DOE NEPA Tracking Number

U. S. DEPARTMENT OF ENERGY, OFFICE OF SCIENCE

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)
ENVIRONMENTAL EVALUATION NOTIFICATION

To be completed by "Applicant," i.e., organization with responsibilities for a "Federal action" involving application to DOE for a permit, license, exemption or allocation, or other similar actions. For assistance, refer to "Instructions for Preparing Environmental Evaluation Notification."

Solicitation/Award No. (if applicable): DE-SC0020216

Organization Name: South Dakota Science and Technology Authority

Proposed Action Title: Generic CX: Operation and Maintenance of the Sanford Underground Research Facility

Total DOE Funding/Total Funding: NA

I. Project Description: ***(Use explanation pages if additional space is required)***

A. Proposed Project/Action (if applicable, delineate Federally funded/Non-Federally funded portions)

The Department of Energy intends to fund operation and maintenance actions at the Sanford Underground Research Facility (SURF). Actions would be both above and below ground. Actions would be limited to operation and maintenance in support of, but not to include, the science experiments performed at SURF. Key experiments are described and associated impacts are identified in the Environmental Assessment for the Construction and Operation of the Long Baseline Neutrino Facility and Deep Underground Neutrino Facility at Fermilab, Batavia, Illinois and Sanford Underground Research Facility, Lead, South Dakota (DOE EA-1943).

(See continuation pages for additional information)

B. Would the project proceed without Federal funding? Yes ☐ No ☑

If "yes," use explanation page.

II. Description of Affected Environment: ***(Use explanation pages if additional space is required)***

SURF is located in the City of Lead, Lawrence County, South Dakota, which is in the west central part of the State, near the Wyoming border. It occupies the site of the old Homestake Mine, which operated from 1876 through 2002. The population of Lead is approximately 3,000 and Lawrence County, approximately 25,000.

(See continuation pages for additional information)

III. Preliminary Questions:

		Yes	No
A.	Is the DOE-funded work routinely administrative or *entirely* advisory or a "paper study?"	☐	☑

If "Yes", ensure that the description in Section I reflects this and go directly to Section V.

B. Is there any potential whatsoever for: (***Provide an explanation for each "Yes" response)***

1.	Work to be performed outdoors?	☑	☐
2.	Major modification of a building facade or interior?	☑	☐
3.	Threat of violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health?	☐	☑
4.	Siting, construction or major expansion of waste treatment, storage, or disposal facilities?	☐	☑
5.	Disturbance to hazardous substances, pollutants, or contaminants preexisting in the environment?	☐	☑
6.	The presence of any environmentally-sensitive resources?	☑	☐
7.	Any potential whatsoever for high consequence impacts to human health or the environment?	☑	☐
8.	The work being connected to another existing/proposed activity that could potentially create a significant impact?	☐	☑
9.	Nearby past, present, and/or reasonably foreseeable future actions such that collectively significant impacts could result?	☐	☑
10.	Scientific or public controversy, uncertainty over potential impacts, or conflicts regarding resource usage?	☐	☑

If "No" to ALL Section III.B. questions, go directly to Section V.

IV. Potential Environmental Effects: (***Provide an explanation for each "Yes" response)***

A. Environmentally Sensitive Resources: Could the proposed action potentially result in changes and/or disturbances to any of the following resources?

		Yes	No
1.	Threatened/Endangered Species and/or Critical Habitats	☐	☑
2.	Other Protected Species (e.g., Burros, Migratory Birds, Pollinators)	☐	☑
3.	Tundra, Coral Reefs, or Rain Forests	☐	☑
4.	Cultural or Historic Resources	☑	☐
5.	Important Farmland	☐	☑
6.	Non-Attainment Areas for Ambient Air Quality Standards	☐	☑
7.	Class I Air Quality Control Region	☐	☑
8.	Special Sources of Groundwater (e.g., Sole Source Aquifer)	☐	☑
9.	Navigable Air Space	☐	☑
10.	Coastal Zones	☐	☑
11.	Areas with Special National Designation (e.g. National Forests, Parks, Trails)	☑	☐
12.	Floodplains and/or Wetlands	☐	☑

B. Regulated Substances/Activities: Would the proposed action involve any of the following regulated Items or activities?

13.	Natural Resource Damage Assessments	☐	☑
14.	Invasive Species or Exotic Organisms	☐	☑
15.	Noxious Weeds	☐	☑
16.	Clearing or Excavation greater than one acre or Removal of Trees Governed by Local Requirement	☑	☐
17.	Dredge or Fill (under Clean Water Act, Section 404, greater than one acre)	☐	☑

B. Regulated Substances/Activities: Would the proposed action involve any of the following regulated Items or activities? (*continued*)

		Yes	No
18.	Noise (in excess of regulations)	☐	☑
19.	Asbestos Removal	☑	☐
20.	Polychlorinated biphenyls (PCBs)	☐	☑
21.	Import, Manufacture, or Processing of Toxic Substances	☐	☑
22.	Chemical Storage/Use Including Emerging Chemicals (e.g., PFAS)	☑	☐
23.	Pesticide Use	☑	☐
24.	Hazardous, Toxic, or Criteria Pollutant Air Emissions	☐	☑
25.	Liquid Effluents	☑	☐
26.	Spill Prevention/Surface Water Protection	☑	☐
27.	Underground Injection	☑	☐
28.	Hazardous Waste	☑	☐
29.	Underground Storage Tanks	☐	☑
30.	Radioactive or Radioactive Mixed Waste	☐	☑
31.	Radiation Exposure	☐	☑
32.	Nanoscale Materials	☐	☑
33.	Genetically Engineered Microorganisms/Plants or Synthetic Biology	☐	☑
34.	Ozone Depleting Substances	☐	☑
35.	Greenhouse Gas Generation/Sustainability	☑	☐
36.	Off-Road Vehicles	☑	☐
37.	Biosafety Level 3-4 Laboratory	☐	☑
38.	Research on Human Subjects or other Vertebrate Animals	☐	☑
39.	Facility footprint exceeds 5,000 Square Feet	☑	☐

C. Other Relevant Information: Would the proposed action involve the following?

		Yes	No
40.	Disproportionate Nearby Presence of Minority and/or Low Income Populations	☐	☑
41.	Existing, Modified, or New Federal/State Permits	☑	☐
42.	Involvement of Another Federal Agency (e.g. license/permit, funding, approval)	☐	☑
43.	Action in a State with NEPA-type law	☐	☑
44.	Action Would Require Expansion of Public Utilities/Services	☑	☐
45.	Depletion of a Non-Renewable Resources	☐	☑
46.	Subject to an Existing Institutional Work Planning and Control Process	☑	☐
47.	Other Pertinent Information Which Could Impact Human Health or the Environment	☐	☑

V. Applicant certification that to the best of their knowledge all information provided on this Notification is accurate:

	Yes	No
Does this disclosure contain: classified, sensitive business, or other exempt information that DOE would not be obligated to disclose pursuant to the Freedom of Information Act.	☐	☑

A. Organization Official (Name and Title): Julie Ewing, Director of Environmental, Safety, and Health

Signature: Julie Ewing Digitally signed by Julie Ewing Date: 2024.07.29 13:36:11 -06'00' Date:

e-mail: jewing@sanfordlab.org Phone: 605-722-5086

B. Optional Secondary Approval (Name and Title): Mike Headley, Director of SURF Laboratory

Signature: Date: 2024.07.29 14:03:44 -06'00' Date: 7/29/2024

e-mail: mheadley@sanfordlab.org Phone: 605-722-4060

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Remainder to be completed by DOE

VI. DOE Concurrence/Recommendation/Determination:

A. DOE Project Director/Program Manager or Contract/Grant Management Specialist:

	Yes	No
Has the Applicant completed this Notification correctly?	☑	☐
Does an existing generic categorical exclusion apply?	☐	☑

If yes, indicate: NA

Name and Title: Clayton Hollowell, Program Manager

Signature: CLAYTON HOLLOWELL Digitally signed by CLAYTON HOLLOWELL Date: 2024.07.31 11:41:48 -06'00' Date:

B. DOE NEPA Team Review (if requested):

	Yes	No
Is the class of action identified in the DOE NEPA Regulations (Appendices A-D to Subpart D (10 CFR § 1021))?	☑	☐

If yes, specify the class(es) of action: See Sect VI.B of the continuation pages

Name and Title: Jayashree Jayaraj, NEPA Team

Signature: JAYASHREE JAYARAJ Digitally signed by JAYASHREE JAYARAJ Date: 2024.08.01 09:47:38 -05'00' Date:

C. DOE Counsel (if requested):

Name and Title: Michelle McKown, Assistant Chief Counsel

Signature: MICHELLE MCKOWN Digitally signed by MICHELLE MCKOWN Date: 2024.08.01 08:02:22 -05'00' Date:

D. DOE NEPA Compliance Officer:

The preceding pages are a record of documentation required under DOE Final NEPA Regulation, 10 CFR § 1021.410.

☑ Action may be categorically excluded from further NEPA review. I have determined that the proposed action meets the requirements for Categorical Exclusion referenced above.

☐ Action requires approval by Head of the Field Organization. Recommend preparation of an Environmental Assessment.

☐ Action requires approval by Head of the Field Organization or the SC Director of Field Operations. Recommend preparation of an Environmental Impact Statement.

Comments/limitations if any:

Conditions apply. (See continuation pages)

NEPA Compliance Officer:

Name: Peter Siebach

Signature: PETER SIEBACH Digitally signed by PETER SIEBACH Date: 2024.08.05 15:09:25 -05'00' Date:

Environmental Evaluation Notification: Continuation/Explanation Pages

South Dakota Science and Technology Authority

Generic CX: Operation and Maintenance of the Sanford Underground Research Facility

Section I.A. Project Description, Proposed Project/Action:

Specific kinds of work to be performed at SURF would include:

1. Facility Maintenance, including but not limited to:
    - Maintaining existing equipment
    - Maintaining existing property

2. In-kind equipment replacement, including but not limited to: replacing worn-out equipment. This equipment is often critical to workplace safety and compliance. In many instances worn-out, existing equipment is old and can no longer be replaced in-kind as manufacturers no longer support or make such equipment. The purchase of newer, safer, and more energy efficient equipment is appropriate to maintain facility operations. Examples of such equipment include exhaust fans, hoist parts, pumps, pipe, Programmable Logic Controllers (PLCs), vehicles, rail (primarily underground to promote movement of personnel and equipment), and conveyances (the lifts that go up and down the shafts).

3. Fire-life safety additions and improvements, including but not limited to:
    - Maintaining and installing fire alarms and fire suppression systems on the surface and underground
    - Maintaining and improving underground refuge chambers (in the event of a fire underground)
    - Maintaining and installing underground air doors to help control ventilation in the event of a fire

4. Security additions and improvements, including but not limited to:
    - Fencing
    - Installing gates
    - New doors and locks
    - Installing a centralized dispatch to provide 24-hour site monitoring and control

5. Safety, including but not limited to:
    - Replacing outdated safety equipment
    - Lightning protection
    - Installing back-up power to important life-safety and environmental compliance equipment which include the hoists, ventilation fans and wastewater treatment
    - Improving existing roadways to facilitate site traffic from interacting with residential neighborhoods and to improve traffic flow

6. Monitoring, including but not limited to:
    - Electronic monitoring of site electrical usage

- Electronic tracking of site personnel underground
- Electronic tracking of water inflows

7. Structural maintenance of the underground openings (shafts, drifts, ramps, and Surface buildings), including but not limited to:
- Shaft clearing and stabilization (rock bolting, steel supports, and wire mesh)
- Drifts (horizontal tunnels) stabilization (primarily rock bolting, wire mesh installation, and shotcrete)
- Ramps (underground connector tunnels that connect different horizontal levels) stabilization that includes rock bolting and wire mesh installation
- Repairing and replacing windows, brick mortar, and roof drains
- Repair or replacement of existing building entryways
- Replacing and adding water lines

8. Sanitary and potable water replacement and upgrades, including but not limited to:
- Replacing and adding potable and raw (untreated potable) water lines

9. In-kind power transmission line replacement (small scale), including but not limited to, power line replacement for aged or non-compliant wiring (12KV-69KV)

10. Energy Conservation, including but not limited to:
- Interception of ground water and surface water at the upper levels of the underground to reduce pumping costs, mitigate ponding near shafts and to help promote treatment of water (mixing to help reduce temperature and total dissolved solids before discharge)
- Modify piping at the wastewater treatment plant (WWTP) to promote gravity flow through the WWTP

11. Ventilation and cooling, including but not limited to:
- Replacing and upgrading (increasing) the cooling and dehumidification of the active science-occupied areas underground. The underground air is warm, humid and contains particulate. This air negatively effects sensitive science equipment unless it is cooled, dehumidified, and filtered. This air treatment equipment is constantly being replaced or modified to help maintain science air space.

Although not intended to be a complete list of all actions covered by this NEPA determination, the following list of currently planned/contemplated actions through 2029 provides specific examples of activities that would be covered:

1. Project Name: Yates Hoists Upgrades
Description: The existing cage brake and clutch system and the Motor-Generator (MG) sets are 1930's technology. This project replaces the existing gravity set, low-pressure, high-volume braking system with a high-pressure PLC controlled engagement and install a new clutch and replace the existing MG sets with modern Variable Speed Drive technology.

2. Project Name: Electrical Distribution Rehab; Phase 2
Description: The Yates Complex contains SURF's oldest power distribution equipment still in use today. Project will restructure the power distribution layout at the Yates Complex to best serve the property's science mission including by consolidating numerous antiquated and obsolete substations.

3. Project Name: 2450L Pumproom System Rehabilitation
Description: The existing dewatering system at the 2450L is not a modern design and parts availability and spare pumps are becoming a significant concern. This project will replace pump and piping and stabilize ground conditions.

4. Project Name: 5000L Pumproom System Rehabilitation
Description: The existing dewatering system at the 5000L is not a modern design and parts availability and spare pumps are becoming a significant concern. This project will replace pump and piping and stabilize ground conditions.

5. Project Name: WWTP System PLC Recapitalization
Description: Existing WWTP PLC/control systems are 1990's vintage and obsolete with replacement parts becoming a significant challenge to source. Project will begin replacing control systems following the Rotating Biological Reactor (RBC) Replacement.

6. Project Name: Upgrade Ross/Davis Campus Fire Alarms
Description: The underground 4850L fire alarm systems for the Ross and Davis Campuses are a combination of separate, independent systems. These systems need to be upgraded and networked together and additional detection added in the common spaces and drifts. This project would integrate existing underground (UG) systems, extend coverage in UG areas, and provide communications to the surface.

7. Project Name: Reconstruction Ellison Hill Roadway
Description: Lab access to the Yates Complex is through heavy residential areas. Rebuild the existing roadway on the Ellison Hill property to create a new lab access connector from Lead to the Yates Complex and stabilize failing retaining walls and embankments.

8. Project Name: Replace 12.47kV Interior Switchgear and 69kV Circuit Switcher at Various Substations
Description: The 12.47kV switchgear at the Oro Hondo and Ross Substations were manufactured in 1999. The life expectancy of the medium-voltage breakers within the switchgear is only 20 years. The 69kV circuit switcher at the Oro Hondo Substation was manufactured in 1995. The life expectancy of circuit switchers is 20 years. The two capacitor banks are also beyond useful life. This project will modernize/replace these critical components of SURF's power distribution.

9. Project Name: Replace Davis Campus Heating, Ventilation, and Air Conditioning (HVAC)
Description: The HVAC systems support all science in the Davis campus have been operating for 10-15 years and are reaching the end of their service life. Replace antiquate HVAC systems with upgraded technology to include chilled water distribution systems.

10. Project Name: Ross Hoist Room Roof Replacement

Description: Replace roof constructed in 2011 and upgrade to meet present structural codes.

11. Project Name: Excavate Oro Hondo Shaft
Description: The Oro Hondo Ventilation Shaft extends to the 4100. Spalled shaft wall rock has accumulated to the 3800L area. This project will remove spalled material at the 3950L to create freeboard below the 3650L LBNF ventilation new raise connection.

12. Project Name: Fire Alarm Installation - Yates Admin & E&O Building
Description: The Yates Admin and E&O buildings do not currently have modern functioning fire alarm systems. Alarms for personnel consist of air horns. Based on their use, these facilities require upgrades to protect personnel and meeting todays building codes.

13. Project Name: New Surface Science Assembly Facility
Description: Convert an exist or construct new 4000 sq ft science experiment assembly facility to support new experiments coming to SURF.

14. Project Name: Ross Dry & EO Building Roof Replacement
Description: Existing roofs are nearing twenty years in age and require replacements to eliminate leaking and property damage for these admin facilities.

15. Project Name: Replace Power Feeder to WWTP
Description: The feeder conductors to the WWTP consist of a section of buried cable between the East Switchyard and Yates Compressor Building plus a section of overhead power lines from the Yates Compressor Building to the WWTP. Based on age, condition, and criticality, it was recommended by the A-E firm that these conductors be replaced as part of the facility's medium-voltage recapitalization program.

16. Project Name: Asphalt Paving, Ross Complex
Description: Much of the existing surface area in the Ross Complex is gravel and not capable of sustaining the level of traffic expected in the next 20 years in support of DUNE. Project would pave areas around existing warehouse, maintenance spaces and the Ross Dry.

17. Project Name: Substation Lightning Protection
Description: Upgrade Ross Complex Substation lightning protection system to meet current code.

18. Project Name: Upgrade Ross Headframe
Description: Existing headframe concrete floor is not level creating uneven surfaces for moving materials. The west access doorway in not large enough to accommodate loading large equipment directly into the shaft. The west side material handling hoist has been derated due to structural limits. This project will repair and upgrades these systems for support to science outfitting and operational support.

19. Project Name: Facility Power Monitoring and Controls

Description: Upgrade surface and underground electrical distribution system metering and monitoring capabilities.

20. Project Name: Stabilize 6 Winze Shaft 4550L-5000L
Description: Winze was built in the early 70's. Flooding of shaft has degrade set steel and ground support. Shaft is a critical pathway for dewatering systems and ventilation. Project would update ground support and stabilize set steel in place.

21. Project Name: Replace Ross Hoist Room Windows and Doors
Description: Replace existing windows to eliminate leaks and reduce heating demands in hoist room.

Section II. Description of Affected Environment:

The Homestake Mine was developed as a surface and underground mine. The City of Lead developed to support the mining and miners. Over the years, Homestake designed and constructed major city infrastructure changes such as removal and building of roads, installation of utilities, and the moving of residences to accommodate its mining activity. Utilities such as water, electricity and sewer were often operated by Homestake for use by the mine and the city. In addition, hospitals, recreational facilities, libraries, and entertainment were provided by Homestake to help Lead become a cultural center. Homestake was integral to the City of Lead. In the1990s Homestake recognized it was time to disengage itself from Lead's utility operation in anticipation of closure. Water and electric were segregated, and portions given to the city.

The mine closed in 2002 and subsequently donated to the State of South Dakota. The state's legislature created the South Dakota Science and Technology Authority (SDSTA) to own and manage the laboratory. In 2006, SURF was established at the mine site to study high energy physics, including the properties of neutrinos, and today, hundreds of scientists come to the site annually to conduct underground experiments.

There are two general areas to the site: an underground portion and a surface portion. The underground portion encompasses over 300 miles of shafts, winzes, and drifts. Currently, only about 12 miles of these opening are maintained and used. The surface portion of the site contains approximately 228 acres including 25 buildings which supported mining. Many of these buildings are older than 50 years. Approximately 15 buildings are used and maintained. Approximately 90% of the 228 surface acres has been previously disturbed by mining activity.

Section III.B, Preliminary Questions, Is there any potential whatsoever for:

1. Work to be performed outdoors?

Work will be performed at SURF both above and underground, indoors, and outdoors.

2. Major modification of a building interior?

Many preexisting buildings at SURF are still functional and could be modified for use. The procedures in item 6 below would be applicable.

6. The presence of any environmentally sensitive resources?

Some surface buildings at SURF may be eligible for listing on the National Register of Historic Places. In October 2015, a Programmatic Agreement (PA) was drafted by the United States Department of Energy, the Advisory Council on Historic Preservation, the South Dakota Science and Technology Authority, and the South Dakota Historic Preservation Officer Regarding Construction and Operation of the Long-Baseline Neutrino Facility/Deep Underground Neutrino Experiment. It has been included in the Environmental Assessment for the Construction and Operation of the Long Baseline Neutrino Facility/Deep Underground Neutrino Experiment at Fermilab, Batavia, Illinois, and Sanford Underground Research Facility, Lead, South Dakota, DOE/EA-1943, September 2015. Procedures are included in the PA that must be followed when an operations and maintenance and/or construction activity could impact a historic property.

For nearly 100 years, Homestake discharged wastewater and ground waste rock debris without treatment directly into Whitewood Creek, a cold-water stream that flows from its headwaters in the mountain valleys south of Deadwood to its confluence with the Belle Fourche River northeast of the city of Whitewood. In the late 1970s and 1980s this unregulated practiced was discontinued. Waste rock slurry was piped to a constructed tailing dam. Process water and underground dewatering water was treated by a new WWTP. The WWTP's discharge was (and is) a permitted National Pollution Discharge Elimination System (NPDES) outfall. SURF continues to pump, treat, and discharge groundwater governed by a NPDES permit. SURF has been treating water since June 2008 and since that time there has not been a violation of this permit. Whitewood Creek is a healthy cold-water stream supporting good to excellent trout, trout reproduction and trout food (Mayflies, Caddisflies, and Stoneflies) according to annual, independent, third-party, biological monitoring studies.

7. Any potential whatsoever for high consequence impacts to human health or the environment?

There would be a risk of workplace accidents. These risks would be minimized through the implementation of a workplace safety and health management program. Moreover, covered actions would include those intended to directly enhance environmental protection and workplace safety.

Section IV.A. Potential Environmental Effects, Environmentally Sensitive Resources:

4. Cultural or Historic Resources

See Section III.B.6. above

11. Areas with Special National Designation (e.g., National Forests, Parks, Trails)

Black Hills National Forest surrounds the City of Lead and the SURF site, with neither abutting it.

Although there is no special "national" designation, the George S. Mickelson Trail runs through the heart of the Black Hills, connecting Deadwood with Edgemont. This former railroad grade is a 109-mile State of South Dakota trail managed by South Dakota Game, Fish, and Parks and the city of Deadwood. The trail is adjacent to the south of the SURF property.

There would be little to no impact on the forest or the trail from SURF operations and maintenance activities.

Section IV.B. Potential Environmental Effects, Regulated Substances/Activities:

16. SURF is an excavation and was covered in the Environmental Assessment.

19. Asbestos Removal

Asbestos may be encountered in remodeling or demolition activities. Remediation efforts would be implemented consistent with applicable laws and regulations.

22. Chemical Storage/Use

Minor volumes would be stored and used in operations and maintenance activities. Chemicals will be safely managed according to permits, State of Federal law, or best management practices/procedures. Estimated types and approximate quantities of non-hazardous waste that would result are as follows:

Cleaning Agents (shelf-brand cleaning agents) -- 50 gallons/year
Oil and Grease (recycled where possible) -- 500 gallons/year
Glycols -- 300 gallons/year
Fluorescent Bulbs (universal waste) – 500 pounds/year
Batteries (universal waste) -- 700 pounds/year

23. Pesticide Use

Minimal levels of pesticides and herbicides would be used for weed, insect, and rodent control.

25. Liquid Effluents

Storm water infiltrating the underground is pumped and treated at the WWTP and then discharged to Whitewood Creek in compliance with NPDES permit requirements.

26. Spill Prevention/Surface Water Protection

Construction contractors would be required to minimize fugitive dust emissions and construction impacts on air and water quality. Standard environmental protection measures are outlined in SURF manuals and would include preparation of a Storm Water Pollution Prevention Plan (SWPPP) outlining appropriate storm water best management practices (BMPs) and Spill Pollution Prevention and Control (SPCC) requirements. BMPs would be tailored to the site and would include placing erosion control measures (e.g., silt fence, straw bales), preserving existing vegetation, covering stockpiled soil, sweeping access roads, and spraying disturbed areas with water. Spill control measures would include double-walled fueling tanks, secondary containment, and spill kits.

27. Underground Injection

Fluids discharged into the underground, other than natural groundwater and storm water, require review and approval by SURF, the Environmental Protection Agency (EPA), and the state of South Dakota. The EPA issues an Underground Injection Control authorization for a discharge(s) fluid provided it does not significantly impact groundwater quality. For example, condensate generated from underground air interacting with cold experiment apparatuses (e.g., detectors) generates an approximate 5-gallon per minute discharge to the underground pool. The discharge was reviewed by the EPA and found to not significantly impact groundwater. The discharge was authorized under the EPA's and state programs. SURF's standard is that all fluid discharges to the underground must be reviewed and approved, in consultation with the EPA and state before the discharge can take place. There are currently nine authorized discharges to the underground pool.

28. Hazardous Waste

SURF typically generates between 220 and 2200 pounds of hazardous waste per month, classifying it as a Small Quantity Generator of hazardous waste under the Resource Conservation and Recovery Act (RCRA). Common hazardous wastes include corrosives, aerosol cans, paints, solvents, and compressed gas cylinders.

35. Greenhouse Gas Generation/Sustainability

Estimated GHG emissions from SURF would be below 25,000 tonnes per year.

36. Off-Road Vehicles

SURF staff operate approximately 8 quad runners or similar type vehicles. These operate solely on site (underground and surface).

39. Facility footprint exceeds 5,000 Square Feet

Although the SURF site is larger than 5,000 square feet, should an individual building with greater area be planned, a separate NEPA review would be performed.

41. Existing, Modified, or New Federal/State Permits

SURF's NPDES discharge permit (SD0000043) expired in 2012. SURF was authorized a continuance to discharge under the expired permit until a new permit is issued. A new permit has not yet been re-issued by the state (which has been delegated the Clean Water Act/NPDES oversight by the EPA). Other permits include:

- EPA, Permit by Rule for Class V Injection Well (letter), Injection of tailing water into the 1250’ sump under emergency conditions
- EPA, Permit by Rule for Class V Injection Well (letter), Injection of brine from Majorana Demonstrator Reverse Osmosis (RO) unit to underground

- EPA, Permit by Rule for Class V Injection Well (letter), Injection of various fluids (wash water, Simple Green, Micro-90, ECOS laundry detergent)
- EPA, Permit by Rule for Class V Injection Well (letter), Injection of tailing water and mine water to the 1250' sump to help warm water during winter (cold) conditions
- EPA, Permit by Rule for Class V Injection Well (letter), Injection of wastewater from modular sanitary wastewater treatment plants at the Yates and Ross stations
- EPA, Permit by Rule for Class V Injection Well (letter), Injection of Seepage collection water from Barrick's Grizzly Gulch Dam under emergency conditions and during repairs to the seepage collection vault
- EPA, Permit by Rule for Class V Injection Well (letter), Injection of tracer chemicals from SIGMA-V
- South Dakota Department of Agriculture and Natural Resources (SDDANR), Water rights permit 1880-1, The right to withdraw and treat up to 1500 gpm of mine water
- SDDANR, Letter regarding air emissions, Letter authorizing the operation without a permit (insignificant source) the soda ash silo; the WWTP emergency generator; Davis Campus Sources; IT emergency generator; 4850' Refuge Area emergency generator; MJD-TCR emergency generator; Davis Campus emergency generator
- SDDANR, Surface Water Discharge Permit No. SD-0000043, Discharge of process water from SURF's wastewater treatment plant
- SDDANR, Surface Water Discharge Permit No. SD-0028143, Discharge of mine water without blending Grizzly Gulch Dam process water
- SDDANR, General Storm Water Discharge Permit for Industrial Activities, Permit No. SDR000000, Discharge of storm water from SURF's surface facilities
- SDDANR, Solid waste disposal: Authorization by letter, Solid waste disposal of iron sludge in the Rapid City Landfill
- SDDANR, Tri-Cities Landfill. Authorization by letter, Disposal of construction/demolition debris (brick, concrete and uncontaminated scrap wood and limited waste rock)
- SDDANR, Authorization to discharge to Lead-Deadwood Sanitary District (letter), Allows SURF to discharge sludge to the Lead-Deadwood Publicly Owned Treatment Works (LDPOTW) from:
    - Clarifier underflow
    - Backwash from effluent sand filters
    - Geo-textile bag effluent
    - RBC basin sludge
- SDDANR, Authorization to discharge MJD neutralized electroforming acid to the LDPOTW. This authorization is conditional that SURF meet Metal Finishing Standards set by EPA (see 40 CFR 433.10)
- Pennington County, Rapid City Landfill, Authorization to dispose of iron sludge from mine dewatering into the Rapid City Landfill
- Lawrence County, Lead-Deadwood Sanitary District: Authorization by letter to discharge sand filter backwash water to Lead-Deadwood Sanitary District

44. Expansion of Public Utilities/Services

Although various projects are anticipated that would involve public utilities/services, none would drive the need for a general expansion of their infrastructure/capacity for them to provide services to SURF.

46. Subject to an Existing Institutional Work Planning and Control Process

SURF continually evaluates their work for conditions which could impact human health or the environment. Potential issues would be identified during work planning and addressed by engineering, administrative controls, and the proper use of personal protective equipment. Depending on issues identified, work tasks would require job hazard analyses or standard operating procedures. Daily toolbox talks and work planning meetings would address risks to workers and the public and corresponding avoidance measures.

Section VI.B. DOE NEPA Team Review (if requested). Is the class of action identified in the DOE NEPA Regulations (Appendices A-D to Subpart D (10 CFR § 1021))?

The following categorical exclusions apply to the Proposed Action:

A.1 - Routine DOE business actions
A.2 - Clarifying or administrative contract Actions
B1.3 - Routine maintenance
B1.7- Electronic equipment
B1.15 - Support buildings
B1.16 - Asbestos removal
B1.27 - Disconnection of utilities
B1.31 - Installation and relocation of machinery and equipment
B2.1 - Workplace enhancements
B2.2 - Building and equipment instrumentation
B2.3 - Personnel safety and health equipment
B2.5 - Facility safety and environmental improvements
B3.1 - Site characterization and environmental monitoring
B4.6 - Additions and modifications to transmission facilities
B4.11 - Electronic power substations and interconnected facilities
B4.12 - Construction of powerlines
B4.13 - Upgrading and rebuilding existing powerlines
B5.1 - Actions to conserve energy
B5.2 - Modification to pumps and piping
B5.3 - Modification and abandonment of wells
B5.4 - Repair or replacement of pipelines

The full text of each categorical exclusion is available in Subpart D of 10 CFR Part 1021.

Section VI.D. NEPA Compliance Officer, Comments/limitations if any:

To fit within this categorical exclusion determination:

1) An action must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

2) There would be no extraordinary circumstances (i.e., scientific, or public controversy) related to the significance of environmental effects (10 CFR 1021.410 (b)(2)). An action would not be connected to other actions with potentially significant impacts (10 CFR 1021.410 (b)(3). The action would not be related to other nearby actions with the potential for cumulatively significant impacts (10 CFR 1021.410 (b)(3)).

Should the scope of an action fall outside of the applicant's disclosure documented in this Form, not be covered by the categories of action identified in Section VI.B., or not meet the two numbered conditions above, a separate NEPA document would need to be prepared and submitted to the applicable DOE NEPA Compliance Officer for a determination.