Remove the starting fuse. (On locomotives without a starting fuse, use non-conductive wedges to block the starting contactors in the open position. Apply your tag to the isolation switch.)

3. Apply one of the yellow blank “fuses” in the starting fuse position.

4. Apply a tag out device to the blank “fuse.”

5. Apply a tag with your name on it to the device. (This tag will be notification to everyone that you are working on the locomotive.)

6. When finished working on the locomotive, remove the tag. If your tag is the last tag to be removed, remove the tagout device, the blank “fuse” or the wedges.

M-3.5 Working on Top of Locomotives and Cars

The following policy applies to all Mechanical employees who work on top of locomotives and cars:

Employees must contact their supervisor or lead person prior to performing work on top of the subject equipment. The supervisor is required to give the employee(s) a specific job safety briefing. The supervisor must make the employee aware and caution them of the hazards. The supervisor must give the employees permission and confirm what task is to be done and what procedure will be used by the employee.

Each individual must observe for oily, icy, or slipper conditions and review the safety aspects of the work for any conditions that might create loss of balance or use of force.

Each individual must use tools or equipment defensively, to avoid loss of balance if tool were to slip or disengage. Avoid over-reaching while working.

Where possible, work in a kneeling or seated position.

Access to locomotive roof must be from the rear end only or with approved ladder/platform from nose to cab roof.

M-3.6 Air Box Work on Locomotives

When working inside any locomotive air box, the edge must be covered by protective rubber molding to eliminate possible lacerations.

M-3.7 Cut Out Locomotive Air Horns

Cut out horn before working on short hood end of locomotive or any time work is performed in vicinity of the horn.

M-3.8 Hot Work on Fuel Tanks Policy

Hot work will not be performed on any tank which contains, or had contained flammable or combustible liquid, without first ensuring that steps are taken to eliminate the presence of a flammable or explosive fuel-air mixture. No work will be done on tanks still containing fuel.
M-4.0 Facility

M-4.1 Precaution With Roll-Up Doors
Employees or equipment shall not pass under roll-up doors until they have come to a complete stop in the fully retracted position.

M-4.2 Chain Hoist (Come-Alongs) Inspection Program

Frequent Inspections
Visual inspections are required prior to and during each use. Items that must be inspected include the handle, hooks, and load chain.

Periodic Inspections
Periodic inspections must be performed on a semiannual basis.
If any defects or deficiencies are found, the hoist must be removed from service and repaired or replaced.

M-5.0 General Policies

M-5.1 Mandatory Stretching Prior to Work
All mechanical locations are to implement mandatory stretching for all employees and managers prior to start of shift. Stretches must be performed as outlined in BNSF Stretching Poster.

M-5.2 Using a Tank Car as a Crossover Platform
It is prohibited for an employee to use a tank car as a crossover platform. When necessary to get on a tank car for the purpose of making repairs, all safety appliances, i.e. sill steps, hand holds etc., must be checked to insure safe condition for use. Getting on a tank car to make repairs does not include using the tank car for a crossover platform to the other side to work on trucks or other running gear components. It applies only if standing on car is necessary to make repairs or inspection.

M-5.3 Lightning Protection Guidelines
When employees are working outside, work should be suspended whenever lightning is striking within 3 miles or closer. Work should not be resumed until after lightning has passed area and beyond 3 miles for at least 5 minutes.

NOTE: Calculate lightning distance as follows:
For every 5 seconds from the time of seeing the lightning flash to hearing the associated thunder, the lightning is one mile away.

M-6.0 Tools and Equipment

M-6.1 Punches and Chisels
When punches or chisels are used, a tool holder must be used along with the appropriate gloves.

M-6.2 Knife Policy
All Mechanical/P&M employees must complete a knife training course. Only knives approved and provided by the BNSF may be used in the workplace. (Personal pocket knives are not allowed.)
Under no circumstances are knives to be used to strip insulation from electrical wire including traction motor leads and traction motor boots. In addition, knives are not to be used for cutting rubber or plastic hose.
Before beginning any task which requires the use of a knife, employees must complete a job briefing with their supervisor or leadperson. The briefing must include a discussion of the general procedure plan, existing or potential hazards, and way to eliminate or protect against those hazards, i.e. PPE such as gloves and/or sleeves, body positioning and possible alternatives to the use of a knife. Knives must not be used for tasks in which there is a specialty tool available.

This policy supersedes the previous Knife Policy.

**M-6.3 Leatherman Prohibition**

The use of the subject tool or similar multipurpose tools by mechanical and P&M personnel is prohibited. Such tools are not designed for industrial use and are not approved.

**M-6.5 MU Cable Receptacle Lid Holder**

A positive means of holding the lid open on the M.U. receptacle must be used when connecting or disconnecting.

**M-6.7 Folding and Four-Point Office Chairs**

Remove all four-point, pedestal type chairs with casters, from service and replace with five-point base chairs. Restrict folding chairs to office/lunch room environments, and inspect regularly.

**M-7.0 MW Protection Within Car Shop, Repair or Engine Servicing Areas**

When maintenance is performed on tracks within Car Shop, Repair or Engine Servicing Areas, roadway workers must make the working limits inaccessible as indicated in the MWOR. Before establishing working limits the roadway worker in charge must conduct a job briefing with the mechanical employee in charge of the Car Shop, Repair or Engine Servicing Area. When locomotives, cars or motorized on-track equipment are on the track where working limits will be established, the roadway worker in charge and the mechanical employee in charge must jointly establish safeguards to protect the working limits against other movements. The roadway worker in charge must notify the mechanical employee in charge when work is completed and working limits have been cleared.