



# **SANFORD UNDERGROUND RESEARCH FACILITY**

**SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY**

## **Guide and Guide Training Standard**

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## **Revision History**

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## 1.0 Purpose

For the purpose of guiding and training personnel underground at Sanford Underground Research Facility (SURF), South Dakota Science and Technology Authority (SDSTA) establishes responsibilities of a Guide and the requirements for select individuals to become and maintain Guide or Guide Trainer certification.

## 2.0 Scope

This standard applies to Guides and Guide Trainers at SURF.

## 3.0 Definitions

**Direct Observation** – The act of monitoring personnel and activities while in the immediate area or within visual and/or audible range of personnel.

**Established Lab Area** – A developed and designated location to support an experiment.

**Guide** – An individual who meets the qualifications outlined in this standard designated to provide direct observation of the personnel being guided. Both SDSTA and non-SDSTA personnel can be Guides.

**Guide Ratio** – The required number of Guides per number of guided personnel. Guides do not count toward the number of guided personnel.

**Guide Trainer** – An individual who meets the qualifications outlined in this standard to provide guide training. Both SDSTA and non-SDSTA personnel can be Guide Trainers.

**Guide Train-the-Trainer Instructor** – An SDSTA Guide who is responsible for the training and certification of Guide Trainers.

**Lead Guide** – A person that assumes leadership in the event of an emergency or an evacuation. In areas where multiple guides exist, the Lead Guide will assume overall responsibility for the entire group in the event of an emergency.

**Learning Management System (LMS)** – A software application or web-based technology used to plan, implement and assess a specific learning process.

**Project Manager** – A person who undertakes specific responsibilities to organize and support a trip, project or visit and serves as a point of contact for the individuals, groups or agencies.

**Refuge Chamber** – An area of safe assembly for personnel during an emergency. Refuge chambers are:

- Constructed to be made airtight and fire resistant.
- Provided with basic first aid supplies.
- Provided with CO<sub>2</sub> scrubbers, gas testers, compressed air and oxygen, and communications.

- Large enough and provided with enough food and water to accommodate the number of persons in the particular area for up to ninety-six hours.

**Sufficient Experience** – Adequate awareness and exposure to facility practices and operations that allows for a comprehensive understanding of hazards and risks associated with designated areas or tasks.

**Teach-Back** – A useful way to confirm that the information you provide is being understood by getting people to 'teach back' what has been discussed.

**Train-the-Trainer** – A method that allows for the training and certification of personnel to become instructors.

**Trained Worker** – Personnel who have been trained in the hazards for specific areas, including a walk-through for familiarization of emergency requirements.

**Trip Action Plan (TAP)** – A documented and pre-planned event that is updated throughout the day to reflect any changes to approve individuals or groups to access facility areas.

**Visitor** – A person who has an appointment with a designated point of contact (Sponsor) at SURF and who requires temporary access to site facilities.

## 4.0 Responsibilities

### 4.1. SURF Laboratory Director

- 4.1.1. Ensures direct reports are accountable for the requirements of this standard.

### 4.2. Department Directors

- 4.2.1. Evaluate and consider Guide requests.
- 4.2.2. Submit ESH-(12000-F)-220754 Guide Request Form to the Director of ESH to request a Guide/Guide Trainer.
- 4.2.3. Ensure direct reports are accountable for the requirements of this standard.
- 4.2.4. Ensure all training documents have been submitted to the ESH Department.
- 4.2.5. Ensure training matrices for employees requiring guide training are established.

### 4.3. Director of Environment, Safety, and Health (ESH)

- 4.3.1. Receives and approves individuals to serve as Guides or Guide Trainers via the Guide Request Form.
- 4.3.2. Approves spaces as Established Lab Areas.
- 4.3.3. Establishes guide ratios.
- 4.3.4. Collaborates with the Director of Underground Operations to approve the ESH-(12000-F)-220753 Guide Discontinuation Form when necessary.
- 4.3.5. Maintains this standard and the requirements within.

### 4.4. Director of Underground Operations

- 4.4.1. Collaborates with the Director of ESH to approve the ESH-(12000-F)-220753 Guide Discontinuation Form when necessary.

**4.5. Project Manager**

- 4.5.1.** Ensures a Guide who is certified for the specific area is assigned.
- 4.5.2.** Evaluates and considers Guide requests.
- 4.5.3.** Submits Guide Request Form to the Director of ESH to request a Guide/Guide Trainer.
- 4.5.4.** Ensures guide personnel under their project meet all guide refresher training requirements.

**4.6. Laboratory Coordinator**

- 4.6.1.** Assumes Lead Guide role in the event of emergency or evacuation in an Established Lab Area (see SCI-(1000-S)-135416 Experiment Integration & Support).

**4.7. Lead Guide**

- 4.7.1.** Assumes responsibility and coordination for all personnel, including other Guides, in the event of an emergency. For example, in an Established Lab Area, a refuge chamber, or resource area/bins.

**4.8. Guide**

- 4.8.1.** Ensures compliance with this standard.
- 4.8.2.** Coordinates with responsible personnel to gain access into areas requiring approval.
- 4.8.3.** Coordinates with other Guides to establish a Lead Guide when multiple guides are present.
- 4.8.4.** Performs requested Guide walks.
- 4.8.5.** Conducts review of emergency escape route(s) and communicates relevant significant changes with Guides as appropriate.

**4.9. Guide Trainer**

- 4.9.1.** Performs Guide walks.
- 4.9.2.** Meets the work experience timeframe and prerequisites listed in Section 5.3.
- 4.9.3.** Demonstrates the necessary competency to effectively provide a high level of training to others.
- 4.9.4.** Manages and maintains the Guide matrix to document completed training for Guide candidates via training certificate or the LMS.
- 4.9.5.** Coordinates training trips with appropriate personnel as necessary.
- 4.9.6.** Conducts review of emergency escape route(s) and communicates relevant significant changes with Guides as appropriate.
- 4.9.7.** Submits the Guide Certification Form to the Director of ESH.
  - Any non-SDSTA Guide Trainer shall submit equivalent documentation to the ESH Department.

**4.10. Guide Train-the-Trainer Instructor**

- 4.10.1.** Meets all Guide Trainer responsibilities.
- 4.10.2.** Acquires and maintains Guide Trainer status.
- 4.10.3.** Obtains and maintains the Guide Certification Form.

## **5.0 Instructions**

Guide certifications are specific to a geographical area underground. Guide requirements may vary within a given geographical area based on specific parameters, e.g., established lab area may require

additional training requirements. Guides have many duties, the primary of which is ensuring the safety and health of their guided personnel.

**5.1. General Guide Requirements:**

- All Guides are required to:
  - Provide direct observation of the guided personnel
  - Maintain proficiency in certified areas.
    - ◆ Review the emergency escape route(s) once every 6 months. Documented in the LMS or on the ESH-(12000-F)-201425 SDSTA Training Certificate or equivalent.
      - ◇ If exceeding the time requirement, or if there have been significant changes to an underground level, the Guide must review the area with a Guide/Guide Trainer that is current in the specified area.
  - Complete First Aid/CPR/AED certification within three months of receiving Guide status.
  - Coordinate with responsible personnel to gain access into areas requiring approval and obtain UO-(3000-F)-202774 Level Access Permit for restricted areas.
  - Successfully complete and be current in the LMS.
  - Provide safety oversight for guided personnel including reviewing hazards, risks, controls, and work activities in specific areas to which the group is guided.
  - Verify two forms of communications are operational.
  - Initiate emergency communications with the Emergency Operation Center and its command staff as needed.
  - Lead guided personnel to safety in the event of an emergency.
  - Confirm a TAP has been developed and approved for all applicable locations and is updated as necessary for the guided personnel.
  - Carry a copy of the TAP that is accessible without a connection to a wireless network.
  - Arrange transportation as necessary (i.e., motors, vans, special cages, etc.).
  - Confirm proper Personal Protective Equipment (PPE) is issued and properly worn throughout the trip.
  - Ensure all personnel properly follow the brass-in/brass-out procedures.
  - Assist with cleanliness measures (i.e., boots are cleaned, PPE returned, etc.).
  - Communicate logistics with facility personnel.
  - Carry an approved portable gas tester and monitor the atmosphere while underground.
    - ◆ One gas tester per guided group is required.
  - Coordinate activities with other Guides/Lab Coordinators.
    - ◆ Establish a Lead Guide as required.

**5.2. Guide Ratios**

To manage any hazards or risks associated with a specific geographical area, Guide ratios are as follows:

- Underground:
  - Non-permit restricted areas:
    - ◆ 1 Guide to 12 individuals.
  - Permit restricted areas:
    - ◆ 1 Guide to 6 individuals.
  - Established lab areas:
    - ◆ Davis Campus
      - ◇ Minimum of 1 Guide for each of the cavern and non-cavern groups.
    - ◆ Ross Campus
      - ◇ Minimum of 1 Guide per laboratory.
  - Shaft conveyances:
    - ◆ Shaft Infrastructure Technicians are the designated Lead Guides.
    - ◆ Ratios do not apply in the shaft conveyance.

### **5.3. General Guide Trainer Requirements**

- Prerequisites for Guide Trainer:
  - Certified and current as a Guide.
  - Six months of sufficient experience on-site in designated area(s) or other documented experience from working at other underground sites.
    - ◆ In lieu of six months of sufficient on-site work experience, a letter of verification must be submitted in writing to the Director of ESH providing proof of sufficient experience.
- The SDSTA ESH Department will propose training dates.
- The SDSTA ESH Department completes the training and provides documentation that the training is complete.

For a candidate to be recommended for Guide Trainer status, they must meet certain requirements that ensure they fully understand the hazards and risks associated with in the areas they will train Guides. Additionally, they must meet the requirements of the Train-the-Trainer program, demonstrating that they are capable of teaching and passing this information on to others.

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### **5.4. Guide Trainer – Demonstration of Competency**

The process begins with an observation phase where candidates attend a session led by a Guide Train the Trainer instructor to learn techniques and material delivery.

- Candidates perform a teach-back session to demonstrate their ability to:
  - Communicate objectives clearly.
  - Deliver accurate, practical information.



- o Engage participants effectively.
- Competency is assessed through:
  - o Practical evaluations aligned with the training matrix.
  - o Behavioral assessments to ensure professionalism and safety adherence.
- The Train-the-Trainer Instructor reviews evaluations and feedback to determine readiness for certification.
- Certification is granted after meeting all criteria, with a signed Guide Certification Form.

**5.5. Maintaining Guide and Guide Trainer Status**

- Requirements for training must be completed by each Guide or Guide Trainer. These requirements include:
  - o Any refresher training for any of the above areas where the Guide or Guide Trainer is currently certified.
  - o LMS training.
  - o A review of the area or level with a Guide if there has been a significant change to the area.

**5.6. Considerations for Discontinuation of Guide and Guide Trainer Status**

- Has not been underground in 1 year.
- SURF Access Request Form termination.
- Substandard performance during a drill/exercise or underground emergency.
- Overdue in LMS training requirements.
- Violation of any requirements within LMS training and the SDSTA ESH Manual.
- Guide Discontinuation Form shall be completed and submitted for approval to the Director of Environmental Safety and Health and the Director of Underground Operations.

**5.7. Training Records**

- Training records will be retained in the LMS or within ESH records.

## **6.0 Documented Information/Related Documents**

- 6.1.** ESH-(12000-F)-204636 Guide Certification Form
- 6.2.** ESH-(12000-F)-201425 SDSTA Training Certificate
- 6.3.** SCI-(1000-S)-135416 Experiment Integration & Support
- 6.4.** ESH-(XXX-F)-220754 Guide Request Form
- 6.5.** ESH-(12000-F)-220753 Guide Discontinuation Form
- 6.6.** UO-(3000-F)-202774 Level Access Permit