

## 30 CFR § 48.27(a) Task Training for Atmospheric Monitoring System (AMS) Operators (Suggested Outline)

SUBJECT	OBJECTIVES	TEACHING METHODS	COURSE MATERIAL	EVALUATION METHODS
<p>Familiarity with Underground Mining Systems Used at the Mine (General Overview of Topics)</p>	<p>The AMS operator/trainee will demonstrate a working knowledge of underground mining systems used at their mine (cover topics in the context of the AMS operator's duties):</p> <ul style="list-style-type: none"> <li>• Discuss underground belt haulage and ventilation system in use at the mine.</li> <li>• Identify and discuss underground electrical installations in use at the mine.</li> <li>• Describe and discuss fire protection systems in use at the mine.</li> <li>• Describe and discuss the mine's two-way communication and tracking systems.</li> </ul>	<p>Demonstration Discussion Q&amp;A OJT</p>	<p>"AMS Operator's Training Guide" 30 CFR Part 75 Mine Maps/Schematics Other Applicable Mine-Specific Plans and/or Work Procedures</p>	<p>Verbal Responses  Discussion  Demonstration</p>
<p>Mine Ventilation System Used at the Mine</p>	<p>The AMS operator/trainee will demonstrate a thorough working knowledge of the mine's ventilation system:</p> <ul style="list-style-type: none"> <li>• Discuss the mine's ventilation plan.</li> <li>• Discuss/describe the type of ventilation system used at the mine.</li> <li>• Discuss/describe planned air directions.</li> <li>• Identify and discuss ventilation controls in use at the mine.</li> <li>• Discuss belt-air course ventilation.</li> <li>• Discuss minimum and maximum air velocity requirements, based on the mine's approved ventilation plan.</li> <li>• Locate all designated escapeways at the mine.</li> </ul>	<p>Demonstration Discussion Q&amp;A OJT</p>	<p>"AMS Operator's Training Guide" 30 CFR Part 75 Subpart D – Ventilation (applicable sections) The Mine's AMS Approved Ventilation Plan Mine Ventilation Map/Schematics Mine Maps/Schematics (showing air directions, working sections, and escapeways) Other Applicable Mine-Specific Plans and/or Work Procedures</p>	<p>Verbal Responses  Discussion  Demonstration  <b>NOTE:</b> Where applicable, skills demonstration should include operation of the AMS console and graphic displays.</p>

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<p>The Mine's Emergency Evacuation and Firefighting Program of Instruction</p>	<p>The AMS operator/trainee will demonstrate a thorough working knowledge of the mine's emergency evacuation and firefighting program of instruction:</p> <ul style="list-style-type: none"> <li>• Discuss the mine's ERP.</li> <li>• Identify the mine's responsible person(s).</li> <li>• Discuss/describe the mine's procedures for an emergency evacuation.</li> <li>• Locate the mine's escapeways, exits, and routes of travel to the surface.</li> <li>• Locate the mine's emergency shelters/refuge alternatives.</li> <li>• Locate the mine's firefighting equipment.</li> <li>• Describe operation of the mine's underground personnel tracking system.</li> <li>• Locate contact list of all appropriate personnel.</li> </ul>	<p>Demonstration Discussion Q&amp;A OJT</p>	<p>"AMS Operator's Training Guide" 30 CFR Part 75 Subpart L and Subpart P The Mine's AMS ERP The Mine's Emergency Evacuation and Firefighting Program of Instruction Mine Maps/Schematics showing:</p> <ul style="list-style-type: none"> <li>• Working Sections</li> <li>• Ventilation System</li> <li>• Escapeway Systems</li> <li>• Location of Firefighting Equipment</li> </ul> <p>Other Applicable Mine-Specific Plans and/or Work Procedures</p>	<p>Verbal Responses Discussion Demonstration <b>NOTE:</b> Where applicable, skills demonstration should include operation of the AMS console and graphic displays.</p>
<p>Mine Specific Basic AMS Requirements</p>	<p>The AMS operator/trainee will demonstrate a thorough working knowledge of the basic requirements for the AMS used at their mine:</p> <ul style="list-style-type: none"> <li>• Identify, locate, and describe all hardware and software components of the mine's AMS, including the Uninterruptible Power Supply (UPS).</li> <li>• Identify and locate all types of sensors monitored by the mine's AMS.</li> <li>• Demonstrate daily audio/visual function tests on AMS (alerts/alarms).</li> <li>• Select appropriate icons to check operation of underground equipment.</li> <li>• Demonstrate ability to monitor sensors, equipment, and working sections.</li> </ul> <p style="text-align: center;"><i>(continued on next page)</i></p>	<p>Demonstration Discussion Q&amp;A OJT</p>	<p>"AMS Operator's Training Guide" The Mine's AMS 30 CFR § 75.351 – Atmospheric Monitoring Systems Other Applicable Mine-Specific Plans and/or Work Procedures</p>	<p>Verbal Responses Discussion Demonstration <b>NOTE:</b> Where applicable, skills demonstration should include operation of the AMS console and graphic displays.</p>

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<p>Mine Specific Basic AMS Requirements</p>	<p><i>(continued from previous page)</i></p> <ul style="list-style-type: none"> <li>• Demonstrate ability to monitor and record data relevant to conditions, equipment, sensors, alerts, and alarms.</li> <li>• Distinguish between alert and alarm signals.</li> <li>• State ambient levels in the mine.</li> <li>• Demonstrate actions for excessive methane if applicable.</li> <li>• Identify underground electrical installations (intake air for battery charging stations) if applicable.</li> <li>• Demonstrate ability to monitor belt air course ventilation if applicable.</li> <li>• Locate point-feed regulators if applicable.</li> <li>• Demonstrate on-shift examinations/tests for methane if applicable.</li> <li>• Locate key contact list of AMS manufacturer technical experts.</li> </ul>			
<p>Appropriate Responses to Alert and Alarm Signals, and Malfunctions</p>	<p>The AMS operator/trainee will demonstrate the appropriate actions and notification protocols for alert and alarm signals, and malfunctions of the AMS in use at the mine:</p> <ul style="list-style-type: none"> <li>• Identify and locate the sensor that has been activated.</li> <li>• Identify type(s) of sensor(s) activated.</li> <li>• Initiate prompt notification of appropriate personnel.</li> <li>• Notify appropriate personnel to investigate to determine cause.</li> <li>• Take required actions based on situation.</li> </ul> <p><i>(continued on next page)</i></p>	<p>Demonstration Discussion Q&amp;A OJT</p>	<p>“AMS Operator’s Training Guide” 30 CFR § 75.351 – Atmospheric Monitoring Systems The Mine’s AMS Manufacturer’s Technical Manuals and Training Guidelines Mine Maps/Schematics (showing locations of sensors) Mine Maps Other Applicable Mine-Specific Plans and/or Work Procedures Mine Communication Equipment</p>	<p>Verbal Responses Discussion Demonstration <b>NOTE:</b> Where applicable, skills demonstration should include operation of the AMS console and graphic displays.</p>

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Appropriate Responses to Alert and Alarm Signals, and Malfunctions	<p style="text-align: center;"><i>(continued from previous page)</i></p> <ul style="list-style-type: none"> <li>• Communicate with responsible person.</li> <li>• Notify all working sections.</li> <li>• Initiate mine wide evacuation, if necessary.</li> <li>• Demonstrate actions and notification procedures in the event of a malfunction.</li> <li>• Describe Time Delays.</li> <li>• Describe plans and notification procedures for underground persons qualified to respond to emergency.</li> <li>• Demonstrate actions for inoperative sensors.</li> <li>• Identify appropriate persons to monitor air course in belt entry.</li> </ul>			
Use of the Mine's Communication Systems (Including Emergency Notification Procedures)	<p>The AMS operator/trainee will:</p> <ul style="list-style-type: none"> <li>• Use two-way voice communication.</li> <li>• Describe types of communication systems.</li> <li>• Identify the location of communication devices.</li> <li>• Demonstrate Audible/Visual Communication Devices.</li> <li>• Notify all working sections with voice communication.</li> <li>• Notify appropriate persons for AMS testing/calibration.</li> <li>• Demonstrate notification procedure for mine-wide evacuation.</li> </ul>	<p>Demonstration Discussion Q&amp;A OJT</p>	<p>"AMS Operator's Training Guide"</p> <p>The Mine's AMS 30 CFR § 75.351(r) 30 CFR § 75.1600-2</p> <p>The Mine's AMS Mine Maps/Schematics Communication system equipment used at the mine</p> <p>Other applicable mine-specific plans, procedures, and/or notification plans.</p>	<p>Verbal Responses Discussion Demonstration</p>

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AMS Recordkeeping Requirements	<p>The AMS operator/trainee will demonstrate knowledge of AMS recordkeeping requirements at the mine:</p> <ul style="list-style-type: none"> <li>• Alerts and alarms.</li> <li>• Type and location of sensor.</li> <li>• Cause for activation.</li> <li>• Malfunctions (cause and corrective action).</li> <li>• Seven-day test.</li> <li>• Calibrations.</li> <li>• Maintenance performed.</li> <li>• Person entering record must include name, date, and signature.</li> <li>• Demonstrate knowledge of recording and logging information correctly.</li> <li>• Show the location of where records are kept.</li> </ul>	<p>Demonstration Discussion Q&amp;A OJT</p>	<p>“AMS Operator’s Training Guide” The Mine’s AMS Mine Maps/Schematics 30 CFR § 75.351(o) 30 CFR § 75.351(p) AMS Logs and Records</p>	<p>Verbal Responses Discussion Demonstration <b>NOTE:</b> Where applicable, skills demonstration should include operation of the AMS console and graphic displays.</p>
Underground Travel Requirements	<p>The AMS operator/trainee will travel to all working sections underground in order to retain familiarity with the underground mining system at their operation.</p>	<p>Demonstration Discussion Q&amp;A OJT</p>	<p>“AMS Operator’s Training Guide” 30 CFR § 75.351(q)(2) Transportation underground Notebook Other Mine-Specific Materials</p>	<p>Verbal Responses Discussion Demonstration</p>