Nevada National Security Site

Mine Rescue Teams

Introduction

The work at the Nevada National Security Site (NNSS), formerly known as the Nevada Test Site (NTS), requires the use of underground tunnels and shafts. In order to provide the safest work environment possible for NNSS workers, Mine Rescue Teams (MRTs) are required to ensure proper rescue services in an emergency situation.

Background

The MRTs must comply with Mine Safety and Health Administration (MSHA) requirements and with stipulations that include a requirement for a minimum of two MRTs to be available at all times when work is being performed underground. Each team must include five members and one alternate who are fully qualified, trained, and equipped for providing emergency mine rescue services. A mine rescue station is located at the NNSS where all required mine rescue and safety equipment is stored and maintained in a state of readiness.

In addition to intensive training programs, NNSS Mine Rescue Team participates in competitions that are designed to sharpen skills and test the knowledge of team members who would be called to respond to a mine emergency. The contests require team members to solve hypothetical mine emergency problems (such as fires, explosions or cave-ins) while being timed and observed by judges from MSHA. Teams are tested on knowledge of mine gasses, ventilation, first-aid, mine recovery, and fire-fighting.

Initial Response

When an emergency occurs at the NNSS the Operations Coordination Center (OCC) is contacted and the underground emergency warning system is activated. Next, the Local Emergency Director (LED) is notified and initiates the emergency response at the facility and confirms that the MRT Coordinator is contacted to activate the MRT.

Underground Rescue Requirements

Underground rescue and recovery efforts begin when two six-man rescue teams arrive on the scene and a fresh-air base is established. The mine rescue team confirms the numbers of personnel underground and conditions of the refuge station with the LED or Incident Command (IC) upon arrival. The LED or IC then requests transportation, stretchers, and medical assistance as needed. The first team enters the mine while the second team remains at the fresh-air base. Through the use of a hard-line communication line, which involves pulling on their communication line to send a messages to the fresh-air base, communication is established with the above ground team. If the first team completely loses communication, and communication can not be reestablished within 10 minutes, a back up team is sent down.

Breathing apparatus and pressure gauge readings are checked at 15-minute intervals while the rescue team is underground or away from the fresh-air base. The team immediately returns to the fresh-air base if any breathing apparatus appears to be malfunctioning or any team member indicates that it is impossible to continue.

Underground Entry

The MRT Coordinator, in conjunction with the LED/IC, coordinates a briefing with each underground rescue team before initiating the search, recovery, and rescue efforts.

The highest ranking underground supervisor assumes responsibility for an orderly evacuation to the surface or elects to initiate the occupation of the refuge chamber as appropriate. The supervisor ensures that a sweep of alcoves and headings is conducted while on the way to the evacuation point or to the refuge station.

The MRT captain enters the underground facility after permission is granted by the LED/IC and Fresh-Air Base Coordinator. The team uses the reentry communications reel and headset equipment to maintain voice communications with the fresh-air base.

The MRT captain is responsible for:

- Method of team communication;
- Entry/reentry route;
- Potential hazards to the team and how they are addressed or avoided;
- Monitoring equipment (air quality, radiological, etc.);
- Trigger levels for team evacuation.

The LED/IC & MRTC monitors the facility environment as the MRT advances and performs the following:

- Keeps the tunnel or shaft water tanks filled and provides compressed air continually; either through the compressed air line or through a suitable alternate if personnel are, or are suspected to be, in the refuge station;
- Plots all advances using a current map of the tunnel complex;
- Establishes or reestablishes underground ventilation as required;
- Maintains the underground power and ventilation system throughout the duration of the emergency.

Ensuring Safety

In real emergencies, the lives of mine rescue team members and their co-workers depend on the proficiency of each individual's skill and training. Miners face many challenges- lack of visibility due to smoke, unknown electrical hazards, radiological hazards, and a toxic/explosive atmosphere just to name a few. In addition to intensive safety training, other measurements, such as daily inspections of the tunnel, weekly inspections of the shaft, and air quality checks twice a day, help ensure safety. Additionally, any employee working underground is required to take underground workers training.

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