



Sanford

Underground Research Facility

South Dakota Science and Technology Authority

Experiment Integration & Support Standard

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Revision History

Rev	Date	Section	Paragraph	Summary of Change	Authorized by
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1.0 Purpose

In partnership with research groups, the South Dakota Science and Technology Authority (SDSTA) aims to maintain a robust organization with resources to promote safe and successful experiment operations at the Sanford Underground Research Facility (SURF).

2.0 Scope

This document describes integration and support elements that apply to all experiments at SURF. It further summarizes SDSTA responsibilities regarding facilities and infrastructure.

3.0 Definitions

NA – Define the term this is specific for this document.

4.0 Responsibilities

4.1. SURF Laboratory Director

- 4.1.1. Allocates SDSTA resources from all departments to support experiments and associated facilities.

4.2. Science Director

- 4.2.1. Manages the Experiment Implementation Program, as outlined in 6.1, including overall responsibility for support of experiments.
- 4.2.2. Assigns individual to act as the Experiment Point of Contact (EPOC) for each experiment.

4.3. Experiment Point of Contact (EPOC)

- 4.3.1. Member of the Science Department who assists with navigation of the Experiment Implementation Program, reviews project implementation documentation (Experiment Planning Statement, Hazard Assessments, inventories, etc.), reviews and approves procedures, and reviews documentation supporting authorization requests.
- 4.3.2. The EPOC also acts in a coordination role for other SDSTA resources (e.g., marshalling necessary support from other departments as needed).

4.4. Laboratory Coordinator (LC)

- 4.4.1. Sanford Lab personnel are designated by the Science Director to act in a coordination role to facilitate access to facility resources as well as perform safety oversight for experiment activities.
- 4.4.2. Laboratory Coordinators are familiar with SDSTA emergency procedures, including emergency communication equipment and operation of underground refuge chambers. LC may also assume the role of Lead Guide and act in a leadership role in the event of an emergency or evacuation.
- 4.4.3. A Laboratory Coordinator is certified as a Facility Guide.

4.5. Environment, Safety & Health (ESH) Director

- 4.5.1. Ensures ESH resources for supporting experiments, nominally through the Radiation/Experiment Health & Safety Manager position.
- 4.5.2. Ensures technical and maintenance support for safety systems in facilities used by experiments.

4.6. Radiation/Experiment Health & Safety Manager

- 4.6.1.** Main ESH resource supporting experiments, reviews experiment implementation documentation (Experiment Planning Statement, Hazard Assessments, etc.), reviews and approves procedures.

4.7. Engineering Director

- 4.7.1.** Ensures engineering support for the operation of laboratory facilities and for experiment technical assessments.

4.8. Information Technology Director

- 4.8.1.** Manages the deployment, monitoring, maintenance, purchasing and support of all IT systems at SURF.

4.9. Surface Operations & Utilities Director

- 4.9.1.** Ensures technical and maintenance support for facilities used by experiments, including the following systems: alarm systems, building management systems, fire suppression systems. Manages Facilities Technician(s) support of laboratory facilities and specific experiment activities.

4.10. Underground Operations Director

- 4.10.1.** Ensures technical support for underground infrastructure maintenance and transportation of experiment personnel and equipment. Evaluates proposed locations for experiments. Manages Infrastructure Technician(s) support in areas approved for experiment access.

4.11. Hoists and Shafts Director

- 4.11.1.** Ensures safe access to underground areas and coordinates access schedules, maintenance activities as well as construction efforts related to SURF hoists and shafts.
- 4.11.2.** Approves and coordinates advance non-standard access requests (e.g., access on maintenance days/weekends, special cage times).

4.12. Duty Officer

- 4.12.1.** Approves and coordinates emergency access requests.

5.0 Instructions

5.1. Experiment Support

5.1.1. General Support

- Under the DOE Cooperative Agreement, SDSTA at SURF provides basic support to all users of the facility, based on DOE guidelines - DOE Office of Science User Facility Definition – <https://sc.osti.gov/User-Facilities/Policies-and-Processes/Definition> - including:
 - Provision of useable underground space that includes ventilation, power, water pumping.
 - Volume of underground space should be appropriate to scientific need.
 - Access to the underground for the installation, operation, decommissioning of experiments.
 - Communication and networking services.
 - Scientific and engineering liaison with users needed to help them meet the unique environment of SURF.

- Provision of usable above ground laboratory and setup space to prepare experiments. Needs beyond basic support are billed to experiments on a cost-recovery basis (via contract or General Services Agreement).
- A detailed list of general services is available in SCI-(1000-A)-189372 Experiment Integration & Support Attachment B.
- Full cost recovery is required for proprietary experiments (those that do not publish results in open scientific journals). A fee structure based on the annual SDSTA budget (surface / UG) relative to non-proprietary researcher access and space footprints is updated annually and communicated via a contract or General Services Agreement:
 - Project access (per experiment person, per hour, based on location)
 - SDSTA personnel acting on behalf of a project (per SDSTA person, per hour)
 - Space occupancy and operations (monthly, based on annual budget and location)
 - ◆ Some experiments will operate equipment in an unattended mode without having personnel onsite, and in those cases, cost recovery will be based on space occupancy and specific support by SDSTA personnel. Other experiments will not install equipment, in which case cost recovery will be based on access and specific support by SDSTA personnel.
- Each experiment will nominally receive support from Science, ESH, Engineering and Operations for the installation, operation and decommissioning of experiments. Specific personnel assignments for various science facilities (including surface and underground locations) and science experiments are managed within individual departments.

5.2. Experiment Integration

5.2.1. A number of resources are involved in integrating an experiment and its associated personnel into SDSTA operations and for maintaining and sustaining a strong relationship throughout the lifetime of the experiment.

- Facility Access
 - General
 - ◆ Forms are available in order to gather basic personal information, sign-up for scheduled training classes and to receive IT accounts (e.g., New User Request form). Once experiment personnel complete the “General Safety – Basic” training class, they are eligible to be issued a personal facility access badge with appropriate access permissions (approval by Science Director or designee).
 - Underground Access
 - ◆ SDSTA nominally offers a 4-day work week (alternating Mon-Thu and Tue-Fri) via the Yates Shaft and can accommodate 24-hour access as requested. Cage schedules are maintained indicating specific times when experiment personnel can go down or up. Personnel and materials are transported via the Yates Shaft with limited availability via the Ross Shaft. Restrictions or changes to underground access due to maintenance activities and construction efforts may occur. These changes will be communicated to and coordinated with affected experiment personnel.
 - Facility Guides
 - ◆ Enhanced emergency response training is available to enable experiment personnel to be authorized as a Facility Guide, which allows groups additional scheduling flexibility, especially for facility holidays or non-standard shifts (see the Facility Guide policy in the SDSTA ESH Manual).
 - Emergency (Non-Standard) Access
 - ◆ SDSTA recognizes that conditions may arise requiring non-standard access to experiment equipment, and processes have been developed to accommodate experiment personnel (see Facility Access policy in the SDSTA ESH Manual)

- Planning and Communication
 - Shipping and Transport
 - ◆ SDSTA receives materials for many groups from many vendors. Guidelines for shipping materials to the SURF are available (see Shipping Instructions listed in SCI-(1000-A)-189371 Experiment Integration & Support Attachment A) and an online tool is available for scheduling transport underground (see Yates Manifest listed in SCI-(1000-A)-189371 Experiment Integration & Support Attachment A). For experiments with a significant amount of equipment (several pallets or more), a manifest is required with detailed information on equipment arriving at the SURF including a description of items, including manufacturer/supplier information, as well as quantities, masses and dimensions of items and transport containers (pallet, crate, etc.); a manifest template is available (listed in SCI-(1000-A)-189371 Experiment Integration & Support Attachment A). A dedicated form has been developed for high-value items to ensure expectations for both experiment and facility personnel are identified (listed in SCI-(1000-A)-189371 Experiment Integration & Support Attachment A). Manuals for equipment used onsite are expected to be available.
 - Work Planning
 - ◆ Details of experiment activities need to be communicated to SDSTA, including the proposed location(s), cage times, personnel names, work procedures, materials and any facility support that is required to accomplish the work. A work plan template is maintained (listed in SCI-(1000-A)-189371 Experiment Integration & Support Attachment A), which is used by SDSTA personnel to approve a trip and to enter the relevant details in the SDSTA Trip Action Plan database (TAP); specific representatives from some experiment groups may interact directly with the TAP database. Changes to experiment activities will be updated in the TAP database as they are known. Experiment representatives will regularly review the status of personnel training and institutional insurance that are required to perform work on SURF property as well as regularly ensure the various inventories are up to date on an ongoing basis. Furthermore, experiment personnel will conduct and document pre-job briefings for work involving approved procedures (see Work Planning and Control policy in the SDSTA ESH Manual). An experiment representative (e.g., Lead Researcher) releases the work to a specific crew on a specific day (i.e., the experiment representative gives specific permission to perform authorized work).
 - Shift Reports
 - ◆ Each experiment group will document their activities after completion of a shift according to the shift report template (listed in SCI-(1000-A)-189371 Experiment Integration & Support Attachment A). In particular, the shift report includes a summary of the experiment activities as well as any comments, recommendations, irregularities, near-misses, or incidents. Recording acts of safety is also strongly encouraged. The personnel hours recorded in the experiment shift reports are compiled by the SDSTA and serve several purposes, including safety statistics.
 - Incident Reports
 - ◆ Injuries or significant operational upsets qualify as an incident and must be reported to the SDSTA (see IMSM-(F-740-002)-173324 First Report and Incident Investigation form referenced in the SDSTA ESH Manual and listed in SCI-(1000-A)-189371 Experiment Integration & Support Attachment A). In particular, all incidents, including injuries or unusual occurrences such as significant equipment failures, must be reported verbally to SDSTA personnel. Furthermore, injuries must be evaluated before a worker can return to work. Failure to report an injury in a timely manner may jeopardize the processing of any associated Workers' Compensation claims. SDSTA personnel will assist with investigations as

- necessary. Summary details from relevant facility or other experiment incidents will be shared with experiment personnel.
- o Evacuation Drills
 - ◆ SDSTA committed to conducting regular evacuation drills that involve facility staff as well as experiment personnel. SDSTA recognizes that it is important to minimize the impact these drills have on experiment activities and in particular the Laboratory does not want to compromise valuable progress and/or equipment. Guidelines for conducting evacuation drills are available and listed in SCI-(1000-A)-189371 Experiment Integration & Support Attachment A.
 - Science Integration
 - o Project Mailing List
 - ◆ A project mailing list called “Project Team” is intended as a way of communicating information on various general topics to all SURF stakeholders. Experiment personnel who regularly visit the SURF site are encouraged to register.
 - o Science Integration Meeting
 - ◆ Regular meetings are held between facility representatives (including representatives from Science, Operations, ESH and management) and representatives from the main experiment groups to discuss both facility and experiment logistics items. Key elements from recent shift reports are shared with the group; the experiment representatives are expected to communicate important items with their respective collaborations.
 - o Laboratory Coordinator
 - ◆ Laboratory Coordinators (LC) are present on a regular basis at facilities where the activities of one group may impact another group such as at the main underground campuses. To that end, the LC facilitates a daily coordination meeting to discuss activities and logistics for the day, including identifying requests for specific resources (e.g., common space, staff such as Facilities Technicians, etc.).
 - ◆ LC perform workspace walkthrough inspections and post shift reports including observations and suggestions as well as notes from the custodians and facility technicians.
 - ◆ Update personnel accounting tools (TAP, whiteboards, etc.) as appropriate.
 - ◆ Coordinate and conduct informal table-top evacuation exercises as appropriate.
 - ◆ LC may perform other duties associated to their SDSTA position, but activities that require significant attention for sustained periods may require that the Laboratory Coordinator role be re-assigned.
 - o Experiment Point of Contact
 - ◆ Individuals within the SDSTA Science department are designated by the Science Director to act as a point-of-contact with experiment groups to assist in navigating the experiment implementation process (listed in SCI-(1000-A)-189371 Experiment Integration & Support Attachment A). The Experiment Point of Contact can help identify points of contact within other SDSTA departments as needed. The nominal ESH point of contact for experiment groups is the Radiation/Experiment Health & Safety Manager; however other ESH resources may be required.
 - o Management Meetings
 - ◆ Regular meetings are held between facility management (including the Science, SURF Laboratory and SDSTA Executive Directors) and experiment management/PIs for the main experiment groups to identify and resolve any critical issues that arise.
 - o User Association

- ◆ An organization intended to serve SURF researchers as well as the wider underground science community. The User Association provides an avenue for two-way communication on topics important to researchers, promotes a sense of community, and articulates and promotes the scientific case for underground science.
- User Surveys
 - ◆ A survey will be conducted on a regular basis (nominally annually) in which experiment personnel participating in activities at SURF are polled on their perceptions of experiment support (among other topics).
 - ◆ User Association may also conduct user surveys.
- Information Technology
 - Science Services and Support
 - ◆ SDSTA IT department has developed a plan for IT science services and support, including an overview of the SURF IT network and a process for troubleshooting issues.

6.0 Documented Information/Related Document

- 6.1. SCI-(1000-A)-189371 Experiment Integration & Support Attachment A
- 6.2. SCI-(1000-A)-189372 Experiment Integration & Support Attachment B
- 6.3. Experiment Implementation Program <http://sanfordlab.org/researchers/proposal-guidelines>
- 6.4. DOE Office of Science User Facility Definition – <https://sc.osti.gov/User-Facilities/Policies-and-Processes/Definition>

References, Templates & Databases

- Experiment Implementation Program: <http://sanfordlab.org/researchers/proposal-guidelines>; also: <https://docs.sanfordlab.org/docushare/dsweb/Get/Document-34478>
- Information for Researchers: <https://docs.sanfordlab.org/docushare/dsweb/View/Wiki-272>
- SURF ESH Manual: <https://docs.sanfordlab.org/docushare/dsweb/View/Collection-15104>
- Underground Access Schedule: <https://docs.sanfordlab.org/docushare/dsweb/View/Collection-11477>; also: <https://docs.sanfordlab.org/docushare/dsweb/Get/Document-150960>
- Emergency Access Instructions: <https://docs.sanfordlab.org/docushare/dsweb/Get/Document-118029>
- Shipping Instructions (including incoming/outgoing forms): <https://docs.sanfordlab.org/docushare/dsweb/Get/Document-116863>
- Trip Action Plan Database: https://portal.sanfordlab.net/cfide/ta_view.cfm
- Yates Manifest: https://portal.sanfordlab.net/cfide/mtl_view.cfm
- Inventory Templates: <https://docs.sanfordlab.org/docushare/dsweb/View/Collection-16241>
- High-Value Equipment Handling Form: <https://docs.sanfordlab.org/docushare/dsweb/Get/Document-82438>
- Experiment Hazard Assessment Summary Template: <https://docs.sanfordlab.org/docushare/dsweb/Get/Document-98635>
- Work Plan and Shift Report Templates: <https://docs.sanfordlab.org/docushare/dsweb/View/Collection-14404>
- First Report and Incident Investigation Form: ESH-(3000-F)-173324 First Report and Incident Investigation
- SURF Emergency Management Policy: <https://docs.sanfordlab.org/docushare/dsweb/Get/Document-79594>
- Science Evacuation Drill Memo: <https://docs.sanfordlab.org/docushare/dsweb/Get/Document-133579>
- SURF User Association: <https://www.sanfordlab.org/researchers/surfuserassociation>
- SURF Customer Satisfaction: IMSM-(P-912)-173277 Customer Satisfaction
- SURF IT Science Services and Support Plan: <https://docs.sanfordlab.org/docushare/dsweb/Get/Document-84542>

Revision History

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SDSTA will provide the general services listed below to all experiments, subject to the availability of funding. As indicated above, full cost recovery is required for proprietary groups. Special services may be documented separately in a Service Agreement.

1. General	SDSTA	Experiment
General Facility	For all phases of an Experiment, maintain safe access, including ventilation and dewatering (and associated utilities) as appropriate.	
Support	Nominal level of engineering, scientific and operations support for Experiment implementation.	Costs for dedicated use of SDSTA staff.
Communication Equipment	Equipment, maintenance, costs, and management of nominal needs for: <ul style="list-style-type: none"> • Network switches. • Standard VoIP phones and similar devices. • Wireless access point(s). 	<ul style="list-style-type: none"> • Costs for IT equipment above nominal level provided by SDSTA. • Intercom system(s). • Conferencing phones or systems. • Internal cabling from Experiment equipment.
IT Resources	<ul style="list-style-type: none"> • Space in environmentally controlled room for Experiment-maintained equipment. • Some training. 	<ul style="list-style-type: none"> • Rack: equipment including rails, installation including any electrical costs. • All cabling including ethernet. • All CPUs and primary storage. • All uninterruptable power supplies. • Backup system: media, quality assurance, restorations. • Experiment system maintenance, including security patches.
Electrical Equipment	<ul style="list-style-type: none"> • Perform inspections of electrical equipment. • Some training. 	<ul style="list-style-type: none"> • Costs associated with receiving or shipping. • Coordination with SDSTA regarding shipping/receiving and inspections of any electrical items. • Some training, as appropriate.
Chemical/Hazardous Waste	<ul style="list-style-type: none"> • Transportation and disposal arrangements. • Reporting to State. • Waste containers. Transportation vehicles. • ESH oversight and some training. 	<ul style="list-style-type: none"> • Waste handling equipment, storage, and disposal costs. • Coordination with SDSTA regarding shipping/receiving and inspections of any chemicals. • Some training, as appropriate.
Industrial Hygiene	<ul style="list-style-type: none"> • Monitoring and equipment that can be provided by SDSTA, as available. 	<ul style="list-style-type: none"> • Costs for services and equipment beyond what the SDSTA can provide.

	<ul style="list-style-type: none"> • ESH oversight. 	
Cranes, Hoists and Rigging	<ul style="list-style-type: none"> • Maintenance for SDSTA equipment at SURF. Maintenance for Experiment equipment that can be provided by SDSTA staff. • Inspections per ESH Manual (certified inspector). • Some rigging as needed on a temporary basis that can be provided by SDSTA. • ESH oversight and some training. 	<ul style="list-style-type: none"> • Costs associated with Experiment equipment. • Rigging not covered by SDSTA operations as appropriate. • Inspections per ESH Manual (operator). • Any specialized equipment required for the Experiment.
Pressure Systems	<ul style="list-style-type: none"> • Manage regular pressure vessel inspections. • ESH oversight. 	<ul style="list-style-type: none"> • Costs for Experiment pressure vessel inspections beyond regular schedule. • Some training, as appropriate
Gases & Cryogenics	<ul style="list-style-type: none"> • Delivery/supply arrangements for all gases/cryogenics. • Transportation to designated area, including any special transport vehicle(s). • ESH oversight and some training. 	<ul style="list-style-type: none"> • All regulators, flow, monitoring devices, distribution equipment and carts for movement in designated areas. • Liquid nitrogen: all consumption, storage, and distribution system costs. • All non-liquid nitrogen gases, cryogenics, including dewar/cylinder rental costs. • Some training, as appropriate
Radioactive Sources and Equipment	<ul style="list-style-type: none"> • Access to exempt sources owned by SDSTA (as available). • Storage • ESH oversight, including approving Radiation and/or Authorized Users. • Basic regulatory monitoring equipment. • Training 	<ul style="list-style-type: none"> • Costs associated with receiving or shipping radioactive sources. • Required sources and any deployment equipment. • Coordination with SDSTA RSO on shipping/ receiving of any radioactive materials.
Radiation Dosimetry	<ul style="list-style-type: none"> • Coordination and management of program, including initial setup and ongoing shipping costs for all badges. • Notification for all program participants. • Costs for processing SDSTA personnel badges. 	<ul style="list-style-type: none"> • Enrollment per the SDSTA program. • Costs for processing Experiment personnel badges as authorized by Experiment. • Costs for processing Experiment laboratory area badges per agreement between Experiment and SDSTA RSO.

		<ul style="list-style-type: none"> Costs and maintenance of any other personal radiation monitors.
Reviews	<ul style="list-style-type: none"> Time & effort, travel expenses for SDSTA personnel for some reviews. 	<ul style="list-style-type: none"> Expenses for non-SDSTA personnel.
General Staging, Preparation & Storage (Surface)	<ul style="list-style-type: none"> Receiving, shipping. Approval for heated/cold staging, preparation & storage of equipment and materials as appropriate and as space available. 	<ul style="list-style-type: none"> Costs, packing. Coordination and advance information on all shipments. Request approval for staging, preparation & storage space.
General Staging, Preparation & Storage (Underground)	<ul style="list-style-type: none"> Receiving (some), shipping arrangements. Approval for staging, preparation & storage of equipment and materials as appropriate and as space available. Maintenance of space. 	<ul style="list-style-type: none"> Costs, packing, specialized storage (except as noted), including maintenance. Provide advance information on all shipments. Request approval for storage.
General Transportation	<ul style="list-style-type: none"> Shipping arrangements to designated areas using existing transport vehicles. Regulatory shipping guidance and preparations that can be provided by SDSTA staff. 	<ul style="list-style-type: none"> Packing (with regulatory exceptions). Specialized transport vehicles (except as noted). Provide advance information on all incoming and outgoing shipments. Costs associated with shipping goods.
Procurement	As appropriate and as requested (subject to overhead).	Approved by Experiment PI or designee.
Security	System maintenance and access management.	Compliance with SDSTA access requirements and ensuring personnel status updated.
Emergency Response Team	Personnel staffing for 24-hour coverage.	
PPE	<p>Equipment, maintenance, and training as appropriate for:</p> <ul style="list-style-type: none"> General underground PPE: cap lamp, hard hat (with cap lamp mounting hardware as required), non-prescription safety glasses with side shields, coveralls, utility belt or small backpack. Clean PPE: Hard hat (with cap lamp mounting hardware as required). 	<ul style="list-style-type: none"> Compliance with SDSTA PPE policy and inventory control system. General underground PPE: safety-toe footwear, prescription safety glasses with side shields. Clean PPE: all except items provided by SDSTA, including safety-toe footwear. Self-rescuer: compliance with monitoring program.

	<ul style="list-style-type: none"> • Self-rescuer. • Self-contained self-rescuer. • Fall arrest and fall restraint equipment. • Some specialized PPE (e.g., COVID-19, LBNF construction): Surgical face mask, face shield, gloves, respirator, and filters (as available). • Respirator fit tests and medical evaluations as requested. 	<ul style="list-style-type: none"> • Specialized cleanroom PPE: All, including dedicated hard hats for Experiment-specific clean spaces as necessary. • Costs for enrolling Experiment members in SDSTA prescription glasses program. • Specialized PPE beyond what SDSTA requires and can provide.
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2. Research Areas – Surface or Underground (as appropriate)	SDSTA	Experiment
Facility	<ul style="list-style-type: none"> • Maintain safe access, inspections of general Experiment area. • Interfacing of Experiment equipment to the facility as possible. • Maintenance and common facility AHU filters. • Common facility equipment (some ladders, pallet jack). • Common clean laboratory supplies (tacky mats, some boot covers). 	<ul style="list-style-type: none"> • Costs for interfacing Experiment equipment to the facility, including labor if not provided by SDSTA. • Costs for interfacing Experiment equipment to the facility, including labor if not provided by Laboratory. • Clean laboratory supplies as part of Experiment-specific cleanliness protocols. • Any capital improvements or specialized equipment. • Filters for any Experiment-purchased equipment.
Safety Systems and Equipment	<ul style="list-style-type: none"> • Fire suppression: manage maintenance and inspections. • Safety shower: manage testing, maintenance. • Eye wash stations: manage testing, maintenance. • Fire extinguishers: equipment, maintenance, inspections. • First-aid kits: equipment, maintenance. • Proper signage of safety systems. 	<ul style="list-style-type: none"> • Any special process safety equipment, including spill kits and chemical testing equipment. • Assistance with maintenance and inspections in clean spaces as required.
Cleaning Services	<ul style="list-style-type: none"> • General cleaning, assistance receiving items into clean laboratory area. • General laboratory cleaning supplies. • Trash removal. 	<ul style="list-style-type: none"> • Maintain tidiness, cleanliness above what cleaning service provides. • Cleaning inside cleanrooms other than provided by SDSTA.
Cleanroom Supplies	Cleanroom supplies in general areas as required: tacky mats, boot covers.	Specialized cleanroom supplies for Experiment-specific areas.
Monitoring	Maintenance, management, monitoring, and costs associated with facility items: <ul style="list-style-type: none"> • Portable gas testers. • Fire alarm. • Oxygen monitors. • CO sensors. 	Any other monitoring.

	<ul style="list-style-type: none"> Any additional sensors required and installed by the SDSTA. 	
Utilities/Services	<p>Maintenance, management, and costs associated with facility items:</p> <ul style="list-style-type: none"> Potable and industrial water. Fire suppression water supply. Precooler/dehumidification system. HVAC, including filter replacements and associated costs. Drinking water. Gray and black water, toilet facilities. Power: 480/208/110 VAC, unconditioned, diesel generator (mainly fire and life safety). 	<ul style="list-style-type: none"> Uninterruptable power supplies as required. Change orders and material costs for new additional services, labor costs if not provided by SDSTA staff.
Snow Removal	Approaching roadways and access pathways to the Yates Headframe.	Any areas in the vicinity for storage/staging.

3. Other Considerations	SDSTA	Experiment
Experiment Equipment and Other Experiment Personal Property	Liable for damages of property in the care, custody, or control of, or arising out of handling by, the SDSTA or SDSTA personnel or contractors, but only in the amount covered by existing SDSTA general liability policies, and not to exceed \$2,000,000.00 for any one occurrence and \$2,000,000.00 in any calendar year. ¹	Liable for damages due to handling by Experiment collaborators or their agents such as sub-contractors or equipment service personnel.
General Liability Insurance Coverage	Policy purchased from a commercial insurance company covering certain Experiments for personal injury in some circumstances up to \$5,000,000.00 per occurrence and aggregate, with a \$5,000 deductible. This policy does NOT include coverage for claims made by one experiment against another ² .	Coverage (from a commercial insurance company or self-insurance acceptable to SDSTA) with limits of liability as determined by the SDSTA using its risk assessment process and in conformity with its Risk Transfer Protocols.

¹ In no event shall SDSTA be liable to the Experiment or any other person or entity for any property damages in excess of the Two Million Dollars (\$2,000,000.00), or for any indirect, incidental, exemplary, or punitive damages arising from any property damage claim, whether such claim is based on warranty, contract, tort (including negligence or strict liability or willful or intentional breach) or otherwise, even if an authorized representative of the Experiment is advised of the possibility or likelihood of the same.

² Experiments covered by this insurance include LUX-ZEPLIN (LZ), MAJORANA DEMONSTRATOR (MJD), Compact Accelerator System for Performing Astrophysical Research (CASPAR), Black Hills State University Underground Campus, Thermal Breakout and EGS Collab - SIGMA-V. All groups, including those listed, must provide evidence of liability insurance coverage as described above.

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