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

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<th>OBJECTIVES</th>
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</table>
| **Familiarity with Underground Mining Systems Used at the Mine (General Overview of Topics)** | 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):  
- Discuss underground belt haulage and ventilation system in use at the mine.  
- Identify and discuss underground electrical installations in use at the mine.  
- Describe and discuss fire protection systems in use at the mine.  
- Describe and discuss the mine’s two-way communication and tracking systems. | Demonstration Discussion Q&A OJT | “AMS Operator’s Training Guide”  
30 CFR Part 75  
Mine Maps/Schematics  
Other Applicable Mine-Specific Plans and/or Work Procedures | Verbal Responses  
Discussion  
Demonstration |
| **Mine Ventilation System Used at the Mine** | The AMS operator/trainee will demonstrate a thorough working knowledge of the mine’s ventilation system:  
- Discuss the mine’s ventilation plan.  
- Discuss/describe the type of ventilation system used at the mine.  
- Discuss/describe planned air directions.  
- Identify and discuss ventilation controls in use at the mine.  
- Discuss belt-air course ventilation.  
- Discuss minimum and maximum air velocity requirements, based on the mine’s approved ventilation plan.  
- Locate all designated escapeways at the mine. | Demonstration Discussion Q&A OJT | “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 | Verbal Responses  
Discussion  
Demonstration |

**NOTE:** Where applicable, skills demonstration should include operation of the AMS console and graphic displays.
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| The Mine’s Emergency Evacuation and Firefighting Program of Instruction | The AMS operator/trainee will demonstrate a thorough working knowledge of the mine’s emergency evacuation and firefighting program of instruction:  
   • Discuss the mine’s ERP.  
   • Identify the mine’s responsible person(s).  
   • Discuss/describe the mine’s procedures for an emergency evacuation.  
   • Locate the mine’s escapeways, exits, and routes of travel to the surface.  
   • Locate the mine’s emergency shelters/refuge alternatives.  
   • Locate the mine’s firefighting equipment.  
   • Describe operation of the mine’s underground personnel tracking system.  
   • Locate contact list of all appropriate personnel.  
| Demonstration  
Discussion  
Q&A  
OJT                                                                 | “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:  
   • Working Sections  
   • Ventilation System  
   • Escapeway Systems  
   • Location of Firefighting Equipment  
Other Applicable Mine-Specific Plans and/or Work Procedures | Verbal Responses  
Discussion  
Demonstration  
NOTE: Where applicable, skills demonstration should include operation of the AMS console and graphic displays. |
| Mine Specific Basic AMS Requirements                                   | The AMS operator/trainee will demonstrate a thorough working knowledge of the basic requirements for the AMS used at their mine:  
   • Identify, locate, and describe all hardware and software components of the mine’s AMS, including the Uninterruptible Power Supply (UPS).  
   • Identify and locate all types of sensors monitored by the mine’s AMS.  
   • Demonstrate daily audio/visual function tests on AMS (alerts/alarms).  
   • Select appropriate icons to check operation of underground equipment.  
   • Demonstrate ability to monitor sensors, equipment, and working sections.  
(continued on next page)                                              | Demonstration  
Discussion  
Q&A  
OJT                                                                 | “AMS Operator’s Training Guide”  
30 CFR § 75.351 – Atmospheric Monitoring Systems  
Other Applicable Mine-Specific Plans and/or Work Procedures | Verbal Responses  
Discussion  
Demonstration  
NOTE: Where applicable, skills demonstration should include operation of the AMS console and graphic displays. |
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<tr>
<td>Mine Specific Basic AMS</td>
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<tr>
<td>Requirements</td>
<td>• Demonstrate ability to monitor and record data relevant to conditions,</td>
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<td></td>
<td>equipment, sensors, alerts, and alarms.</td>
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<td></td>
<td>• Distinguish between alert and alarm signals.</td>
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<td>• State ambient levels in the mine.</td>
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<td>• Demonstrate actions for excessive methane if applicable.</td>
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<td>• Identify underground electrical installations (intake air for battery</td>
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<td>charging stations) if applicable.</td>
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<td>• Demonstrate ability to monitor belt air course ventilation if applicable.</td>
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<td>• Locate point-feed regulators if applicable.</td>
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<td>• Demonstrate on-shift examinations/tests for methane if applicable.</td>
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<td>• Locate key contact list of AMS manufacturer technical experts.</td>
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<td>Appropriate Responses to</td>
<td>The AMS operator/trainee will demonstrate the appropriate actions and</td>
<td>Demonstration</td>
<td>“AMS Operator’s Training Guide”</td>
<td>Verbal Responses</td>
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<tr>
<td>Alert and Alarm Signals, and</td>
<td>notification protocols for alert and alarm signals, and malfunctions of the</td>
<td>Discussion</td>
<td>30 CFR § 75.351 – Atmospheric Monitoring Systems</td>
<td>Discussion</td>
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<tr>
<td>Malfunctions</td>
<td>AMS in use at the mine:</td>
<td>Q&amp;A</td>
<td>The Mine’s AMS Manufacturer’s Technical Manuals and Training Guidelines</td>
<td>Demonstration</td>
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<tr>
<td></td>
<td>• Identify and locate the sensor that has been activated.</td>
<td>OJT</td>
<td>Mine Maps/Schematics (showing locations of sensors)</td>
<td>NOTE: Where</td>
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<td></td>
<td>• Identify type(s) of sensor(s) activated.</td>
<td></td>
<td>Mine Maps</td>
<td>applicable, skills</td>
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<td>• Initiate prompt notification of appropriate personnel.</td>
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<td>Other Applicable Mine-Specific Plans and/or Work Procedures</td>
<td>demonstration should include operation of the</td>
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<td>• Notify appropriate personnel to investigate to determine cause.</td>
<td></td>
<td>Mine Communication Equipment</td>
<td>AMS console and</td>
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<td>• Take required actions based on situation.</td>
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<td>graphic displays.</td>
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| Appropriate Responses to Alert and Alarm Signals, and Malfunctions | *(continued from previous page)*
- Communicate with responsible person.
- Notify all working sections.
- Initiate mine wide evacuation, if necessary.
- Demonstrate actions and notification procedures in the event of a malfunction.
- Describe Time Delays.
- Describe plans and notification procedures for underground persons qualified to respond to emergency.
- Demonstrate actions for inoperative sensors.
- Identify appropriate persons to monitor air course in belt entry. | | | |
| Use of the Mine’s Communication Systems (Including Emergency Notification Procedures) | The AMS operator/trainee will:
- Use two-way voice communication.
- Describe types of communication systems.
- Identify the location of communication devices.
- Demonstrate Audible/Visual Communication Devices.
- Notify all working sections with voice communication.
- Notify appropriate persons for AMS testing/calibration.
- Demonstrate notification procedure for mine-wide evacuation. | Demonstration Discussion Q&A OJT | “AMS Operator’s Training Guide”
The Mine’s AMS
30 CFR § 75.351(r)
30 CFR § 75.1600-2
The Mine’s AMS
Mine Maps/Schematics
Communication system equipment used at the mine
Other applicable mine-specific plans, procedures, and/or notification plans. | Verbal Responses Discussion Demonstration |
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| AMS Recordkeeping Requirements| The AMS operator/trainee will demonstrate knowledge of AMS recordkeeping requirements at the mine:  
- Alerts and alarms.  
- Type and location of sensor.  
- Cause for activation.  
- Malfunctions (cause and corrective action).  
- Seven-day test.  
- Calibrations.  
- Maintenance performed.  
- Person entering record must include name, date, and signature.  
- Demonstrate knowledge of recording and logging information correctly.  
- Show the location of where records are kept. | Demonstration  
Discussion  
Q&A  
OJT | “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 | Verbal  
Responses  
Discussion  
Demonstration  
**NOTE:** Where applicable, skills demonstration should include operation of the AMS console and graphic displays. |
| Underground Travel Requirements| The AMS operator/trainee will travel to all working sections underground in order to retain familiarity with the underground mining system at their operation. | Demonstration  
Discussion  
Q&A  
OJT | “AMS Operator’s Training Guide”  
30 CFR § 75.351(q)(2)  
Transportation underground Notebook  
Other Mine-Specific Materials | Verbal  
Responses  
Discussion  
Demonstration |