

Deactivated SM-1A Nuclear Reactor Facility Decommissioning and Dismantlement Final Environmental Assessment

JUNE 2021



UNITED STATES ARMY GARRISON ALASKA FORT GREELY
DELTA JUNCTION, ALASKA



**US Army Corps
of Engineers®**



**DEPARTMENT OF DEFENSE
DEPARTMENT OF THE ARMY**

**FINDING OF NO SIGNIFICANT IMPACT
DECOMMISSIONING AND DISMANTLEMENT OF THE DEACTIVATED
SM-1A NUCLEAR POWER PLANT**

United States Army Garrison Alaska Fort Greely
Delta Junction, Alaska

Proposed Action

The United States Army Corps of Engineers (USACE) provides notice that a Final Environmental Assessment (EA) and Finding of No Significant Impact (FNSI) have been prepared for the Army's Proposed Action to decommission and dismantle the Deactivated Stationary Medium Power Model 1A Nuclear Power Plant (SM-1A) at United States (U.S.) Army Garrison Alaska Fort Greely (Fort Greely) and release the property for unrestricted use.

Under the Proposed Action, USACE would 1) complete the proposed decommissioning and dismantlement of SM-1A in accordance with a Decommissioning Plan (DP) approved by the Army Reactor Office (ARO); 2) terminate the SM-1A decommissioning permit issued by the U.S. Army Deputy Chief of Staff G-3/5/7 through the ARO; and 3) release the SM-1A site for unrestricted use in accordance with U.S. Nuclear Regulatory Commission (USNRC) regulations established in 10 Code of Federal Regulations (CFR) 20.1402, *Radiological Criteria for Unrestricted Use* and adopted by the Army. Implementation of the Proposed Action would occur over approximately 6 years beginning in 2022 and ending in 2028.

The Final EA and FNSI have been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (Title 42, United States Code [USC] 4321 et seq.); Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508, *CEQ Regulations for Implementing the Procedural Provisions of NEPA*)¹ (1978, as amended in 1986 and 2005); and the Army's NEPA regulations (32 CFR 651, *Environmental Analysis of Army Actions*).

USACE has thoroughly reviewed the Proposed Action and determined that it would not have significant adverse effects on the natural or human environment. Therefore, the Proposed Action does not require the preparation of an Environmental Impact Statement (EIS) as defined in 32 CFR 651.41, *Conditions requiring an EIS*, and 32 CFR 651.42, *Actions Normally Requiring an EIS*.

¹ Substantive preparation of the EA began prior to updates to the regulations implementing the provisions of NEPA that became effective on 14 September 2020. Therefore, the EA has been prepared in accordance with the NEPA regulations that were previously in effect.

Purpose and Need

The **purpose** of the Proposed Action is to safely remove, transport, and dispose of all materials and equipment, structures, and residual contamination associated with SM-1A; release the SM-1A site for unrestricted use in accordance with radiological dose criteria established by the USNRC in 10 CFR 20.1402 and adopted by the Army; and terminate the U.S. Army-issued SM-1A decommissioning permit. The **need** for the Proposed Action is to complete the decommissioning of SM-1A within 60 years (by 2032) of permanent cessation of operations in accordance with USNRC regulations 10 CFR 50.82(a)(3) and AR 50-7.

Background

SM-1A was constructed between 1958 and 1962 and operated from 1962 to 1972. Following the reactor's final shutdown in 1972, the highly radioactive nuclear fuel was removed and disposed of, minor decontamination was performed, and SM-1A was placed into a safe storage (SAFSTOR) configuration. The decommissioning of a nuclear reactor is required within 60 years of permanent cessation of operations in accordance USNRC regulations in 10 CFR 50.82(a)(3) and AR 50-7, *Army Reactor Program*, which establishes the Army's intent to follow USNRC guidelines. Therefore, the decommissioning of SM-1A must be completed by 2032. In its current condition, SM-1A does not support the Army's mission in Alaska or at Fort Greely.

Existing Conditions

SM-1A is in an approximately 1.5-acre fenced site in the central portion of Fort Greely. Fort Greely comprises approximately 6,840 acres near Delta Junction, Alaska, approximately 100 miles southeast of Fairbanks. The deactivated reactor and associated systems are primarily in a cylindrical structure—known as the Vapor Container (VC)—adjacent to Building 606 North. Building 606 North and Building 606 South also contain critical infrastructure associated with Fort Greely's existing utility systems. Building J-5 (also known as Building 607), immediately east of the VC, is used for parts and materials storage.

Buildings 606 North, 606 South, and J-5 are owned by Doyon Utilities, LLC, Fort Greely's utility privatization (UP) contractor. Access to unrestricted areas and equipment associated with SM-1A is controlled by the UP contractor, while access to restricted areas containing radioactive waste is controlled by USACE. The federal government maintains ownership of SM-1A reactor components and associated radioactive waste. Fort Greely owns the land associated with SM-1A facilities.

The Army has determined, and the Alaska State Historic Preservation Office (SHPO) has concurred, that the SM-1A Reactor Facility is individually eligible for listing in the National Register of Historic Places (NRHP). USACE is the lead federal agency for purposes of consultation regarding the Proposed Action under Section 106 of the National Historic Preservation Act (NHPA).

Alternatives Analyzed

The EA analyzes the Proposed Action Alternative and the No Action Alternative. These alternatives are described below.

Under the Proposed Action Alternative, USACE would implement the ARO-approved DP to decommission and dismantle buildings and infrastructure associated with SM-1A, including Building 606 North, the VC, and Building J-5. All radioactive and nonradioactive waste (including soils containing residual contamination) would be characterized, packaged, transported, and disposed of in accordance with applicable federal, state, and local regulatory requirements. Construction and demolition (C&D) waste would be recycled to the extent practicable or disposed of in Alaska at on- or off-post landfills, as applicable. Radioactive waste, along with nonradioactive regulated solid waste that cannot be disposed of in Alaska (e.g., lead, polychlorinated biphenyls), would be transported by trucks, trains, and vessels along existing routes for disposal at permitted facilities in the contiguous 48 states. Excavated areas of the SM-1A site would be backfilled with clean fill soils meeting applicable Fort Greely requirements to support release of the site for unrestricted future use in accordance with radiological dose criteria in 10 CFR 20.1402.

Following completion of the Proposed Action Alternative, no remnants of SM-1A would remain on site, and the decommissioning permit would be terminated. The Proposed Action Alternative would fulfill the Proposed Action's purpose and need as described above.

Under the No Action Alternative, USACE would continue to maintain SM-1A in a SAFSTOR condition under its current Reactor Possession Permit (SM1A-1-19, Amendment 1-20). Decommissioning would not take place within 60 years of SM-1A's deactivation. Although the No Action Alternative does not meet the Proposed Action's purpose and need, it is analyzed in the EA in accordance with 40 CFR 1502.14, *Alternatives Including the Proposed Action*, to provide a comparative baseline for the analysis of potential effects from the Proposed Action Alternative.

Environmental Effects

The EA analyzes potential environmental impacts from the Proposed Action Alternative and No Action Alternative to the following resources: cultural resources, water resources, socioeconomics and environmental justice, biological resources, air quality, transportation and traffic, utilities, soils, waste, and safety and health. Neither alternative would have significant adverse impacts on these resources. The Proposed Action Alternative would incorporate best management practices (BMPs) to proactively minimize environmental impacts and comply with applicable environmental regulatory requirements. The development and implementation of formal mitigation measures would not be required because potential impacts from the Proposed Action Alternative would be less than significant. The EA determined that the Proposed Action Alternative would have beneficial short-term and/or long-term effects on stormwater management and groundwater, the local demography and economy, soils, radioactive and nonradioactive waste, and safety and health; and a cumulatively beneficial effect on safety and health.

The Proposed Action Alternative would have an *adverse effect* on historic properties under NHPA Section 106. In consultation with the Alaska SHPO and participating Section 106 consulting parties, USACE has executed a memorandum of agreement (MOA) that will resolve the adverse effect consistent with 36 CFR 800.6(c) and ensure that it remains less-than-significant. Stipulations in the MOA consist of the following:

- A. *Historic American Engineering Record (HAER) Level III-Equivalent Documentation*: HAER-equivalent documentation is appropriate to resolve adverse effects on significant historic properties, such as the SM-1A Reactor Facility. USACE shall prepare, or direct to be prepared, documentation equivalent to HAER Level III standards as defined in the *Secretary of the Interior Standards and Guidelines for Architectural and Engineering Documentation*.

The HAER Level III-equivalent documentation shall include the SM-1A Reactor Facility, including Buildings 606 and 607 and associated infrastructure. The documentation will include information obtained from USACE's Office of History and Fort Greely, including motion picture film, photographs, and documents, as appropriate.

- B. Upon completion, USACE will submit the draft documentation to the Signatories and other consulting parties for their thirty (30) day review. USACE shall incorporate and/or respond to all submitted comments before finalizing the documentation.
- C. USACE shall provide copies of the final documentation to SHPO, Fort Greely, and the USACE Office of History. USACE will identify other appropriate repositories for the documentation in consultation with the Signatories and other consulting parties. USACE shall ensure the resulting documentation is suitable for dissemination to the public with the goal of creating awareness for the historical significance of the SM-1A Reactor Facility. USACE shall provide copies of the documentation to the other consulting parties upon written request.
- D. Within two (2) years of USACE's award of the decommissioning and dismantlement contract, USACE shall distribute a draft digital version of a proposed historical plaque/marker to the Signatories and other consulting parties. This historical plaque/marker's design shall be agreed upon by the Signatories with input from the other consulting parties prior to installation. Within one (1) year of completion of the decommissioning and dismantlement, USACE/Fort Greely shall erect the agreed upon plaque/marker at the previous site of SM-1A. Additional plaques/markers shall be installed at publicly accessible sites. These additional plaques/ markers shall have their designs and locations agreed upon by the Signatories and consulting parties prior to installation. Upon final installation of these historical plaque/markers, USACE/Fort Greely shall photograph the installed plaque/markers and distribute to all the Signatories and consulting parties.
- E. During decommissioning and dismantlement, when safe and feasible, USACE shall salvage historical items from the SM-1A Reactor Facility, including but not limited to informational safety plaques and currently unknown time capsule contents. Within two (2) years of USACE's award of the decommissioning and dismantlement contract, USACE will develop a detailed plan for the identification,

curation, storage, and transportation of these historical items, along with specific steps for consultation. USACE shall submit this plan for review and comment by the Signatories and other consulting parties.

Salvaged items will remain under the control of the Army; items shall be salvaged from SM-1A and sent to an as-yet unidentified facility for storage. USACE will distribute a letter to the Signatories and other consulting parties with an item inventory and location, as well as a point of contact to help retrieve items for future exhibits. USACE shall inform the Signatories and other consulting parties of circumstances that will prevent salvage and display of these items.

- F. Since the HAER Level III-equivalent documentation will document the decommissioning and dismantlement process, USACE shall complete the requirements of Stipulations I.A through I.C within one (1) year of completion of the decommissioning and dismantlement of the SM-1A Reactor Facility (currently estimated for completion by 2028).

With implementation of measures specified in the Section 106 MOA and other applicable BMPs described in the EA, the Proposed Action Alternative would have no significant adverse impacts on the natural or human environment.

Finding of No Significant Impact

Based on information gathered and analyzed in the EA, the Department of the Army finds that implementing the Proposed Action would not significantly impact the quality of the natural or human environment as defined in 32 CFR 651.41-42; therefore, preparation of an EIS is not required.

U.S. Army Corps of Engineers, Baltimore District

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District Engineer

Date

U.S. Army Garrison Fort Greely

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Garrison Commander

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FINAL ENVIRONMENTAL ASSESSMENT DECOMMISSIONING AND DISMANTLEMENT OF THE DEACTIVATED SM-1A NUCLEAR POWER PLANT

United States Army Garrison Alaska Fort Greely

Approved By:

United States Army Corps of Engineers,
Baltimore District

United States Army Garrison Alaska
Fort Greely

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US Army Corps
of Engineers ®



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Abstract

Lead Agency: United States Army Corps of Engineers

Title of Proposed Action: Decommissioning and Dismantlement of the Deactivated SM-1A Nuclear Power Plant, United States Army Garrison Alaska Fort Greely

Designation: Final Environmental Assessment

Prepared by: United States Army Corps of Engineers, Baltimore District

Reviewed/Approved by: COL John T. Litz, District Engineer
LTC Joel M. Johnson, Garrison Commander

EA Available: <https://www.nab.usace.army.mil/SM-1A/>
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Abstract: The United States Army Corps of Engineers (USACE) has prepared this Final Environmental Assessment (EA) to evaluate the potential environmental consequences from the United States (U.S.) Army's Proposed Action to decommission and dismantle the deactivated Stationary Medium Power Model 1A (SM-1A) Nuclear Power Plant at U.S. Army Garrison Alaska Fort Greely (Fort Greely) and release the property for unrestricted use. In its current condition, SM-1A does not support the Army's mission in Alaska or at Fort Greely. The **purpose** of the Proposed Action is to: 1) safely remove, transport, and dispose of all materials and equipment (M&E), structures, and residual contamination associated with SM-1A; 2) release the SM-1A site for unrestricted use in accordance with U.S. Nuclear Regulatory Commission (USNRC) radiological dose criteria established in 10 Code of Federal Regulations (CFR) 20.1402, *Radiological criteria for unrestricted use* and adopted by the Army; and 3) terminate the U.S. Army-issued SM-1A decommissioning permit. The **need** for the Proposed Action is to complete the decommissioning of SM-1A within 60 years (by 2032) of permanent cessation of operations in accordance with USNRC regulation 10 CFR 50.82(a)(3) and Army Regulation (AR) 50-7, *Army Reactor Program* (17 November 2016), which establishes the Army's intent to follow USNRC guidelines. USACE implements the decommissioning of deactivated Army nuclear power plants and ensures compliance with associated environmental and safety requirements in accordance with AR 50-7.

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (Title 42, United States Code [USC] 4321 et seq.); the

NEPA-implementing regulations of the Council on Environmental Quality (CEQ)¹ (40 CFR 1500–1508) (1978, as amended in 1986 and 2005); and the Army’s NEPA regulations (32 CFR 651, *Environmental Analysis of Army Actions*). This EA examines the potential environmental impacts of the Proposed Action and its alternatives for the following environmental resources: cultural resources, water resources, socioeconomics and environmental justice, biological resources, air quality, transportation and traffic, utilities, soils, waste, and safety and health. With implementation of best management practices (BMPs) and minimization measures, the EA concludes that adverse impacts would not meet the conditions requiring preparation of an Environmental Impact Statement (EIS) (32 CFR 651.41, *Conditions requiring an EIS*). The Proposed Action would have no significant adverse impacts on the natural or human environment; therefore, it is not an action normally requiring preparation of an EIS (32 CFR 651.42, *Actions normally requiring an EIS*).

¹ Substantive preparation of this EA began prior to updates to the CEQ regulations implementing NEPA that became effective on September 14, 2020. Therefore, this EA has been prepared in accordance with the NEPA regulations that were previously in effect.

Executive Summary

ES.1 Introduction

The United States Army Corps of Engineers (USACE), Baltimore District proposes to decommission and dismantle the deactivated Stationary Medium Power Model 1A Nuclear Power Plant (SM-1A) at United States (U.S.) Army Garrison Alaska Fort Greely (Fort Greely) and release the property for unrestricted use (Proposed Action). SM-1A was deactivated in 1972 and has been maintained in a safe storage (SAFSTOR) condition since that time. The decommissioning of a nuclear reactor is required within 60 years of permanent cessation of operations in accordance with U.S. Nuclear Regulatory Commission (USNRC) regulation 10 Code of Federal Regulations (CFR) 50.82(a)(3) and Army Regulation (AR) 50-7, *Army Reactor Program* (17 November 2016), which establishes the Army's intent to follow USNRC guidelines. Therefore, the decommissioning of SM-1A must be completed by 2032. In its current condition, SM-1A does not support the Army's mission in Alaska or at Fort Greely.

USACE has prepared this Final Environmental Assessment (EA) to analyze the Proposed Action's potential environmental impacts in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (Title 42, United States Code [USC] 4321 et seq.); the NEPA-implementing regulations of the Council on Environmental Quality (CEQ)² (40 CFR 1500–1508) (1978, as amended in 1986 and 2005); and the Army's NEPA regulations (32 CFR 651, *Environmental Analysis of Army Actions*). USACE implements the decommissioning of deactivated Army nuclear power plants and ensures compliance with associated environmental and safety requirements in accordance with AR 50-7.

ES.2 Project Background and Setting

SM-1A is on an approximately 1.5-acre fenced site in the central portion of Fort Greely. Fort Greely covers approximately 6,840 acres near Delta Junction, Alaska, approximately 100 miles southeast of Fairbanks. The deactivated reactor and associated systems are primarily in a cylindrical structure known as the Vapor Container (VC), adjacent to Building 606 North. Building 606 North and Building 606 South also contain critical infrastructure associated with Fort Greely's existing utility systems. Other facilities associated with SM-1A include the waste tanks pit, the spent fuel pit, and Building J-5 (also known as Building 607).

SM-1A was built between 1958 and 1962, and operated from 1962 to 1972. Its primary mission was to supply electrical power and heating steam for on-post buildings and facilities at Fort Greely. SM-1A was also used as an in-service test facility to understand how the equipment would function in an arctic environment. SM-1A has been maintained in a SAFSTOR condition since its deactivation in 1972. USACE maintenance of SM-1A

² Substantive preparation of this EA began prior to updates to the CEQ regulations implementing NEPA that became effective on September 14, 2020. Therefore, this EA has been prepared in accordance with the NEPA regulations that were previously in effect.

in its SAFSTOR condition includes routine inspections, monitoring, and other permit-required activities.

Building 606 North, Building 606 South, and Building J-5 are owned and occupied by Fort Greely's utility privatization (UP) contractor (Doyon Utilities, LLC). The UP contractor operates and maintains Fort Greely's utility systems under the terms of a 50-year UP contract that was issued by the Defense Logistics Agency in 2007. The federal government retains ownership of structures and equipment associated with SM-1A. Access to unrestricted areas and equipment associated with SM-1A is controlled by the UP contractor. Access to restricted areas containing radioactive materials and waste is controlled by USACE. The Army owns the land underlying the facilities associated with SM-1A.

ES.3 Army Reactor Program and Regulatory Authority

USACE maintains SM-1A in accordance with AR 50-7 and Reactor Possession Permit No. SM1A-1-19, Amendment 1-20, issued by the U.S. Army Deputy Chief of Staff G-3/5/7 through the Army Reactor Office (ARO). Established by the Army, the ARO oversees the Army Reactor Program (ARP) and designates the ARP manager.

The Atomic Energy Act (AEA) of 1954 (42 USC 2011 et seq.) provides the Army with the authority to establish the ARO and administer the ARP. AR 50-7 implements this authority and sets forth program policies consistent with USNRC regulations, including decommissioning criteria set forth in 10 CFR 20 Subpart E, *Radiological Criteria for License Termination*. Today, the ARP helps ensure that Army reactors are decommissioned in a manner that is consistent with federal regulatory standards and guidelines, including those put forth by USNRC, National Council on Radiation Protection (NCRP), and American National Standards Institute (ANSI). It is Army policy to implement decommissioning projects consistent with USNRC guidelines as well as the recommendations of NCRP and ANSI.

ES.4 Proposed Action

Under the Proposed Action, USACE would: 1) complete the proposed decommissioning and dismantlement of SM-1A in accordance with an ARO-approved Decommissioning Plan (DP); 2) terminate the U.S. Army-issued SM-1A decommissioning permit; and 3) release the SM-1A site for unrestricted use in accordance with USNRC regulations established in 10 CFR 20.1402, *Radiological criteria for unrestricted use*, and adopted by the Army. Implementation of the Proposed Action would occur over approximately 6 years, beginning in 2022 and ending in 2028.

The Proposed Action would be implemented primarily in a 1.5-acre area that includes Building 606 North, the VC, Building J-5, and an approximately 18,000-square-foot (0.4-acre) gravel parking area immediately north of Building 606 North. Major phases of the Proposed Action evaluated in the EA include:

1. Mobilization and site preparation, and establishment of exterior controlled area boundary and radiological control points
2. Building J-5 disposition
3. Building 606 North disposition

4. Other exterior system removals, remediation, and final status surveys
5. Site restoration
6. Demobilization

The Proposed Action would require the complete dismantlement of Building 606 North, the VC, and Building J-5 to remove components of SM-1A. Building materials and underlying soils impacted by residual contamination associated with the reactor's operation would also be removed. Removal of these buildings, materials, and soils would support release of the site in accordance with unrestricted use criteria in 10 CFR 20.1402. UP contractor operations would have to relocate to Building 606 South for the duration of the Proposed Action. UP contractor operations may also relocate to a temporary modular office and storage facility that could be erected on the southwest side of Building 606 South, and an approximately 1,000 square foot permanent addition that may be built on the southeast corner of Building 606 South. Relocation of UP contractor operations to the southern portion of Building 606 must occur prior to the implementation of Phase 1 of the proposed decommissioning activities as listed above. The southern portion of Building 606 would be physically isolated from the northern end for the duration of the Proposed Action. Following decommissioning, the UP contractor could rebuild in-kind administrative and storage facilities on the footprint of the existing Building 606 North.

All waste generated during the Proposed Action would be initially transported from the SM-1A site by trucks. To the extent practicable, nonradioactive construction and demolition (C&D) waste that does not contain regulated solid waste (e.g., lead, polychlorinated biphenyls [PCBs]), would be recycled, or disposed of at one or more on- or off-post municipal waste and/or C&D waste landfills. There are no USNRC-permitted radiological waste disposal facilities in Alaska. Additionally (with the exception of certain types of asbestos-containing materials [ACM]), the disposal of most nonradioactive solid waste regulated under the Resource Conservation and Recovery Act (RCRA) of 1976 (42 USC 6901 et seq.) and the Toxic Substances Control Act (TSCA) of 1976 (15 USC 2601 et seq.) is prohibited in Alaska. Therefore, all radioactive waste and most nonradioactive regulated solid waste generated by the Proposed Action would be transported to permitted facilities in the contiguous 48 states for disposal. Radioactive waste and nonradioactive regulated solid waste would be managed, characterized, packaged, transported, and disposed of in accordance with applicable federal and state regulatory requirements. Shipments of waste from the SM-1A site would be expected to begin in the summer of 2023. The transportation of waste via air, truck, and/or rail through Canada from Fort Greely to disposal facilities in the contiguous 48 states is not currently anticipated and is not addressed in this EA.

Site restoration activities under the Proposed Action would occur following the removal of facilities and infrastructure associated with SM-1A and verification that the release criteria have been achieved. The SM-1A site would be considered suitable for release for unrestricted use once it is determined that the average member of a critical group would not receive a total effective dose equivalent in excess of 25 millirem (mrem) per year above background radiation levels on the site, in accordance with radiological dose criteria in 10 CFR 20.1402. Following completion of the Proposed Action, future use or redevelopment of the SM-1A site would be at the discretion of Fort Greely and the UP

contractor. NEPA documentation would be prepared separately from the EA as applicable for future use or redevelopment of the site.

ES.5 Purpose and Need

The **purpose** of the Proposed Action is to safely remove, transport, and dispose of all materials and equipment (M&E), structures, and residual contamination associated with SM-1A; release the SM-1A site for unrestricted use in accordance with radiological dose criteria established by the USNRC in 10 CFR 20.1402 and adopted by the Army; and terminate the Army-issued SM-1A decommissioning permit. The **need** for the Proposed Action is to complete the decommissioning of SM-1A within 60 years (i.e., by 2032) of permanent cessation of operations in accordance with USNRC regulation 10 CFR 50.82(a)(3) and AR 50-7, *Army Reactor Program* (17 November 2016), that establishes the Army's intent to follow USNRC guidelines.

SM-1A has been maintained in a SAFSTOR condition and subject to regular inspection and monitoring for 48 years. In its current condition, SM-1A does not support the Army's mission on Fort Greely, now or in the future. The Proposed Action would enable USACE to meet Army mission objectives to decommission SM-1A, terminate the U.S. Army SM-1A decommissioning permit, and release the underlying land for unrestricted use.

ES.6 Scope of the Environmental Assessment

This EA analyzes the Proposed Action's potential adverse, beneficial, and cumulative effects on the human and natural environment at, and in the vicinity of, SM-1A and Fort Greely. Potential impacts from the No Action Alternative are also analyzed in accordance with CEQ NEPA regulations in 40 CFR 1502.14, *Alternatives Including the Proposed Action*.

The Proposed Action's potential effects are analyzed in the EA for the following resources: cultural resources, water resources, socioeconomic and environmental justice, biological resources, air quality, transportation and traffic, utilities, soils, waste, and safety and health. The following resources were dismissed from analysis in the EA because the Proposed Action would have no potential to meaningfully or measurably affect them: airspace, land use, noise, recreation, seismology, geology and topography, and visual resources.

ES.7 Alternatives

ES.7.1 No Action Alternative

Under the No Action Alternative, USACE would continue to maintain SM-1A in a SAFSTOR condition under its current Reactor Possession Permit (SM1A-1-19, Amendment 1-20). Decommissioning would not take place within 60 years (i.e., by 2032) of SM-1A's deactivation. The No Action Alternative does not meet the Proposed Action's purpose and need. However, it is analyzed in the EA in accordance with 40 CFR 1502.14 to provide a comparative baseline for the analysis of potential effects from the Proposed Action Alternative (**Section ES.7.2**).

ES.7.2 Proposed Action Alternative

The Proposed Action Alternative would implement the Proposed Action as summarized in **Section ES.4**. The Proposed Action Alternative would fulfill the Proposed Action’s purpose and need by completing the decommissioning and dismantlement of SM-1A within 60 years of its final shutdown (i.e., by 2032), releasing the SM-1A site for unrestricted use, and terminating the U.S. Army-issued decommissioning permit.

Following the implementation of the Proposed Action Alternative, no remnants of SM-1A would remain on the site.

ES.8 Environmental Impact Minimization

The Proposed Action Alternative would incorporate the best management practices (BMPs) listed in **Table ES-1** to proactively minimize environmental impacts and comply with applicable environmental regulatory requirements.

Table ES-1: Best Management Practices Applicable to the Proposed Action Alternative

Resource Area	BMP
Cultural Resources (EA Section 3.2)	In consultation with the Alaska SHPO and other participating consulting parties, execute an MOA with stipulations to resolve adverse effects on historic properties in accordance with 36 CFR 800.6(c).
	Adhere to the unanticipated discovery plan set forth in the 2020-2025 USAG Alaska ICRMP in the event that a previously unidentified archaeological site, which could include human remains, funerary or sacred objects, or other items of cultural patrimony, is discovered during the Proposed Action.
Water Resources (EA Section 3.3)	Prepare and adhere to a site-specific SWPPP as a condition of coverage under the CGP to manage the quality and quantity of stormwater discharged from the SM-1A site.
	Capture, containerize, and characterize contact water from decommissioning activities (e.g., wet saw cutting, power washing, decontamination) and dispose of accordingly at permitted off-post facilities, in accordance with a site-specific liquid effluent monitoring plan that would be prepared as part of the project-specific Environmental Monitoring and Control Program.
	Prepare and adhere to a project- and site-specific SPCC Plan.
	In accordance with the SPCC Plan, provide spill containment and cleanup kits in conspicuous and accessible locations throughout the SM-1A site for use in the event of an unintended release of contaminants or regulated materials.
Socioeconomics and Environmental Justice (EA Section 3.4)	Continue public engagement with local communities on and around Fort Greely throughout the duration of the Proposed Action Alternative.
	Continue to maintain information regarding the Proposed Action Alternative on the USACE project website (https://www.nab.usace.army.mil/SM-1A/).
	BMPs identified for other resources listed in this table would minimize potential adverse impacts on nearby on- and off-post communities, particularly from noise, air pollutant emissions, fugitive dust, traffic, waste, and safety and health. Adherence to these BMPs would ensure that potential impacts on environmental justice communities are not disproportionately adverse.
Biological Resources (EA Section 3.5)	Adhere to applicable policies and practices set forth in the Fort Greely Draft INRMP to prevent or minimize the introduction and spread of invasive plant species, such as only using certified weed-free seed mixtures during revegetation.
	Use spotters or escort vehicles, as determined necessary, to minimize the risk of collisions with moose or other wildlife during on-post vehicle operations (e.g., waste transport).

Table ES-1: Best Management Practices Applicable to the Proposed Action Alternative

Resource Area	BMP
	Coordinate with the Fort Greely Directorate of Public Works, Environmental Division, to determine the most appropriate course of action if an active MBTA-protected bird nest is observed on the SM-1A site.
Air Quality (EA Section 3.6)	Implement a fugitive dust control plan to control and minimize fugitive dust emissions.
	Directly load (i.e., do not stockpile) radioactive waste and nonradioactive regulated solid waste into appropriate containers for transport.
	Transport radioactive waste and nonradioactive regulated solid waste in closed containers meeting applicable regulatory requirements.
	Cover payloads of C&D waste and backfill soils in trucks while in transit.
	Periodically spray water on on-post paved and unpaved haul roads, as weather conditions allow.
	Cover clean backfill soil stockpiles or periodically spray with water, as weather conditions allow.
Transportation and Traffic (EA Section 3.7)	Use trained and qualified contractors to transport waste in accordance with applicable federal and state regulatory requirements for disposal at permitted on- and/or off-post facilities.
	Implement a transportation management plan that identifies approved on-post travel routes to and from the SM-1A site for heavy trucks transporting materials, equipment, and waste.
	Schedule decommissioning-related traffic (particularly heavy truck traffic) for off-peak hours when feasible and in coordination with Fort Greely and other affected organizations.
	Package and ship all radioactive and nonradioactive waste in accordance with the WTDP, as well as applicable regulatory and permit requirements established by USNRC, USDOT (including the IMDG Code), USEPA, the State of Alaska, and other agencies.
Utilities (EA Section 3.8)	Coordinate with potentially affected facilities regarding temporary planned utility service shutoffs or disruptions to prevent or minimize impacts on their operations.
	Sequence or stagger temporary planned utility service shutoffs or disruptions to the extent feasible.
Soils (EA Section 3.9)	Prepare and adhere to a project- and site-specific SWPPP as a condition of coverage under the CGP. Adherence to the SWPPP would manage the quantity and quality of stormwater discharged from the SM-1A site, prevent or minimize the migration of temporarily disturbed or stockpiled soils, and the corresponding sedimentation of receiving waterbodies.
	Replace soils excavated from the SM-1A site with clean fill soils meeting applicable Fort Greely requirements.
	Implement an environmental monitoring plan and conduct soil sampling to support release of the site.
	Conduct an FSS following the removal of SM-1A facilities and infrastructure to ensure remaining soils meet the unrestricted release criteria.
	Seed the site with native grasses following backfill and grading to prevent soil erosion.
Waste (EA Section 3.10)	Prepare and adhere to a Hazardous Material Abatement Plan in accordance with EM 385-1-1, <i>Safety and Health Requirements</i> to establish procedures for the management and disposition of nonradioactive regulated solid waste.
	Implement a WMDP that would establish procedures and requirements for the safe characterization, management, handling, storage, transportation, and disposal or recycling of radioactive waste, nonradioactive regulated solid waste, and C&D waste to optimize safety and prevent or minimize risks to the extent practicable.
	Manage and dispose of nonradioactive regulated solid waste in accordance with applicable requirements established by USEPA through its enforcement of RCRA, TSCA and those established by ADEC, where applicable.

Table ES-1: Best Management Practices Applicable to the Proposed Action Alternative

Resource Area	BMP
	Prepare and adhere to a project- and site-specific SPCC Plan to prevent or minimize the potential for accidental spills of petroleum products or other regulated materials from decommissioning-related vehicles and equipment, and establish procedures for containing and cleaning up any spills that may occur.
	Provide spill containment and cleanup kits in conspicuous and accessible locations throughout the SM-1A site in accordance with the SPCC Plan for use in the event of an unintended release of regulated materials.
Safety and Health (EA Section 3.11)	Implement an Industrial Safety Program to establish safety and health procedures, practices, and the use of PPE.
	In accordance with EM 385-1-1, implement a site- and project-specific APP that would describe the specific work, work processes, equipment to be used, and hazards pertaining to the decommissioning activities.
	Implement a WMDP that would establish procedures and requirements for the safe characterization, management, handling, storage, transportation, and disposal or recycling of radioactive waste, nonradioactive regulated solid waste, and C&D waste to optimize safety and prevent or minimize risks to the extent practicable.
	Prepare and adhere to AHAs that would define the steps to perform the work; assign risk assessment codes to each step; and identify the competent person(s) required for specific tasks.
	Prior to performing particularly hazardous tasks or operations, coordinate with on- or off-post fire and emergency services or other relevant organizations to identify and prevent or minimize potential risks.
	Conduct decommissioning activities in a controlled manner to minimize and keep radiological exposures ALARA in accordance with EM 385-1-80, <i>Radiation Protection</i> .
	Implement a Radiation Safety Program and Radiation Protection Plan that would require the use of applicable PPE and establish limits and monitoring for worker exposure to radiation in accordance with EM 385-1-1.
	Conduct environmental monitoring throughout the Proposed Action Alternative to ensure controls are adequate to protect human health and the environment.
Enter into one or more MOAs with on- and/or off-post fire and emergency response services and/or emergency health care providers to minimize fire risk and ensure safety, define roles and responsibilities, and establish conditions for response, oversight, and monitoring.	

Notes:

ADEC = Alaska Department of Environmental Conservation
 AHA = All-Hazards Assessment
 ALARA = as low as reasonably achievable
 APP = Accident Prevention Plan
 BMP = best management practice
 C&D = construction and demolition
 CFR = Code of Federal Regulations
 CGP = Construction General Permit
 EA = Environmental Assessment
 EM = Engineer Manual
 FSS = Final Status Survey
 ICRMP = Integrated Cultural Resources Management Plan
 IMDG = International Maritime Dangerous Goods
 INRMP = Integrated Natural Resources Management Plan

MBTA = Migratory Bird Treaty Act
 MOA = memorandum of agreement
 PPE = personal protective equipment
 RCRA = Resource Conservation and Recovery Act
 SHPO = State Historic Preservation Office
 SPCC = Spill Prevention, Control, and Countermeasure
 SWPPP = Stormwater Pollution Prevention Plan
 TSCA = Toxic Substances Control Act
 USACE = United States Army Corps of Engineers
 USAG = United States Army Garrison
 USDOT = United States Department of Transportation
 USEPA = United States Environmental Protection Agency
 USNRC = United States Nuclear Regulatory Commission
 WMDP = Waste Management and Disposal Plan
 WTDP = Waste Transportation and Disposal Plan

ES.9 Public and Agency Involvement

USACE outreach regarding the Proposed Action is ongoing. The Draft EA was available for a 30-day public review and comment period that began on 26 February 2021 and ended on 28 March 2021. The availability of the Draft EA for public review was announced in local and on-post newspapers as well as USACE's social media platforms. Printed and electronic copies of the Draft EA were made available for review, checkout, and/or download at local libraries, as applicable. Two in-person public meetings were conducted in Fairbanks and Delta Junction during the 30-day Draft EA public review period. The in-person meetings were livestreamed, and a presentation including a question and answer session was given. A public meeting was also conducted in a virtual/online format, open concurrently with the comment period.

The 30-day Draft EA public review period also provided the opportunity for public comment during the National Historic Preservation Act (NHPA) Section 106 process. The NHPA Section 106 process is being conducted in parallel with the NEPA process for the Proposed Action.

No comments requiring substantial revision of the Final EA, USACE's Proposed Action, or the impact analysis were received during the Draft EA public review period. Minor comments requiring minor revisions to the Final EA were addressed accordingly.

USACE is consulting with multiple regulatory agencies regarding the Proposed Action, including the Alaska Department of Environmental Conservation, Alaska Department of Fish and Game, Alaska Department of Natural Resources, Office of History and Archaeology (the Alaska State Historic Preservation Office [SHPO]), and U.S. Environmental Protection Agency (USEPA). In accordance with Department of Defense (DOD) Instruction 4710.02, *Interactions with Federally Recognized Tribes*, USACE also coordinated with federally recognized Alaska Native tribes.

ES.10 Environmental Consequences

The potential environmental consequences of the No Action Alternative and the Proposed Action Alternative are summarized in **Table ES-2**. Under either alternative, adverse impacts on resources analyzed in the EA would be less than significant and would not require preparation of an EIS as defined in 32 CFR 651.41, *Conditions Requiring an EIS*. Therefore, the Army has determined that the Proposed Action does not require preparation of an EIS as defined in 32 CFR 651.42, *Actions Normally Requiring an EIS*. The development and implementation of formal mitigation measures would not be required because potential impacts from the Proposed Action Alternative would be less than significant.

The Army has determined—and the Alaska SHPO has concurred—that SM-1A is eligible for listing in the National Register of Historic Places (NRHP). The Proposed Action Alternative would have an adverse effect on historic properties under NHPA Section 106. In consultation with the Alaska SHPO and participating Section 106 consulting parties, USACE will execute a memorandum of agreement (MOA) with stipulations to resolve the adverse effect consistent with 36 CFR 800.6(c) and ensure that it remains less than significant.

Table ES-2: Summary of Impacts

Resource Area	No Action Alternative	Proposed Action Alternative
Cultural Resources (EA Section 3.2)	No impacts. Existing conditions would continue.	Long-term, less-than-significant adverse effect on historic properties from the removal of SM-1A, which is eligible for listing in the NRHP. No effect on archaeological resources. NHPA Section 106 determination: <i>Adverse effect</i> on NRHP-eligible historic properties.
Water Resources (EA Section 3.3)	No impacts. Existing conditions would continue.	Short-term, less-than-significant adverse impacts on water resources from temporarily increased sedimentation during ground-disturbing activities, and potential accidental spills. Stormwater would be managed in accordance with the CGP. Contact water from decommissioning activities would be managed in accordance with a site-specific liquid effluent monitoring plan. No long-term impacts on surface waterbodies or water quality. Beneficial long-term effects on stormwater management from restoration of the SM-1A site following removal of SM-1A facilities and infrastructure, and on groundwater from the decommissioning of three inactive wells associated with SM-1A.
Socioeconomics and Environmental Justice (EA Section 3.4)	No impacts. Existing conditions would continue.	Short-term, beneficial effects on the local demography and economy from temporary decommissioning-related jobs, some of which may be local; and increased spending to purchase local goods and services during decommissioning activities. No short-term or long-term disproportionately adverse impacts on environmental justice communities or children. No long-term impacts.
Biological Resources (EA Section 3.5)	No impacts. Existing conditions would continue.	Short-term, less-than-significant adverse impacts on vegetation from temporary disturbance; and on wildlife from temporary disturbance, displacement, or annoyance during decommissioning activities, and from an elevated risk of collisions with decommissioning-related traffic. No or negligible potential to affect marine biological resources. No long-term impacts.
Air Quality (EA Section 3.6)	No impacts. Existing conditions would continue.	Short-term, less-than-significant adverse impacts on air quality from potential emissions of fugitive dust, and criteria pollutants from decommissioning-related vehicles and equipment. No long-term impacts.
Transportation and Traffic (EA Section 3.7)	No impacts. Existing conditions would continue.	Short-term, less-than-significant adverse impacts on the on-post and off-post road network from increased decommissioning-related traffic, including heavy truck traffic and workers' commuting vehicles, that would have the potential to contribute to traffic congestion. Short-term, less-than-significant adverse impacts from the transportation of radioactive waste and nonradioactive regulated solid waste. All such waste would be packaged and transported in accordance with applicable regulatory requirements established by USNRC, USDOT (including the IMDG Code), USEPA, and the State of Alaska.

Table ES-2: Summary of Impacts

Resource Area	No Action Alternative	Proposed Action Alternative
		<p>Short-term, less-than-significant adverse impacts on marine ports and shipping. Waste container volumes would be minimal relative to the cargo volume routinely handled by the Port of Alaska and Port of Whittier. Radioactive waste containers would be shipped in accordance with USDOT regulations that limit radiation exposure to the public during transport.</p> <p>No short-term adverse impacts on the freight rail transportation network. Transport of waste containers by freight rail would be within the capacity of the ARRC.</p> <p>No long-term impacts.</p>
Utilities (EA Section 3.8)	No impacts. Existing conditions would continue.	<p>Short-term, less-than-significant adverse impacts from preplanned, temporary utility service outages or disruptions during the relocation of utility systems or components during decommissioning and dismantlement activities.</p> <p>No long-term impacts.</p>
Soils (Section 3.9)	Long-term, less-than-significant impacts. Low-level radioactive and nonradioactive contaminants associated with SM-1A would remain in soils on the site and would continue to be monitored and managed as they currently are.	<p>Short-term, less-than-significant adverse impacts from soil disturbance and excavation during decommissioning and dismantlement activities.</p> <p>Long-term, beneficial effects on soils from the removal of radiologically and nonradiologically contaminated soils.</p>
Waste (EA Section 3.10)	<p>Long-term, less-than-significant adverse impacts from radioactive and nonradioactive regulated materials and waste associated with SM-1A. These materials and wastes would continue to be monitored and managed as they currently are.</p> <p>No impacts on nonhazardous solid waste.</p>	<p>Short-term, less-than-significant adverse impacts from the generation and management of radioactive and nonradioactive waste during decommissioning and dismantlement activities. Waste volumes would not exceed USACE's capacity to effectively manage and dispose of them.</p> <p>No long-term impacts from radioactive and nonradioactive waste.</p> <p>Long-term, beneficial effects from the removal and disposal of radioactive and nonradioactive waste from SM-1A and Fort Greely.</p>
Safety and Health (EA Section 3.11)	No impacts. Existing conditions would continue. Radiation monitoring would continue in accordance with the Reactor Possession Permit.	<p>Short-term, less-than-significant adverse impacts from increased risk of worker exposure or injury during decommissioning and dismantlement activities.</p> <p>Long-term, beneficial effects on safety and health from the removal of radioactive waste and nonradioactive regulated solid waste from SM-1A.</p>
Cumulative Effects (EA Section 4)	No cumulative effects.	<p>Less-than-significant adverse cumulative effects when considered with past, present, and reasonably foreseeable future projects in the ROI.</p> <p>Beneficial cumulative effects on safety and health.</p>

Notes:

ARRC = Alaska Railroad Corporation
 CGP = Construction General Permit
 EA = Environmental Assessment
 IMDG = International Maritime Dangerous Goods
 NHPA = National Historic Preservation Act
 NRHP = National Register of Historic Places
 ROI = Region of Influence

USACE = United States Army Corps of Engineers
 USEPA = United States Environmental Protection Agency
 USDOT = United States Department of Transportation
 USNRC = United States Nuclear Regulatory Commission

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LIST OF ACRONYMS AND ABBREVIATIONS

AAAQS	Alaska Ambient Air Quality Standards
AAC	Alaska Administrative Code
AADT	average annual daily traffic
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
ACP	access control point
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADOT&PF	Alaska Department of Transportation and Public Facilities
AEA	Atomic Energy Act
AHA	All-Hazards Assessment
AHRS	Alaska Heritage Resources Survey
ALARA	As Low as Reasonably Achievable
ANCSA	Alaska Native Claims Settlement Act
ANSI	American National Standards Institute
APE	Area of Potential Effect
APP	Accident Prevention Plan
AR	Army Regulation
ARO	Army Reactor Office
ARP	Army Reactor Program
ARRC	Alaska Railroad Corporation
AS	Alaska Statute
bgs	below ground surface
BLM	Bureau of Land Management
BMP	best management practice
C&D	construction and demolition
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGP	Construction General Permit
CO	carbon monoxide
COVID-19	Coronavirus Disease 2019
CWA	Clean Water Act
DA PAM	Department of the Army Pamphlet
DECON	decontamination
DOD	Department of Defense
Doyon	Doyon Utilities, LLC
DP	Decommissioning Plan
DPW	Directorate of Public Works

EA	Environmental Assessment
EIS	Environmental Impact Statement
EJ	environmental justice
EM	Engineer Manual
ENTOMB	Entombment
EO	Executive Order
FHWA	Federal Highway Administration
FSS	Final Status Survey
GEIS	Generic Environmental Impact Statement
GHG	greenhouse gas
GTCC	Greater-Than-Class C
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HAP	hazardous air pollutant
HTD	hard to detect low-energy beta emitter
ICRMP	Integrated Cultural Resources Management Plan
ICRP	International Commission on Radiological Protection
IICEP	Intergovernmental and Interagency Coordination for Environmental Planning
IMDG	International Maritime Dangerous Goods
INRMP	Integrated Natural Resources Management Plan
LBP	Lead-based paint
LLRW	low-level radioactive waste
M&E	Materials and Equipment
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MBTA	Migratory Bird Treaty Act
MOA	memorandum of agreement
mrem	millirem
MSGP	Multi-Sector General Permit
MSW	municipal solid waste
NAAQS	National Ambient Air Quality Standards
NCRP	National Council on Radiation Protection
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NUREG	Nuclear Regulatory Guidance
NWSR	National Wild and Scenic Rivers

NWSRS	National Wild and Scenic Rivers System
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PEL	Planning and Environmental Linkage
PM _{2.5}	particulate matter with an aerodynamic diameter of 2.5 microns or less
PM ₁₀	particulate matter with an aerodynamic diameter of 10 microns or less
PPE	personal protective equipment
RCRA	Resource Conservation and Recovery Act
ROC	radionuclide of concern
ROI	region of influence
RPV	Reactor Pressure Vessel
SAFSTOR	Safe Storage
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Office
SM-1A	Stationary Medium Power Model 1A (Nuclear Power Plant)
SO ₂	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SWPPP	Stormwater Pollution Prevention Plan
tpy	tons per year
TSCA	Toxic Substances Control Act
UFC	Unified Facilities Criteria
UP	Utility Privatization
U.S.	United States
USACE	United States Army Corps of Engineers
USAG	United States Army Garrison
USC	United States Code
USDA	United States Department of Agriculture
USDOE	United States Department of Energy
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USNRC	United States Nuclear Regulatory Commission
VC	Vapor Container
WMDP	Waste Management and Disposal Plan
WTDP	Waste Transportation and Disposal Plan

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1.0 Purpose and Need

1.1 Introduction

The United States Army Corps of Engineers (USACE), Baltimore District proposes to decommission and dismantle the deactivated Stationary Medium Power Model 1A Nuclear Power Plant (SM-1A) at United States (U.S.) Army Garrison Alaska Fort Greely (Fort Greely) and release the property for unrestricted use (Proposed Action). SM-1A was deactivated in 1972 and has been maintained in a safe storage (SAFSTOR) condition since that time. The decommissioning of a nuclear reactor is required within 60 years of permanent cessation of operations in accordance with U.S. Nuclear Regulatory Commission (USNRC) regulation 10 Code of Federal Regulations (CFR) 50.82(a)(3) and Army Regulation (AR) 50-7, *Army Reactor Program* (17 November 2016), which establishes the Army's intent to follow USNRC guidelines. Therefore, the decommissioning of SM-1A must be completed by 2032. In its current condition, SM-1A does not support the Army's mission in Alaska or at Fort Greely.

USACE has prepared this Environmental Assessment (EA) to analyze the Proposed Action's potential environmental impacts in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (Title 42, United States Code [USC] 4321 et seq.); the NEPA-implementing regulations of the Council on Environmental Quality (CEQ)³ (40 CFR 1500–1508) (1978, as amended in 1986 and 2005); and the Army's NEPA regulations (32 CFR 651, *Environmental Analysis of Army Actions*). USACE implements the decommissioning of deactivated Army nuclear power plants and ensures compliance with associated environmental and safety requirements in accordance with AR 50-7.

1.2 Background

1.2.1 SM-1A Location and Setting

SM-1A is on Fort Greely, which covers approximately 6,840 acres near Delta Junction, Alaska, approximately 100 miles southeast of Fairbanks (**Figure 1.2-1**). SM-1A occupies an approximately 1.5-acre fenced site in the central portion of Fort Greely along the northern side of Arctic Avenue between First Street and East Fifth Street (**Figure 1.2-2**). The deactivated reactor and associated systems are primarily in a cylindrical structure known as the Vapor Container (VC) adjacent to Building 606 North. Building 606 North and Building 606 South also contain critical infrastructure associated with Fort Greely's existing utility systems. Building J-5 (also known as Building 607; immediately east of the VC) is used for storage by Fort Greely's utility privatization (UP) contractor (Doyon Utilities, LLC).

³ Substantive preparation of this EA began prior to updates to the CEQ regulations implementing NEPA that became effective on September 14, 2020. Therefore, this EA has been prepared in accordance with the NEPA regulations that were previously in effect.

Figure 1.2-1: Fort Greely

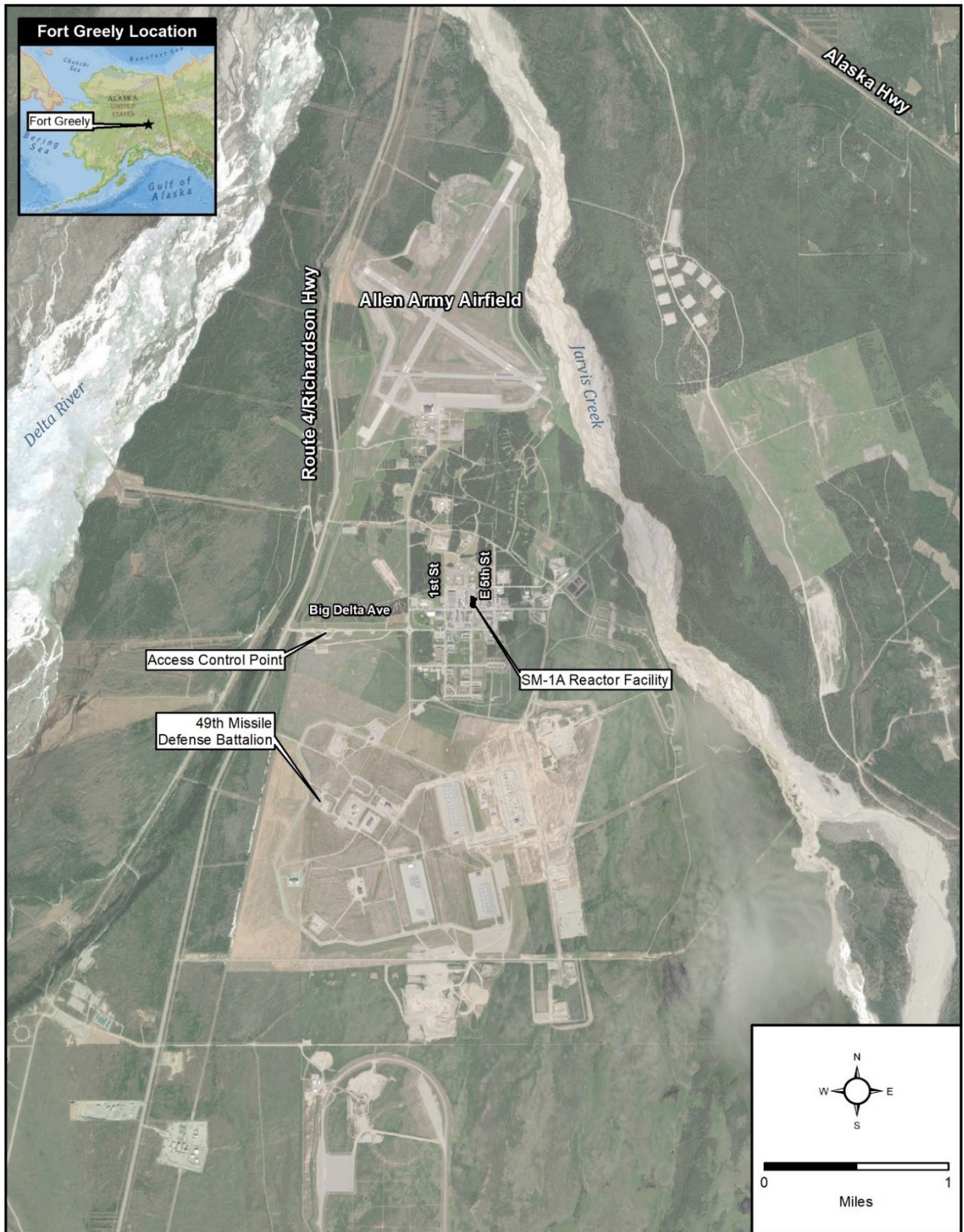
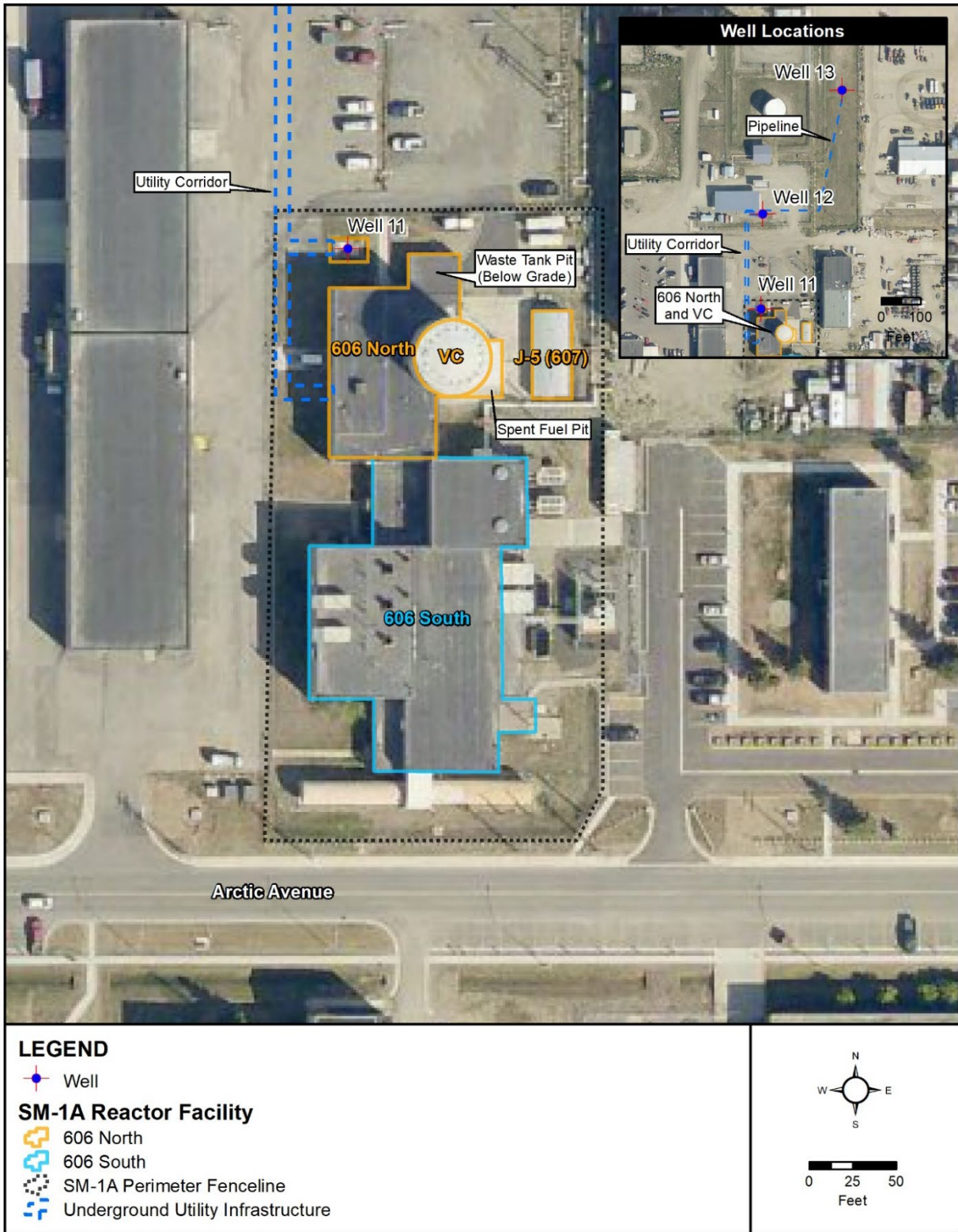


Figure 1.2-2: SM-1A



Facilities comprising SM-1A are summarized in **Table 1.2-1. Photo 1** through **Photo 6** show buildings and components associated with SM-1A and Fort Greely's utility systems.

Table 1.2-1: SM-1A Facilities

Facility No. or Name ¹	Facility Description	Building Footprint (square feet)	Total Building Square Footage
Building 606 North	Owned and occupied by the UP contractor. Contains office/storage space, electrical switchgear (Photo 1), battery charging stations, water softening systems, and backup treated boiler water associated with Fort Greely's conventional utility systems; and the SM-1A reactor turbine (Photo 2). LLRW generated during SM-1A's 1973-1974 deactivation, including soils excavated from inside SM-1A's fenced perimeter, is sealed in the Demineralizer Room on the first floor adjacent to the VC. Ownership of the reactor components and associated radioactive materials and waste is maintained by the federal government.	4,760	9,120 (two stories)
Building 606 South	Owned and occupied by the UP contractor. Contains boilers along with the installation water supply and treatment area.	20,500	20,500
Building J-5 (also known as Building 607) (Photo 3)	Owned and occupied by the UP contractor. Formerly used as storage for radioactive materials and nonflammable chemicals when SM-1A was operational. Six inches of concrete were added to the building's floor during SM-1A's 1972-1973 deactivation. Currently used for UP contractor storage.	1,000	1,000
VC Structure	Cylindrical structure with a base diameter of 43 feet and an overall height of 63 feet (Photo 4 and Photo 5). The base of the VC extends to 18.7 feet bgs. Contains the deactivated SM-1A reactor and associated equipment including the RPV, primary shield tank, steam generator, pressurizer, and associated piping. Remaining reactor components are encased in concrete and an acrylamide grout-sand-soil mixture that is capped with 36 inches of reinforced concrete. This structure is deactivated/not in use. Ownership of the reactor components and associated radioactive materials and waste is maintained by the federal government.	1,452	N/A
Supply Well No. 11 (Photo 6)	Supplied reactor cooling water when SM-1A was operational; deactivated/not in use. Ownership of the reactor components is maintained by the federal government.	N/A	N/A
Supply Well No. 12		N/A	N/A
Recharge Well No. 13 (also known as the "dry well")	Received treated reactor cooling water after 1968 when SM-1A was operational; deactivated/not in use. Ownership of the reactor components is maintained by the federal government.	N/A	N/A

Table 1.2-1: SM-1A Facilities

Facility No. or Name ¹	Facility Description	Building Footprint (square feet)	Total Building Square Footage
Spent fuel pit & waste tanks pit	Entirely filled with debris and an acrylamide grout-sand-soil mixture during SM-1A's 1972-1973 deactivation; deactivated/not in use. The base of the spent fuel pit extends to 13.5 feet bgs. Debris in these pits is assumed to be radiologically contaminated. Ownership of the reactor components and associated radioactive materials and waste is maintained by the federal government.	N/A	N/A
Pipe pit	Immediately north of the VC access hatch inside Building 606 North (below grade). Contains some radioactive materials and is entirely filled with concrete. Ownership of the reactor components and associated radioactive materials and waste is maintained by the federal government.	N/A	N/A

Notes:

¹The locations of SM-1A facilities are shown in **Figure 1.2-2**.

bgs = below ground surface

LLRW = low-level radioactive waste

N/A = not applicable

RPV = reactor pressure vessel

UP = utility privatization

VC = Vapor Container



Photo 1: Electrical switchgear in Building 606 North



Photo 2: Electrical generator (foreground, blue) and turbine (behind generator at right) associated with the original operation of SM-1A in Building 606 North



**Photo 3: Building J-5
(also known as Building 607)**



**Photo 4: Exterior view of structure containing
the SM-1A VC**



**Photo 5: VC access hatch inside Building 606
North**



Photo 6: Well No. 11 Pump House

The area inside the SM-1A perimeter fence generally consists of paved asphalt or concrete, with small areas of maintained lawn. Buildings 606 North, 606 South, and J-5 are owned by Fort Greely’s UP contractor. The UP contractor operates and maintains Fort Greely’s utility systems under the terms of a 50-year UP contract that was issued by the Defense Logistics Agency in 2007; these systems include the central heat and power plant, heat distribution system and utilidors, electrical distribution system, potable water treatment and distribution system, and wastewater distribution system and treatment plant. Most of the utility infrastructure in Building 606 North (**Table 1.2-1**) is original to the operation of SM-1A. Access to and conveyance of the utility systems and infrastructure facilities, including those in Building 606 North, is granted to the UP contractor by Army Easement DACA85-08-00124. The federal government maintains ownership of SM-1A reactor components and associated radioactive materials and waste.

The SM-1A site is accessible to vehicles and pedestrians via multiple locked gates in the perimeter fence. Access to unrestricted areas and equipment associated with SM-1A is controlled by the UP contractor. Access to restricted areas containing radioactive materials and waste is controlled by USACE. The Army owns the land underlying the facilities associated with SM-1A (**Table 1.2-1**).

1.2.2 SM-1A Operating and Decommissioning History

SM-1A was built between 1958 and 1962 and operated from 1962 to 1972 (**Figure 1.2-3**). It was a single-loop, 20.2 megawatt-thermal pressurized water reactor that used highly enriched uranium dioxide fuel to generate 2,000 kilowatts of electrical power and 37,850 pounds of extraction steam per hour. SM-1A's primary mission was to supply electrical power and heating steam for on-post buildings and facilities at Fort Greely; it was also used as an in-service test facility to understand how the equipment would function in an arctic environment.

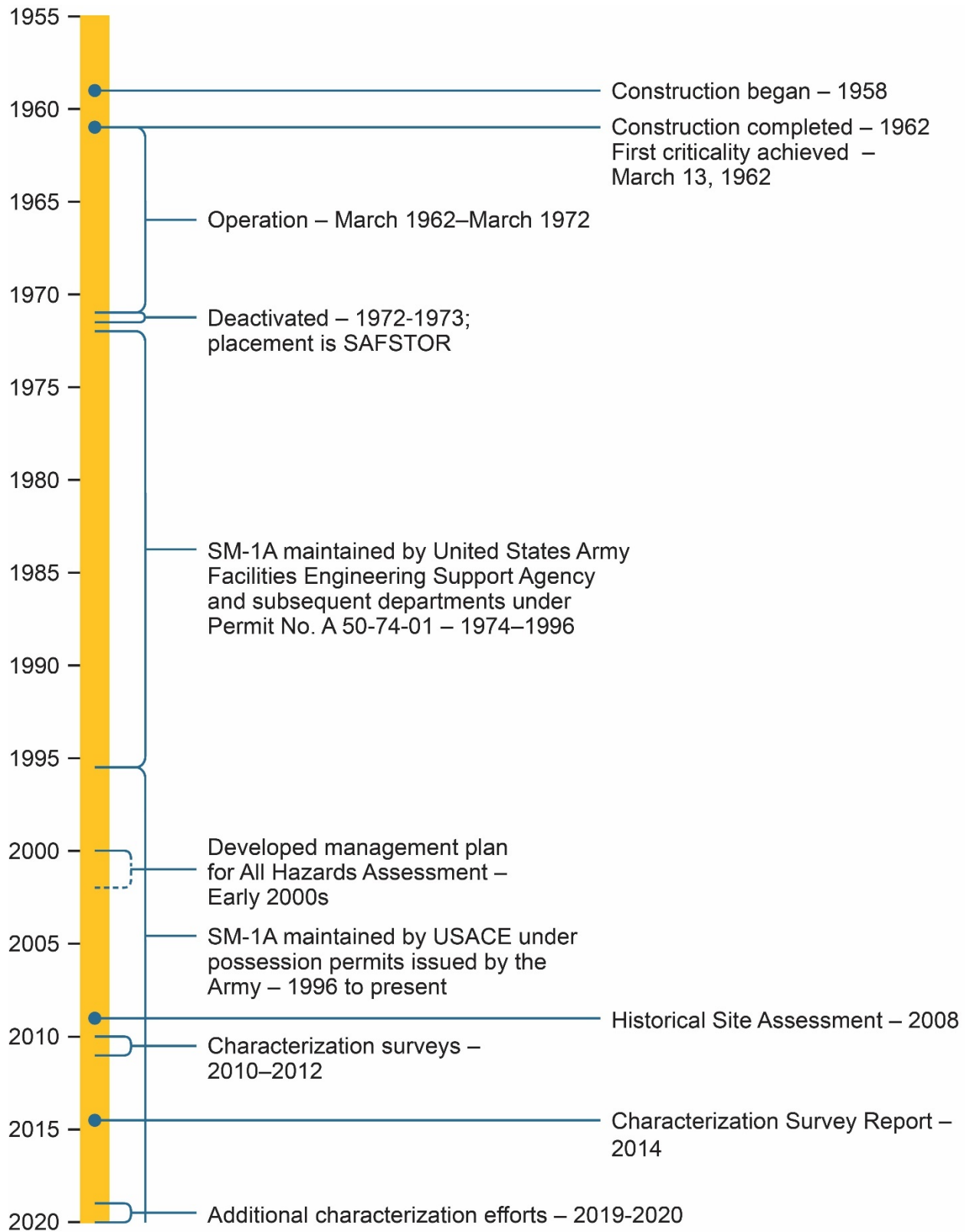
The SM-1A decommissioning process began following the reactor's final shutdown in March 1972. The initial deactivation of SM-1A consisted of placing the facility in a SAFSTOR configuration by removing the nuclear fuel, conducting minor decontamination, shipping some radioactive waste for disposal, sealing the VC, and installing appropriate warning signs and monitoring devices. Much of the reactor's primary system components were dismantled, and components inside the VC were encased in concrete and an acrylamide grout-sand-soil mixture. This mixture was capped with 36 inches of reinforced concrete to a finished elevation of about 10 feet above the bottom of the VC and the VC hatch was sealed (**Photo 5**). Waste generated during the initial deactivation activities was placed in the spent fuel pit and waste tanks pit. These pits were then filled with an acrylamide grout-sand-soil mixture and capped with reinforced concrete. Debris in these pits is assumed to be radiologically contaminated.

Following these deactivation activities, SM-1A was placed under a routine monitoring program that is currently implemented by USACE. SM-1A has been maintained in a SAFSTOR condition since 1972 to allow residual radioactivity to decay and minimize worker exposure to radiation to the extent possible during final decommissioning and dismantlement activities. Since its placement in SAFSTOR, SM-1A has been subject to regular inspection and monitoring by USACE in accordance with AR 50-7 and SM-1A Reactor Possession Permit Number SM1A-1-19, Amendment 1-20, issued by the U.S. Army Deputy Chief of Staff G-3/5/7 through the Army Reactor Office (ARO) (additional discussion in **Section 1.2.3**). In general, Building 606 North has remained occupied by government personnel and/or contractors operating Fort Greely's conventional steam and power plant since SM-1A's deactivation in 1972.

Prior to completing the decommissioning of a deactivated nuclear reactor, AR 50-7 requires the preparation of a four-phase All-Hazards Assessment (AHA) to outline the planning and decommissioning approach. The planning, sampling, and analytical requirements of the AHA are integral parts of the decommissioning process that ensure proper waste classification, handling, treatment, disposal, and/or storage.

In the early 2000s, USACE began developing a management plan for conducting the SM-1A AHA. Phase I of the AHA—a Historical Site Assessment—was completed in 2008 and Phase II characterization surveys were conducted at the SM-1A site from 2010 to 2012. The survey results were documented in a 2014 Characterization Survey Report, thereby completing Phase II of the AHA. Additional characterization efforts were performed in 2019 and 2020 to validate the Characterization Survey Report findings and address identified data gaps.

Figure 1.2-3: SM-1A Historical Timeline from 1958 to 2020



Currently, the proposed decommissioning of SM-1A is in Phase III of the AHA process. Phase III includes the development of a detailed Decommissioning Plan (DP) and associated documentation to execute the selected hazards reduction approach, decommissioning, and disposal options. On ARO approval of the DP, the U.S. Army Deputy Chief of Staff G-3/5/7 would issue the SM-1A decommissioning permit to USACE. Phase IV would consist of implementing the ARO-approved DP, completing the proposed decommissioning and dismantlement, and terminating the U.S. Army-issued SM-1A decommissioning permit.

1.2.3 Army Reactor Program and Regulatory Authority

USACE maintains SM-1A in accordance with AR 50-7 and Reactor Possession Permit No. SM1A-1-19, Amendment 1-20, issued through the ARO. The ARO, established by the U.S. Army, oversees the Army Reactor Program (ARP) and designates the ARP Manager. USACE implements the decommissioning of deactivated Army nuclear power plants and ensures compliance with associated environmental and safety requirements in accordance with AR 50-7.

SM-1A was designed, constructed, and operated as part of the Army Nuclear Power Program (the present-day ARP). The program was established in the 1950s to develop, construct, and operate small nuclear power reactors on select Department of Defense (DOD) lands under authority granted to the DOD by Section 91(b) of the Atomic Energy Act (AEA) of 1954, as amended (42 USC 2011 et seq.). AEA Section 91(b) authorizes DOD to procure and use special nuclear material in the interest of national defense and to acquire utilization facilities (e.g., nuclear reactors) for military purposes. AEA Section 110(b) excludes such utilization facilities acquired by DOD from the licensing requirements specified therein.

The AEA provides the Army with the authority to establish the ARO and administer the ARP. AR 50-7 implements this authority and sets forth program policies consistent with USNRC regulations, including decommissioning criteria set forth in 10 CFR 20 Subpart E, *Radiological Criteria for License Termination*. Today, the ARP helps ensure that Army reactors are decommissioned in a manner that is consistent with federal regulatory standards and guidelines, including those put forth by the USNRC, National Council on Radiation Protection (NCRP), and American National Standards Institute (ANSI). It is Army policy to implement decommissioning projects consistent with USNRC guidelines as well as the recommendations of NCRP and ANSI.

Decommissioning activities under ARO's purview are also subject to AR 385-10, *The Army Safety Program* (29 November 2000); and Department of the Army Pamphlet (DA PAM) 385-24, *The Army Radiation Safety Program* (30 November 2015), which outlines radiation safety regulations and protocols applicable to the decommissioning of Army reactor facilities. The ARP adopts the USNRC's radiological dose criteria for releasing a facility or site for unrestricted use, as provided in 10 CFR 20.1402, *Radiological Criteria for Unrestricted Use*. This regulation states that a facility or site can be released for unrestricted use if radioactivity levels are such that the average member

of a critical group⁴ would not receive a total effective dose equivalent in excess of 25 millirem (mrem) per year above background levels. Regulations in 10 CFR 20, *Standards for Protection Against Radiation* also stipulate that residual activity be reduced to levels that are as low as reasonably achievable (ALARA) (radiological safety and health is discussed in **Section 3.11**).

1.3 Purpose and Need

The **purpose** of the Proposed Action is to safely remove, transport, and dispose of all materials and equipment (M&E), structures, and residual contamination associated with SM-1A; release the SM-1A site for unrestricted use in accordance with radiological dose criteria established by the USNRC in 10 CFR 20.1402 and adopted by the Army; and terminate the U.S. Army-issued SM-1A decommissioning permit. The **need** for the Proposed Action is to complete the decommissioning of SM-1A within 60 years (i.e., by 2032) of permanent cessation of operations in accordance with USNRC regulation 10 CFR 50.82(a)(3) and AR 50-7, *Army Reactor Program* (17 November 2016), which establishes the Army's intent to follow USNRC guidelines.

SM-1A has been maintained in a SAFSTOR condition and subject to regular inspection and monitoring for more than 48 years. In its current condition, SM-1A does not support the Army's mission on Fort Greely, now or in the future. The Proposed Action would enable USACE to meet Army mission objectives to decommission SM-1A, terminate the SM-1A decommissioning permit, and release the underlying land for unrestricted use.

1.4 National Environmental Policy Act Process

NEPA provides a process for the consideration of environmental issues in federal agency planning and decision-making. Under NEPA, federal agencies must prepare an EA for any federal action, except those actions that are determined to be "categorically excluded." An EA is a concise public document that serves to provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS). The EA includes brief discussions of the following:

- The purpose of and need for the proposal
- Alternatives to the proposal (as required under Section 102 [2][E] of NEPA)
- The environmental impacts of the proposed action and alternatives
- A listing of agencies and individuals consulted

Army regulations governing NEPA compliance are provided in 32 CFR 651. Every EA must lead to either a Finding of No Significant Impact (FNSI) or a decision to prepare an EIS (32 CFR 651.20[a]). Should the Army determine that the Proposed Action would have a significant impact on the quality of the human and natural environment, an EIS would be prepared.

⁴ A critical group is defined in USNRC regulations (10 CFR 20.1003, *Definitions*) as the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances.

1.5 Scope of the Environmental Assessment

This EA analyzes the Proposed Action's potential adverse, beneficial, and cumulative effects on the human and natural environment at and in the vicinity of SM-1A and Fort Greely. Alternatives for implementing the Proposed Action and USACE's alternatives screening criteria are described in **Section 2**. Potential impacts from the No Action Alternative are also analyzed in this EA in accordance with CEQ NEPA regulations in 40 CFR 1502.14, *Alternatives Including the Proposed Action*.

The Proposed Action's potential effects are analyzed in this EA for the following resources: cultural resources, water resources, socioeconomics and environmental justice, biological resources, air quality, transportation and traffic, utilities, soils, waste, and safety and health. **Section 3** presents information on the existing condition of each resource area in its appropriate analysis area, or region of influence (ROI); the environmental impact analysis; and recommended best management practices (BMPs). **Section 3.1** describes the resource areas that were dismissed from further analysis in this EA: airspace, land use, noise, recreation, seismology, geology and topography, and visual resources. Cumulative effects are described in **Section 4**.

1.6 Decision to be Made

The intent of this EA is to inform decision makers and the public of the potential environmental effects from the Proposed Action and its alternatives prior to making a federal decision to implement an alternative. In doing so, the Army can make a fully informed decision, aware of the Proposed Action's potential environmental effects. This decision-making process also includes identifying measures that USACE would commit to undertake to minimize potential environmental effects, as required by NEPA, CEQ regulations, and Army NEPA regulations.

The decision to be made is whether the Army should implement the Proposed Action and—if necessary—incorporate measures to minimize potential adverse effects and enhance beneficial effects on resources, as applicable.

1.7 Public and Agency Involvement

USACE invites public participation in its decision-making process in accordance with NEPA. The following sections summarize public and agency involvement conducted to date regarding the Proposed Action.

1.7.1 Intergovernmental and Interagency Coordination for Environmental Planning

Intergovernmental and Interagency Coordination for Environmental Planning (IICEP) is a federally mandated process for informing and coordinating with other government agencies regarding a federal proposed action. USACE is coordinating and consulting with the following agencies during the IICEP process for this EA:

- Alaska Department of Environmental Conservation (ADEC)
- Alaska Department of Fish and Game (ADF&G)

- Alaska Department of Natural Resources, Office of History and Archaeology (State Historic Preservation Office [SHPO])
- U.S. Environmental Protection Agency (USEPA)

Copies of correspondence relevant to the IICEP process are provided in **Appendix A**.

1.7.2 Tribal Consultation

USACE is consulting with federally recognized Alaska Native tribes during this NEPA process in accordance with DOD Instruction 4710.02, *Interactions with Federally Recognized Tribes*. This instruction implements tribal consultation in accordance with DOD's American Indian and Alaska Native Policy (updated January 2012); AR 200-1, *Environmental Protection and Enhancement*; NEPA; NHPA; and Native American Graves and Protection and Repatriation Act. Tribes have been invited to participate in the NEPA process with sovereignty per Executive Order (EO) 13175, *Consultation and Coordination with Indian Tribal Governments* (6 November 2000), as reiterated by Presidential Memorandum, *Tribal Consultation*, dated 5 November 2009. USACE has responded to all requests received from recognized Alaska Native Tribes to learn more about the project. None of the Alaska Native Tribes has expressed concerns regarding potential effects to known historic properties. Copies of correspondence relevant to the tribal consultation process are provided in **Appendix A**.

1.7.3 Public Involvement

USACE outreach regarding the Proposed Action is ongoing. The Draft EA was available for a 30-day public review and comment period that began on February 26, 2021 and ended on March 28, 2021. The availability of the Draft EA for public review was announced in local and on-post newspapers as well as USACE's social media platforms. Printed and electronic copies of the Draft EA were made available for review, checkout, and/or download at local libraries, as applicable. Electronic copies of the Draft EA were also available for viewing or download on the USACE project website (<https://www.nab.usace.army.mil/SM-1A/>). Further details regarding the distribution and review of the Draft EA are provided in **Section 8**.

Two in-person public meetings were conducted in Fairbanks and Delta Junction during the 30-day Draft EA public review period. The in-person meetings were streamed live and subsequently archived on the YouTube online platform, and included a question and answer chat box. A presentation including a question and answer session was given at both public meetings. While the public could ask questions, these were not considered comments on the Draft EA as USACE provided direction on how to submit comments via comment form, email, or U.S. postal mail. A public meeting was also conducted in a virtual/online format in accordance with the *Interim Army Procedures for NEPA* dated June 15, 2020. The virtual public meeting was open concurrently with the comment period. Public meeting materials are available in **Appendix A**.

The 30-day Draft EA public review period also provided the opportunity for public comment during the National Historic Preservation Act (NHPA) Section 106 process. The NHPA Section 106 process is being conducted in parallel with the NEPA process for the Proposed Action.

No comments requiring substantial revision of the EA, USACE's Proposed Action, or the impact analysis were received during the Draft EA public review period. Minor comments requiring minor revisions to the EA were addressed accordingly.

USACE is consulting with multiple regulatory agencies regarding the Proposed Action, including the Alaska Department of Environmental Conservation, Alaska Department of Fish and Game, Alaska Department of Natural Resources, Office of History and Archaeology (the Alaska State Historic Preservation Office [SHPO]), and U.S. Environmental Protection Agency (USEPA). In accordance with Department of Defense (DOD) Instruction 4710.02, *Interactions with Federally Recognized Tribes*, USACE is also coordinated with federally recognized Alaska Native tribes.

A list of individuals, agencies, organizations, Alaska Native tribal governments, and Alaska Native Claims Settlement Act (ANCSA) corporations that were notified of the Draft EA's availability for public review is provided in **Section 8**.

USACE outreach conducted to date for the Proposed Action is summarized in **Table 1.7-1**. The events and venues were selected to provide multiple on- and off-post opportunities to obtain information about the proposed decommissioning of SM-1A. Participants at each event were encouraged to ask questions and provide comments about the Proposed Action. In addition, USACE conducted several stakeholder, partner, and public engagements from August 6 to 8, 2019. During this time, USACE coordinated with project partners, including Fort Greely, USACE Alaska District, and the UP contractor to ensure continued regional expertise and transparency for the proposed decommissioning.

Table 1.7-1: Public Outreach Conducted to Date for the Proposed Action

Event	Date	Location
Restoration Advisory Board Meeting	April 25, 2018	Fort Greely, AK
Alaska Forum for the Environment	February 12-15, 2019	Anchorage, AK
On-post Community Meeting	April 23, 2019	Fort Greely, AK
Off-post Community Meeting	April 24, 2019	Delta Junction, AK
Delta Junction City Council Meeting	August 6, 2019	Delta Junction, AK
Pre-Technical Project Planning Meeting with Federal, State, and Local Regulatory Officials	June 11-12, 2020	Teleconference / Online
Delta Junction City Council Meeting	September 20, 2020	Delta Junction, AK
Tribal Stakeholder Meeting	September 21, 2020	Fairbanks, AK / Teleconference / Online
Technical Project Planning Meeting with Federal, State, and Local Regulatory Officials	January 28-29, 2021	Fairbanks, AK / Teleconference / Online
Draft EA Public Meetings	February 26 - March 28, 2021	Virtual Public Meeting / Online
Draft EA Public Meetings	March 9 and March 11, 2021	Fairbanks, AK and Delta Junction, AK YouTube Livestream / In-Person

1.8 Relevant Documents

1.8.1 Programmatic NEPA Review

Pursuant to NEPA, the USNRC has completed three program-level NEPA documents that evaluate the potential environmental effects from decommissioning nuclear reactor facilities and associated activities. The scope of these documents and their relevant conclusions that are applicable to the analysis presented in this EA, are summarized as follows:

- *Generic Environmental Impact Statement (GEIS) on Decommissioning of Nuclear Facilities, Supplement 1 (U.S. Nuclear Regulatory Commission Regulation [NUREG]-0586)* (USNRC 2002). This GEIS analyzes decommissioning activities performed to remove radioactive and nonradioactive (e.g., intake structures and cooling towers) materials from structures, systems, and components from license certification to termination. The GEIS determined that most potential environmental impacts from the decommissioning of nuclear facilities are small.
- *GEIS in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities (NUREG-1496)* (USNRC 1997). This GEIS analyzes regulatory alternatives for establishing radiological criteria for decommissioning licensed nuclear facilities. The GEIS concludes that decommissioning alternatives should consider the future use of the site, provisions for public participation, the minimization of radioactive waste volumes and overall public risk, and other factors.
- *Final Environmental Statement on the Transportation of Radioactive Material by Air and Other Modes (NUREG-0170)* (USNRC 1977). This Final Environmental Statement analyzes impacts on human health and safety (under normal and accident conditions) from the transport of radioactive material, packaged in accordance with applicable regulatory requirements. The Final Environmental Statement determined that risks to workers and the general public from exposure to radioactive material during transport are low.

This EA incorporates relevant analyses and conclusions from the NEPA documents listed above, as applicable.

1.8.2 Decommissioning Planning Documents and Studies

Relevant information from the following SM-1A decommissioning planning documents is incorporated in this EA, as applicable:

- Decommissioning Environmental Assessment (U.S. Army 1971)
- Historical Site Assessment (USACE 2008)
- Characterization Survey Report (USACE 2014)
- Decommissioning Plan (USACE 2020a)
- Waste Management and Disposal Plan (WMDP) (USACE 2021b)

1.8.3 Previous NEPA Documentation for the Disposal of Radioactive Waste and Nonradioactive Regulated Solid Waste in the Contiguous 48 States

The previously prepared NEPA documents listed below evaluate the disposal of radioactive waste and/or nonradioactive regulated solid waste at federally and privately operated facilities in the contiguous 48 states:

- *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste (DOE/EIS-0200)* (USDOE 1997)
- *Environmental Assessment for the Disposal of Greater-Than-Class C (GTCC) Low-Level Radioactive Waste and GTCC-Like Waste at Waste Control Specialists, Andrews County, Texas (DOE/EA-2082)* (USDOE 2018)
- *Final Environmental Impact Statement for the Disposal of Greater-Than-Class C (GTCC) Low-Level Radioactive Waste and GTCC-Like Waste (DOE/EIS-0375)* (USDOE 2016)
- *Final Site-Wide Environmental Impact Statement (EIS) for the Nevada National Security Site and Off-Site Locations in Nevada (DOE/EIS-0426)* (USDOE 2013)
- *Final Hanford Site Solid (Radioactive and Hazardous) Waste Program Environmental Impact Statement, Richland, Washington (DOE/EIS-0286F)* (USDOE 2004)

The documents listed above were prepared separately from this EA. This list is not intended to be comprehensive. Other NEPA documents evaluating the disposal of radioactive waste and nonradioactive regulated solid waste in the contiguous 48 states may be available.

1.8.4 Other Relevant Documents

Information relevant to the Proposed Action analyzed in this EA was obtained from multiple sources. This information is cited or summarized throughout the document, as appropriate. A complete list of references is provided in **Section 6**.

1.9 Regulatory Framework

This EA has been prepared in accordance with NEPA, CEQ regulations, and Army NEPA regulations (**Section 1.1**). Other laws and regulations applicable to the Proposed Action include—but are not limited to—the following:

- Atomic Energy Act (AEA) (42 USC 2011 et seq.)
- Clean Water Act (CWA) (33 USC 1251 et seq.)
- Resource Conservation and Recovery Act (RCRA) of 1976 (42 USC 6901 et seq.)
- Section 438 of the Energy Independence and Security Act (Public Law 110-140)
- Federal Clean Air Act (CAA) of 1990 (42 USC 7401 et seq., as amended)
- Endangered Species Act (16 USC 1531 et seq.)
- Migratory Bird Treaty Act (MBTA) (16 USC 703 et seq.)
- NHPA (16 USC 470 et seq., 54 USC 300101 et seq.)

- Native American Graves and Protection and Repatriation Act (25 USC 3001 et seq.)
- Toxic Substances Control Act (TSCA) of 1976 (15 USC 2601 et seq.)
- Transportation Safety Act of 1974 (Public Law 93-633)
- Hazardous Material Transportation Act (49 USC 5101 et seq.)
- Energy Reorganization Act of 1974
- EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (1994)
- EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (21 April 1997), as amended by EO 13296 (2003)
- EO 13834, *Efficient Federal Operations* (2018)
- State of Alaska Solid Waste Regulations (18 Alaska Administrative Code [AAC] 60)

2.0 Description of Proposed Action and Alternatives

2.1 Introduction

This section describes the Army's Proposed Action to decommission SM-1A. Alternatives retained for analysis in this EA, alternatives that USACE considered but dismissed from detailed EA analysis, and USACE's alternatives screening criteria are also described.

2.2 Description of the Proposed Action

Under the Proposed Action, USACE would: 1) complete the decommissioning and dismantlement of SM-1A in accordance with the ARO-approved DP; 2) terminate the U.S. Army-issued SM-1A decommissioning permit; and 3) release the SM-1A site for unrestricted use in accordance with USNRC regulations in 10 CFR 20.1402 and adopted by the Army. Implementation of the Proposed Action would occur over approximately 6 years, beginning in 2022 and ending in 2028.

The Proposed Action would be implemented primarily in a 1.5-acre area that includes Building 606 North, the VC, Building J-5, and an approximately 18,000-square-foot (0.4-acre) gravel parking area immediately north of Building 606 North (**Figure 1.2-1**). The parking area would primarily be used for laydown of decommissioning-related materials and staging for packaged (i.e., containerized) waste prior to transport from the site. Vehicular traffic associated with the Proposed Action would use existing on- and off-post roads to access the SM-1A site throughout the 6-year implementation period.

This section summarizes key elements of the Proposed Action; additional information is provided in **Section 3**, as applicable. A summary of the major phases of the Proposed Action is provided in **Table 2.2-1**. These phases are listed in the probable sequence that they would occur. However, some variability in this sequence is anticipated due to scheduling considerations, construction seasons, permitting, and the availability of personnel and specialized equipment.

The Proposed Action would require the complete dismantlement of Building 606 North, the VC, and Building J-5 to remove components of SM-1A in those buildings. Building materials and underlying soils impacted by residual contamination associated with the reactor's operation would also be removed. Removal of these buildings, materials, and soils would support release of the site in accordance with unrestricted use criteria in 10 CFR 20.1402.

Building 606 is owned and used by the installation's UP contractor. UP contractor operations must relocate to Building 606 South for the duration of the Proposed Action. Discussions between the UP contractor, Defense Logistics Agency, Fort Greely, and USACE are ongoing; it is believed that the Proposed Action is implementable with the full support of the UP contractor.

To replace UP contractor administrative and storage space that would be lost due to the proposed dismantlement of Building 606 North, an approximately 1,500-square-foot temporary facility may be erected adjacent to the southwestern side of Building 606 South. This temporary facility may consist of modular office and storage units (similar to steel shipping containers) that could be stacked up to two stories high to provide the

necessary space and covered to accommodate weather. An approximately 1,000-square-foot permanent addition may also be built on the southeast corner of Building 606 to provide additional storage, office, and work space. Relocation of UP contractor operations to the southern portion of Building 606 must occur prior to the implementation of decommissioning activities as described under Phase 1 (**Table 2.2-1**). The southern portion of Building 606 would be physically isolated from the northern end for the duration of the Proposed Action. Following decommissioning, the UP contractor may rebuild in-kind administrative and storage facilities on the footprint of the existing Building 606 North.

Table 2.2-1: Proposed Action Summary

Proposed Action Phase	Description
<p>1. Mobilization and Site Preparation; Establishment of Exterior Controlled Area Boundary and Radiological Control Points</p>	<p>Activities in this phase would include:</p> <ul style="list-style-type: none"> • Establishing an approximately 1,500-square-foot temporary work facility and 1,000-square-foot permanent addition to the southwestern and southeastern sides of Building 606 South, respectively, and relocating UP contractor operations (including personnel, materials, and equipment) to those areas and Building 606 South from Building 606 North • Relocating overhead power lines and aboveground fuel lines, as necessary, prior to heavy equipment mobilization • Removing existing areas of vegetation on the SM-1A site, consisting of small areas of grass and two trees near the southwest corner of the building • Installing new fencing to separate the project area from Building 606 South (the fencing would include vehicle and pedestrian access control points, and could be extended farther north to enclose additional laydown areas or waste storage locations) • Establishing radiological and security controls • Establishing temporary or modified facilities and work support areas • Establishing one or more temporary waste staging areas • Disconnecting existing electrical power service to Building 606 North and Building J-5; installing temporary power connections to those buildings • Upgrading or reconfiguring the site's existing perimeter security fence and access control points, as necessary • Mobilization of personnel and equipment to the SM-1A site
<p>2. Building J-5 (also known as Building 607) Disposition</p>	<p>Building J-5 would be demolished early in the project to provide additional operating space on the eastern side of the SM-1A site. Dismantlement would include removal of nonradioactive M&E and the aboveground structure so the area could be used for additional workspace for the dismantlement of Building 606 North, the VC, and associated structures. The concrete floor slab and any underlying soils impacted by radioactive or nonradioactive constituents would be removed later in the Proposed Action to meet unrestricted use standards. FSSs would be conducted as necessary to ensure that excavated areas and remaining soils meet unrestricted release criteria, and the disturbed area would be subsequently backfilled with clean fill soils meeting applicable Fort Greely requirements.</p>
<p>3. Building 606 North Disposition</p>	<p>As necessary, radiological release surveys and abatement of nonradioactive regulated materials would be conducted in Buildings 606 North (Table 1.2-1). Nonradioactive regulated materials at SM-1A may include:</p> <ul style="list-style-type: none"> • LBP • ACM • PCBs in paints, oils, and other materials • Other nonradioactive regulated materials, such as lead pipes and solder, fluorescent tubes and bulbs, and mercury switches and thermostats <p>Nonradioactive regulated materials would be removed from unrestricted areas of Building 606 North first. Unrestricted areas are those areas outside the VC, spent fuel pit, waste tanks pit, and the Demineralizer Room. This would be followed by</p>

Table 2.2-1: Proposed Action Summary

Proposed Action Phase	Description
	<p>removal of M&E and radiologically contaminated regulated materials from the Demineralizer Room, spent fuel pit, VC, and waste tanks pit. Aboveground and underground structures and equipment comprising these areas would also be dismantled.</p> <p>Due to the harsh weather conditions at Fort Greely, portions of Building 606 North would be used for project support activities, material storage, waste decontamination, or controlled access to radiologically contaminated areas as long as reasonably possible. After indoor areas are no longer needed, radiologically contaminated materials and nonradioactive regulated materials are removed, and painted surfaces are decontaminated to address PCB and lead paints, Building 606 North would be demolished. FSSs of the walls, ceilings, floors, structural members, remaining M&E, and other remaining components would be performed as necessary to allow for the unrestricted release of building materials prior to demolition. The dismantlement of Building 606 North would include the removal of subsurface components such as foundation slabs, footings, and underlying and/or adjacent soils.</p> <p>Radioactive waste and nonradioactive regulated solid waste would be managed in accordance with applicable requirements established by USNRC and USEPA, respectively, through their enforcement of RCRA and TSCA. These wastes would be packaged (i.e., containerized) in accordance with applicable regulatory requirements established by USNRC, USDOT (including the IMDG Code), and USEPA, and transported by trained and qualified contractors for disposal at permitted facilities in the contiguous 48 states (there are no permitted disposal facilities in Alaska for radioactive waste or most nonradioactive regulated solid wastes). Waste transportation is discussed in Section 3.7. Wastes that would be generated by the Proposed Action are discussed in Section 3.10.</p>
<p>4. Other Exterior System Removals, Remediation, and Final Status Surveys</p>	<p>Supply Well No. 11, Supply Well No. 12, and Recharge Well No. 13 would be abandoned in place and sealed in accordance with ADEC drinking water regulations set forth in 18 AAC 80.015(e) after associated pumps, pipes, and concrete structures are removed, characterized, and disposed of according to state and federal regulations. An approximately 400-foot-long concrete utilidor connecting Building 606 North with Wells No. 11 and 12 (Figure 1.2-2), and an approximately 450-foot pipe from the north end of the utilidor to Well No. 13 would be excavated and removed. The utilidor is approximately 3 feet bgs while the pipe to Well No. 13 is 4 to 5.5 feet bgs. An approximately 40-foot-long remnant pipe segment (from the waste tanks pit to the perimeter fence) associated with SM-1A's original liquid radioactive waste discharge system, which was deactivated in 1968, would also be excavated and removed. This remnant segment is less than 6 feet bgs. All excavations would be backfilled with clean fill soils meeting applicable Fort Greely requirements. FSSs would be conducted at excavated areas as necessary to ensure radioactivity levels meet applicable unrestricted use criteria.</p>
<p>5. Site Restoration</p>	<p>FSSs would be conducted as necessary to ensure that excavated areas and remaining soils meet unrestricted release criteria. FSS results would be confirmed by an independent verification contractor. Excavated areas would then be backfilled with clean fill soils meeting applicable Fort Greely requirements, graded, and compacted to achieve positive drainage. The site would be seeded with native grasses to prevent soil erosion. Future use or redevelopment of the site would be at the discretion of Fort Greely and the UP contractor. NEPA documentation would be prepared separately from this EA as applicable for future use or redevelopment of the site.</p>

Table 2.2-1: Proposed Action Summary

Proposed Action Phase	Description
6. Demobilization	Temporary structures or infrastructure components used to support the prior phases of the Proposed Action would be dismantled and removed from the site. Historical markers or displays describing SM-1A may be installed during this phase in accordance with the outcome of the NHPA Section 106 consultation process (Section 3.2). Following demobilization, no remnants of SM-1A would remain on the site.

Notes:

- | | |
|--|---|
| AAC = Alaska Administrative Code | NHPA = National Historic Preservation Act |
| ACM = asbestos-containing material | PCB = polychlorinated biphenyl |
| ADEC = Alaska Department of Environmental Conservation | RCRA = Resource Conservation and Recovery Act |
| bgs = below ground surface | TSCA = Toxic Substances Control Act |
| EA = Environmental Assessment | UP = utility privatization |
| FSS = Final Status Survey | USDOT = United States Department of Transportation |
| IMDG = International Maritime Dangerous Goods | USEPA = United States Environmental Protection Agency |
| LBP = lead-based paint | USNRC = United States Nuclear Regulatory Commission |
| M&E = materials and equipment | VC = Vapor Container |
| NEPA = National Environmental Policy Act | |

The Proposed Action would require substantial excavation of the SM-1A site in areas underlying and adjacent to Building 606 North and Building J-5 to remove contaminated soils and subsurface components (e.g., foundation slabs, footings, and pipes). The Proposed Action would also generate radioactive waste, nonradioactive regulated solid waste, and nonhazardous solid waste. A summary of estimated volumes of waste (including soil excavation) and the number of trucks or containers required to transport waste from the SM-1A site for disposal is provided in **Table 2.2-2**.

Table 2.2-2: Estimated Waste Volumes and Trucks/Containers Required for Shipment

Waste Type	Estimated Waste Volume ¹ (cubic yards)	Estimated Number of Trucks or Containers ¹
C&D waste ²	3,122	274
Radioactive Waste	2,979	254 ³
Nonradioactive Regulated Solid Waste	49	
TOTAL	6,150	528
Excavated Soils ³	1,687	120

Notes:

- ¹ Waste volume and truck/container estimates are current as of April 2021.
- ² C&D waste typically consists of inert materials such as lumber, metal, roofing, bricks, drywall, insulation, and concrete (U.S. Army 2017).
- ³ Already included in the estimated radioactive waste volume and corresponding number of trucks/containers but listed separately to provide additional detail. It is anticipated that most excavated soils would require disposal as radioactive waste and/or nonradioactive regulated material at permitted facilities in the contiguous 48 states.
- C&D = construction and demolition
Source: USACE 2021b

As provided in **Table 2.2-2**, it is anticipated that approximately half of the waste generated during the Proposed Action would be characterized as construction and demolition (C&D) waste. C&D waste is not radiologically contaminated and does not contain nonradioactive regulated solid waste such as lead or polychlorinated biphenyls (PCBs). Therefore, this waste can be recycled or disposed of in typical municipal solid waste (MSW) or C&D waste landfills. Nonradioactive regulated solid waste would likely include substances regulated by USEPA in accordance with RCRA, such as lead and lead-based paint (LBP); universal wastes, which are a class of RCRA-regulated materials that have less stringent management requirements (40 CFR 273); and substances regulated under TSCA, such as oils, equipment, and surfaces containing PCBs.

Based on the low levels of residual radioactivity at SM-1A, it is anticipated that radioactive waste generated during the Proposed Action would be classified as either Class A, Class B, or Class C low-level radioactive waste (LLRW), in accordance with 10 CFR 61.55. Class A LLRW requires the fewest long-term considerations for disposal and Class C requires the most. LLRW classifications are provided in **Table 2.2-3**. Radioactive waste may also be classified and managed in accordance with U.S. Department of Energy (USDOE) regulations and guidance as "low-level waste" as defined in USDOE Order 435.1. Wastes that would be generated by the Proposed Action are further described in **Section 3.10**.

Table 2.2-3: LLRW Classification Summary

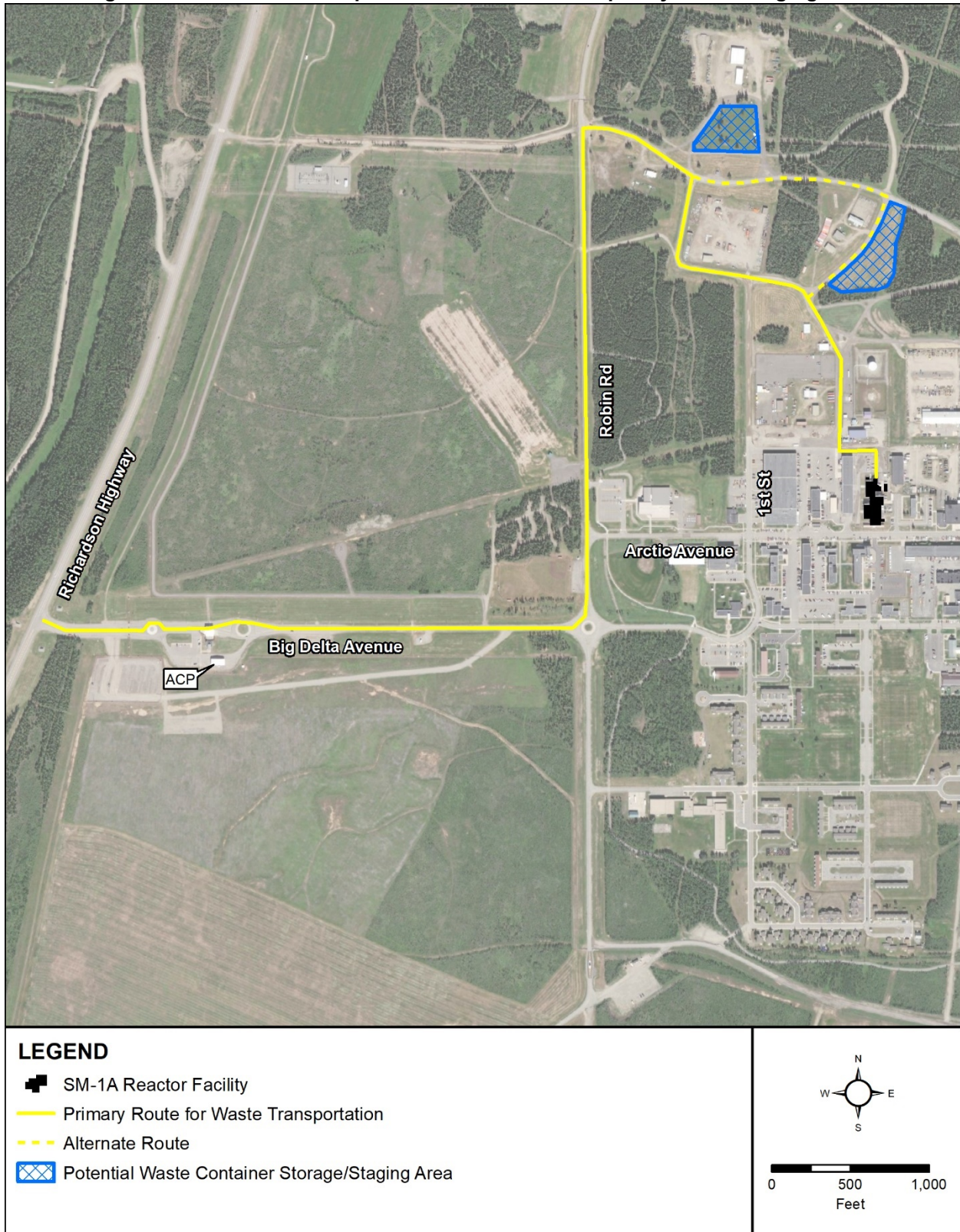
LLRW Classification	Description
A	Waste that is usually segregated from other waste classes at the disposal site.
B	Waste that must meet more rigorous requirements on waste form to ensure stability after disposal.
C	Waste that not only must meet more rigorous requirements on waste form to ensure stability but also requires additional measures at the disposal facility to protect against inadvertent intrusion.

Source: 10 CFR 61.55(a)(2)(ii-iv)

Waste would be segregated throughout the duration of the Proposed Action according to each disposal facility's waste acceptance criteria. C&D waste would be recycled to the extent practicable or disposed of at on- or off-post landfills. Nonradioactive regulated solid waste would be managed in accordance with applicable federal and state requirements as well as Fort Greely environmental policies and procedures, including the installation's Integrated Solid Waste Management Plan and spill report procedures. Radioactive waste, nonradioactive regulated solid waste, and C&D waste generated during the Proposed Action would be managed, characterized, packaged, transported, and disposed of in accordance with applicable federal, state, and local regulatory and permit requirements.

All waste generated during the Proposed Action would be initially transported from the SM-1A site by trucks. On-post waste transportation routes would follow existing roads and avoid residential areas, recreational facilities, and other sensitive land uses to the extent practicable (**Figure 2.2-1**). C&D waste would be transported directly from the SM-1A site to appropriate recycling or disposal facilities in typical dump trucks or in end-dump roll-off containers.

Figure 2.2-1: On-Post Transportation Routes and Temporary Waste Staging Areas



Radioactive waste and nonradioactive regulated solid waste would be characterized and packaged at the SM-1A site, then temporarily staged at one or more on-post areas (**Figure 2.2-1**) in accordance with applicable regulations prior to transport from Fort Greely to appropriate disposal facilities in the contiguous 48 states. The temporary waste staging areas would consist of graded, level sites at least 2 acres in size with a concrete pad, security fence, and remote security monitoring at a minimum. Overweight and/or oversize SM-1A components requiring specialized transport requirements, such as the Reactor Pressure Vessel (RPV), would be transported directly from the SM-1A site for disposal in the contiguous 48 states. Off-post waste transportation would follow existing routes (e.g., roads, rail lines, navigation routes). Waste transportation is further described in **Section 3.7**.

There are no USNRC-permitted radiological waste disposal facilities in Alaska (ADEC 2020a). Additionally, with the exception of certain types of asbestos-containing materials (ACM), the disposal of most nonradioactive solid waste regulated under RCRA and TSCA is prohibited in Alaska. Therefore, all radioactive waste and most nonradioactive regulated solid waste generated by the Proposed Action would be transported to permitted facilities in the contiguous 48 states for disposal. This waste would be sorted, packaged, and transported by trained and qualified contractors in accordance with applicable regulatory requirements established by the USNRC, U.S. Department of Transportation (USDOT) (including the International Maritime Dangerous Goods [IMDG] Code), USEPA, other federal agencies, and the State of Alaska. Radioactive waste and nonradioactive regulated solid waste would likely be packaged in intermodal shipping containers ranging in capacity from 25 to 40 cubic yards. USACE and its contractor would evaluate packaging options throughout the Proposed Action and select the safest and most efficient waste packaging and transport options available.

Existing licensed and permitted facilities in the contiguous 48 states that USACE is considering for disposal of radioactive waste and/or nonradioactive regulated solid waste include the following:

1. Waste Control Specialists, LLC
Federal Waste Facility
9998 West State Hwy 176
Andrews, Texas 79714
2. U.S. Department of Energy (USDOE) Nevada National Security Site
Nevada Field Office
National Nuclear Security Administration
Las Vegas, Nevada 89193-8518
3. USDOE Hanford Nuclear Reservation
Environmental Restoration Disposal Facility
Richland, Washington 99352
4. Energy Solutions
Interstate 80, Exit 49
Grantsville, Utah 84029

5. U.S. Ecology Washington
1777 Terminal Drive, Suite A
Richland, Washington 99354
6. U.S. Ecology Idaho
20400 Lemley Road
Grand View, Idaho 83624

The disposal of radioactive waste and nonradioactive regulated solid waste at the facilities listed above (or at similar types of facilities in the contiguous 48 states) has been previously evaluated in NEPA documentation prepared separately from this EA (**Section 1.8.3**).

As described above, radioactive waste and nonradioactive regulated solid waste would initially be transported from the SM-1A site by truck. Some waste, primarily consisting of C&D waste, could be disposed of at the Delta Junction Landfill or another regional disposal site, transfer station, or recycling facility. Radioactive waste and nonradioactive regulated solid waste destined for disposal in the contiguous 48 states would be trucked to Fairbanks and transferred to railcars. From Fairbanks, the waste would travel by rail to either the Port of Alaska in Anchorage or the Port of Whittier, then transported via vessel to the Port of Seattle. From Seattle, the waste would travel via rail or truck to one of the available disposal sites in Washington, Utah, Idaho, Nevada, and/or Texas. Waste transportation modes used throughout the Proposed Action would adhere to established routes; waste transportation methodologies would conform to practices previously evaluated in USNRC NEPA documents, and approved.

The transportation of waste by truck and/or rail through Canada from Fort Greely to disposal facilities in the contiguous 48 states is not currently anticipated due to the additional time that would be required to satisfy applicable Canadian regulatory compliance and permitting requirements; the increased duration and potential safety risks of truck transport over long distances in an arctic or sub-arctic environment (the nearest railhead where cargo could be transferred to trains is in Edmonton, Alberta, approximately 1,731 road miles from Fort Greely); and the resulting inefficiencies from transportation of smaller volumes by truck relative to other modes, such as train or vessels. Therefore, the shipment of waste from SM-1A through Canada is not addressed further in this EA.

Some waste could be transported from Fort Greely to the contiguous 48 states via air. The types and quantities of waste that would be transported via air, type(s) of aircraft that would be used, receiving airports or military airfields, and other factors regarding this transportation option are not known at the current stage of planning. USACE will continue to evaluate this option as project planning continues and will prepare supplemental NEPA documentation as necessary if this option is selected for implementation.

Shipments of waste from the SM-1A site would be expected to begin in the summer of 2023. A total of approximately 528 waste containers or truckloads would be transported from Fort Greely during the Proposed Action (**Table 2.2-2**). On average, it is anticipated that approximately 132 containers or truckloads would be transported from Fort Greely each shipping season between 2023 and 2026. However, the actual number of containers that would be transported during each season would vary based on project schedule. It is likely that the number of containers shipped between 2024 and 2026 would exceed the

average noted above due to the anticipated schedule of decommissioning and dismantlement activities.

Transportation of waste from Fort Greely is subject to weight restrictions during the spring months (i.e., during the thaw period) and may be limited due to weather during the fall and winter. During the transportation seasons, trucks would transport waste destined for in-state disposal directly to the disposal or recycling facility. Waste containers destined for out-of-state disposal would be transported on a routine schedule (e.g., twice a week) to a rail yard in Fairbanks for transfer to trains for transit to the Port of Alaska or the Port of Whittier (USACE 2020a).

The RPV is the most radioactive item remaining at SM-1A. It is also the most substantial in terms of weight when considering the additional shielding that would be necessary for shipping. The use of a large crane would be required to lift the RPV from the primary shield tank for placement into a USDOT-compliant shielded shipping container for disposition. The packaged RPV would be anticipated to weigh approximately 60,000 to 80,000 pounds, not including the transport vehicle. Heavy equipment required during the Proposed Action (e.g., cranes, skid loaders, forklifts, and boom lifts) would be mobilized to the SM-1A site as needed due to space constraints.

Waste disposition surveys would be conducted periodically throughout the Proposed Action to demonstrate that nonradioactive wastes and land areas meet the applicable unrestricted release criteria. A Material Categorization, Survey, and Release Plan would be developed to establish the framework for releasing structures and M&E as nonradiologically impacted waste. Building surfaces and M&E would be surveyed and released for disposal in accordance with the Multi-Agency Radiation Survey and Assessment of Materials and Equipment Manual (USNRC 2009). Land areas would be surveyed and released in accordance Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (USNRC 2000). The Material Characterization, Survey, and Release Plans would be approved by USACE and ARO prior to conducting each waste disposition survey.

Following the removal of SM-1A facilities and infrastructure, Final Status Surveys (FSSs) would be conducted as necessary to ensure that excavated areas and remaining soils meet unrestricted release criteria. FSS results would be confirmed by Oak Ridge Institute for Science and Education, an independent verification contractor. Excavated areas of the SM-1A site would then be backfilled with clean fill soils meeting applicable Fort Greely requirements. The site would be graded and compacted to achieve positive drainage, then seeded with native grasses to prevent soil erosion. The SM-1A site would be considered suitable for release for unrestricted use once it is determined that the average member of a critical group would not receive a total effective dose equivalent in excess of 25 mrem per year above background radiation levels, in accordance with radiological dose criteria in 10 CFR 20.1402 (**Section 1.2.3**).

Following completion of the Proposed Action, future use or redevelopment of the SM-1A site would be at the discretion of Fort Greely and the UP contractor. As applicable, NEPA documentation would be prepared separately from this EA for future use or redevelopment of the site.

2.3 Environmental Impact Minimization

The Proposed Action would incorporate BMPs to proactively minimize environmental impacts and comply with applicable environmental regulatory requirements (**Table 2.3-1**). The development and implementation of formal mitigation measures would not be required because potential adverse impacts from the Proposed Action would be less than significant.

Table 2.3-1: Best Management Practices Applicable to the Proposed Action

Resource Area	BMP
Cultural Resources (Section 3.2)	In consultation with the SHPO and other participating consulting parties, develop an MOA with stipulations to resolve adverse effects on historic properties in accordance with 36 CFR 800.6(c).
	Adhere to the unanticipated discovery plan set forth in the 2020-2025 USAG Alaska ICRMP in the event that a previously unidentified archaeological site—which could include human remains, funerary or sacred objects, or other items of cultural patrimony—is discovered during the Proposed Action.
Water Resources (Section 3.3)	Prepare and adhere to a site-specific SWPPP as a condition of coverage under the CGP to manage the quality and quantity of stormwater discharged from the SM-1A site.
	Capture, containerize, and characterize contact water from decommissioning activities (e.g., wet saw cutting, power washing, decontamination) and dispose of accordingly at permitted off-post facilities, in accordance with a site-specific liquid effluent monitoring plan that would be prepared as part of the project-specific Environmental Monitoring and Control program.
	Prepare and adhere to a project- and site-specific SPCC Plan.
	In accordance with the SPCC Plan, provide spill containment and cleanup kits in conspicuous and accessible locations throughout the SM-1A site for use in the event of an unintended release of contaminants or regulated materials.
Socioeconomics and Environmental Justice (Section 3.4)	Continue public engagement with local communities on and around Fort Greely throughout the duration of the Proposed Action.
	Continue to maintain information regarding the Proposed Action on the USACE project website (https://www.nab.usace.army.mil/SM-1A/).
	BMPs identified for other resources listed in this table would minimize potential adverse impacts on nearby on- and off-post communities, particularly from noise, air pollutant emissions, fugitive dust, traffic, waste, and safety and health. Adherence to these BMPs would ensure that potential impacts on environmental justice communities are not disproportionately adverse.
Biological Resources (Section 3.5)	Adhere to applicable policies and practices set forth in the Fort Greely Draft INRMP to prevent or minimize the introduction and spread of invasive plant species, such as only using certified weed-free seed mixtures during revegetation.
	Use spotters or escort vehicles, as determined necessary, to minimize the risk of collisions with moose or other wildlife during on-post vehicle operations (e.g., waste transport).
	Coordinate with the Fort Greely Directorate of Public Works, Environmental Division, to determine the most appropriate course of action if an active MBTA-protected bird nest is observed on the SM-1A site.
Air Quality (Section 3.6)	Implement a fugitive dust control plan to control and minimize fugitive dust emissions.
	Directly load (i.e., do not stockpile) radioactive waste and nonradioactive regulated solid waste into appropriate containers for transport.
	Transport radioactive waste and nonradioactive regulated solid waste in closed containers meeting applicable regulatory requirements.

Table 2.3-1: Best Management Practices Applicable to the Proposed Action

Resource Area	BMP
	Cover payloads of C&D waste and backfill soils in trucks while in transit.
	Periodically spray water on on-post paved and unpaved haul roads as weather conditions allow.
	Cover clean backfill soil stockpiles or periodically spray with water as weather conditions allow.
Transportation and Traffic (Section 3.7)	Use trained and qualified contractors to transport waste in accordance with applicable federal and state regulatory requirements for disposal at permitted on-post and/or off-post facilities.
	Implement a transportation management plan that identifies approved on-post travel routes to and from the SM-1A site for heavy trucks transporting materials, equipment, and waste.
	Schedule decommissioning-related traffic (particularly heavy truck traffic) for off-peak hours when feasible and in coordination with Fort Greely and other affected organizations.
	Package and ship all radioactive and nonradioactive waste in accordance with the WTDP, as well as applicable regulatory and permit requirements established by USNRC, USDOT (including the IMDG Code), USEPA, other agencies, and the State of Alaska.
Utilities (Section 3.8)	Coordinate with potentially affected facilities regarding temporary planned utility service shutoffs or disruptions to prevent or minimize impacts on their operations.
	Sequence or stagger temporary planned utility service shutoffs or disruptions to the extent feasible.
Soils (Section 3.9)	Prepare and adhere to a project- and site-specific SWPPP as a condition of coverage under the CGP. Adherence to the SWPPP would manage the quantity and quality of stormwater discharged from the SM-1A site, prevent or minimize the migration of temporarily disturbed or stockpiled soils, and the corresponding sedimentation of receiving waterbodies.
	Replace soils excavated from the SM-1A site with clean fill soils meeting applicable Fort Greely requirements.
	Implement an environmental monitoring plan and conduct soil sampling to support release of the site.
	Conduct an FSS following the removal of SM-1A facilities and infrastructure to ensure remaining soils meet the unrestricted release criteria.
	Seed the site with native grasses following backfill and grading to prevent soil erosion.
Waste (Section 3.10)	Prepare and adhere to a Hazardous Material Abatement Plan in accordance with EM 385-1-1, <i>Safety and Health Requirements</i> , to establish procedures for the management and disposition of nonradioactive regulated solid waste.
	Implement a WMDP that would establish procedures and requirements for the safe characterization, management, handling, storage, transportation, and disposal or recycling of radioactive waste, nonradioactive regulated solid waste, and C&D waste to optimize safety and prevent or minimize risks to the extent practicable.
	Manage and dispose of nonradioactive regulated solid waste in accordance with applicable requirements established by USEPA through its enforcement of RCRA, TSCA, and requirements established by ADEC, where applicable.
	Prepare and adhere to a project- and site-specific SPCC Plan to prevent or minimize the potential for accidental spills of petroleum products or other regulated materials from decommissioning-related vehicles and equipment, and establish procedures for containing and cleaning up any spills that may occur.
	Provide spill containment and cleanup kits in conspicuous and accessible locations throughout the SM-1A site in accordance with the SPCC Plan for use in the event of an unintended release of regulated materials.

Table 2.3-1: Best Management Practices Applicable to the Proposed Action

Resource Area	BMP
Safety and Health (Section 3.11)	Implement an Industrial Safety Program to establish safety and health procedures, practices, and the use of PPE.
	In accordance with EM 385-1-1, implement a site- and project-specific APP that would describe the specific work, work processes, equipment to be used, and hazards pertaining to the decommissioning activities.
	Implement a WMDP that would establish procedures and requirements for the safe characterization, management, handling, storage, transportation, and disposal or recycling of radioactive waste, nonradioactive regulated solid waste, and C&D waste to optimize safety and prevent or minimize risks to the extent practicable.
	Prepare and adhere to AHAs that would define the steps to perform the work; assign risk assessment codes to each step; and identify the competent person(s) required for specific tasks.
	Prior to performing particularly hazardous tasks or operations, coordinate with on- or off-post fire and emergency services or other relevant organizations to identify and prevent or minimize potential risks.
	Conduct decommissioning activities in a controlled manner to minimize and keep radiological exposures ALARA in accordance with EM 385-1-80, <i>Radiation Protection</i> .
	Implement a Radiation Safety Program and Radiation Protection Plan that would require the use of applicable PPE and establish limits and monitoring for worker exposure to radiation in accordance with EM 385-1-1.
	Conduct environmental monitoring throughout the Proposed Action to ensure controls are adequate to protect human health and the environment.
	Establish one or more MOAs with on- and/or off-post fire and emergency response services and/or emergency health care providers to minimize fire risk and ensure safety; define roles and responsibilities; and establish conditions for response, oversight, and monitoring.

Notes:

ADEC = Alaska Department of Environmental Conservation

AHA = All-Hazards Assessment

ALARA = as low as reasonably achievable

APP = Accident Prevention Plan

BMP = best management practice(s)

C&D = construction and demolition

CFR = Code of Federal Regulations

CGP = Construction General Permit

EA = Environmental Assessment

EM = Engineer Manual

FSS = Final Status Survey

ICRMP = Integrated Cultural Resources Management Plan

IMDG = International Maritime Dangerous Goods

INRMP = Integrated Natural Resources Management Plan

MBTA = Migratory Bird Treaty Act

MOA = memorandum of agreement

PPE = personal protective equipment

RCRA = Resource Conservation and Recovery Act

SHPO = State Historic Preservation Office

SPCC = Spill Prevention, Control, and Countermeasure

SWPPP = Stormwater Pollution Prevention Plan

TSCA = Toxic Substances Control Act

USACE = United States Army Corps of Engineers

USAG = United States Army Garrison

USDOT = United States Department of transportation

USEPA = United States Environmental Protection Agency

USNRC = Nuclear Regulatory Commission

WMDP = Waste Management and Disposal Plan

WTDP = Waste Transportation and Disposal Plan

2.4 Alternatives Screening Process

2.4.1 Decommissioning Strategies and Alternative Screening Criteria

NEPA, CEQ regulations, and Army NEPA regulations require the objective consideration of reasonable alternatives. USNRC regulations adopted by the Army limit the possible

reasonable alternatives for decommissioning nuclear reactor facilities within 60 years of deactivation (USNRC 2020a):

- **SAFSTOR:** The nuclear facility is maintained and monitored in a condition that allows the radioactivity to decay; afterward, the plant is dismantled and the property is decontaminated.
- **Decontamination (DECON):** Equipment, structures, and portions of the facility containing radioactive contaminants are removed or decontaminated to a level that permits release of the property and termination of the permit.
- **Entombment (ENTOMB):** Radioactive contaminants are permanently encased on site in structurally sound material such as concrete. The facility is maintained and monitored until the radioactivity decays to a level permitting restricted release of the property.

USACE considered each of these strategies during the initial process to develop alternatives for decommissioning SM-1A. However, only the Proposed Action met these regulations as incorporated in this action's purpose and need (**Section 1.3**).

USACE evaluated multiple alternatives for implementing the Proposed Action against the Purpose and Need which incorporates the various USNRC and Army regulations.

Alternatives that were dismissed from further analysis in the EA are described in **Section 2.4.2**. Alternatives retained for analysis in the EA are described in **Section 2.4.3**.

2.4.2 Alternatives Considered but Dismissed from Detailed Analysis

USACE considered other alternatives for implementing the Proposed Action. These alternatives would not meet the Proposed Action's purpose and need. Therefore, they were dismissed from further evaluation in this EA. The rationale for dismissing each of these considered alternatives is summarized below.

2.4.2.1 Partial Dismantlement Alternative (DECON)

The Partial Dismantlement Alternative (a DECON alternative as described above) would remove radiologically contaminated structures including Building J-5, the spent fuel pit, VC, Demineralizer Room, waste tanks pit, radioactive M&E, and radioactive waste encased in these structures. Radiologically contaminated soils on the SM-1A site that are accessible to excavation and earthmoving equipment (i.e., soils in open areas and/or adjacent to facilities that would not be dismantled) would also be removed. This alternative would result in the removal of nearly all of the radioactive contamination at SM-1A. This alternative would not require the dismantlement of Building 606 North. The UP contractor would remain in Building 606 North and the proposed decommissioning activities would be designed and implemented in a manner that would avoid impacting its operations in the building. USACE would demolish adjacent structures and remove radioactive materials from the outside. Walls shared with Building 606 North would remain in place and exterior surfaces would be decontaminated to releasable levels. Due to the requirement to leave Building 606 North intact, this alternative would require the construction of one or more temporary containment structures adjacent to the VC and/or Building 606 North to capture dust and debris generated during the proposed decommissioning.

Some radioactive materials and residual contamination would remain in Building 606 North under this alternative (e.g., the internally contaminated steam turbine, embedded pipes under the concrete floor, and materials encased in the pipe pit). USACE would apply site-specific dose-based radiological release criteria in accordance with 10 CFR 20.1402 to release Building 606 North and the surrounding impacted area for unrestricted use and achieve permit termination. Site conditions cannot be fully understood without more extensive dismantlement and excavation; therefore, this alternative carries some inherent and unknown risks that could inhibit USACE's ability to successfully meet unrestricted use criteria in accordance with 10 CFR 20.1402 and achieve permit termination within 60 years of the reactor's deactivation.

Aside from the potential risks associated with the unknown site conditions, this alternative would remove nearly all of the radioactive materials and contamination associated with SM-1A that may pose a risk to human health and by reducing the dose to the critical group to no more than 25 mrem per year above background levels in accordance with 10 CFR 20.1402 (**Section 1.2.3**). This alternative would also complete the decommissioning of SM-1A within 60 years of the reactor's deactivation. It would also avoid or minimize adverse effects on protected, beneficial, or valued environmental resources to the maximum extent possible. However, the Partial Dismantlement Alternative would fail to meet the purpose and need and was dismissed from further analysis in this EA for the following reasons:

- The physically constrained nature of the SM-1A site and the need to retain UP personnel and operations in Building 606 North would increase risks of inadvertent radiological exposure and/or physical injury while performing decommissioning and dismantlement activities on the site.
- Due to the highly constrained character of the SM-1A site and interior areas of Building 606 North (**Photo 7** and **Photo 8**) and the requirement to leave Building 606 North intact while removing radioactive M&E and radioactive waste encased in associated structures, extensive engineering controls would be required to safely perform associated work activities.
- While some land area would become available for additional use to support the military mission and land use planning objectives at Fort Greely after demolition of some of the SM-1A structures, the area would be small and restricted by Building 606 North and Building 606 South. In addition, not all radiological contamination would be removed; further remediation may be necessary in the future.



Photo 7: Building 606 North, ground floor—view through the annex connecting to Building 606 South

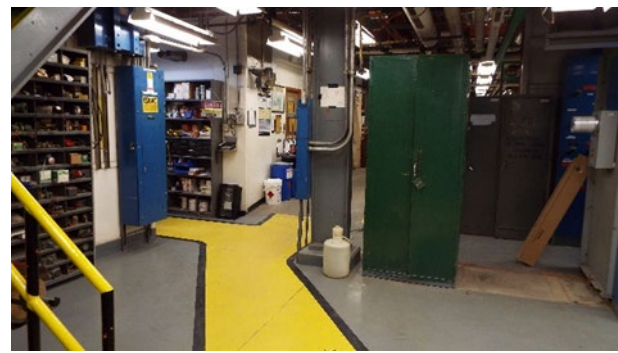


Photo 8: Building 606 North, ground floor—view from the annex entry into Building 606 North

2.4.2.2 Partial Entombment Alternative (ENTOMB)

The Partial Entombment Alternative (an ENTOMB alternative as described above) would leave some radiologically contaminated structures and the majority of the encased radioactive M&E on the SM-1A site. Under this alternative, Building J-5, the Demineralizer Room, and the spent fuel pit would be demolished, while the VC would be demolished to an elevation of approximately 6 feet above the ground surface (just above the height of the encased reactor shield tank). The VC would then be completely encased with cement/grout and an engineered structure would be constructed to entomb the remaining VC and the waste tank pit. The Partial Entombment Alternative would require substantial engineering where practicable to ensure that the entombment structure would meet current geotechnical, seismic, and similar applicable requirements and codes.

This alternative would not require the dismantlement of Building 606 North. The UP contractor would remain in Building 606 North and its operations in the building would not be impacted. Shared walls would remain in place and incorporated into the entombment structure. Under this alternative, the majority of radioactive materials and residual contamination would remain in Building 606 North. USACE would release Building 606 North for continued use and apply access and/or restrictions associated with the entombed areas.

For similar reasons as described for the Partial Dismantlement Alternative (**Section 2.4.2.1**), the Partial Entombment Alternative would fail to meet the purpose and need for this action. There would be an increased risk of exposure and/or injury from work-related accidents due to the requirement to leave Building 606 North intact and UP contractor personnel and operations in place while demolishing the adjoining structures and removing radioactive M&E and radioactive waste encased in associated structures. In addition, USACE would require a permit modification under this alternative to allow for the continued possession of radioactive materials in the entombment structure, including the reactor pressure vessel and steam generator, beyond 60 years of the reactor's deactivation. Because this alternative would continue to require a radioactive material possession permit, continued monitoring, and fail to release the property for unrestricted use, partial entombment would not meet the Proposed Action's purpose and need (**Section 1.3**). Therefore, the Partial Entombment Alternative was dismissed from further evaluation in this EA.

2.4.3 Alternatives Retained for Detailed Analysis

2.4.3.1 No Action Alternative

Under the No Action Alternative, USACE would continue to maintain SM-1A in a SAFSTOR condition under its current Reactor Possession Permit (SM1A-1-19, Amendment 1-20). The ARP's mission to decommission SM-1A would be delayed or defunct should decommissioning not take place within 60 years (by 2032) of its deactivation. USACE would require a permit modification under this alternative to allow for the continued possession of radioactive materials at SM-1A—including the RPV and steam generator—beyond 60 years of the reactor's deactivation. However, the No Action Alternative would fail to meet the purpose and need for the following reasons:

- Radiological contamination potentially posing a risk to public health would remain on the site indefinitely.
- The decommissioning of SM-1A would not be completed within 60 years of the reactor's deactivation.
- The presence of buildings, structures, and equipment associated with SM-1A would not support the military mission or land use planning objectives at Fort Greely and the remediation of radiological contamination would continue to be required.

While the No Action Alternative would not meet the Proposed Action's purpose and need, it is analyzed in this EA in accordance with 40 CFR 1502.14 to provide a comparative baseline for the analysis of potential effects from the Proposed Action Alternative.

2.4.3.2 Proposed Action Alternative (DECON)

The Proposed Action Alternative (a DECON alternative as described above) would implement the Proposed Action as described in **Section 2.2**. Adherence to the DP under the Proposed Action Alternative would reduce safety and health risks to the maximum extent practicable by carefully planning and executing decommissioning tasks to prevent or minimize hazardous work conditions. Implementation of the Proposed Action Alternative by approximately 2028 would result in permit termination within 60 years (i.e., by 2032) of SM-1A's final shutdown. Adequate space would be available on the SM-1A site to conduct the Proposed Action Alternative safely and efficiently; work sequencing would further minimize the space required to decommission SM-1A. The Proposed Action Alternative would release the site for unrestricted use in support of the military mission and land use planning objectives at Fort Greely. It would also remove residual radiological contamination on the site. As described in this EA, the Proposed Action Alternative would avoid or minimize any potential adverse environmental impacts from decommissioning SM-1A to the maximum extent practicable.

The Proposed Action Alternative would fulfill the Proposed Action's purpose and need by completing the decommissioning of SM-1A within 60 years (i.e., by 2032) of its final shutdown, releasing the SM-1A site for unrestricted use, and terminating the Army-issued decommissioning permit. Therefore, this alternative is carried forward for analysis in this EA.

3.0 Affected Environment and Environmental Consequences

3.1 Introduction

This section describes the affected environment (i.e., the existing condition) of environmental resources at SM-1A and the environmental consequences (i.e., beneficial or adverse impacts) that would potentially result from the No Action Alternative and the Proposed Action Alternative. The geographic extent of potential effects would vary; therefore, the affected environment (or ROI) is defined individually for each resource (the terms “impact” and “effect” are used synonymously throughout this EA). Information on resources analyzed in this EA was obtained through the review of previously prepared studies, reports, and other documentation obtained from USACE, Fort Greely, and other credible sources (such as regulatory agencies and the scientific and engineering communities).

Discussions of the affected environment and potential environmental consequences for each evaluated resource are presented in **Section 3** as follows:

- **Section 3.2**, Cultural Resources
- **Section 3.3**, Water Resources
- **Section 3.4**, Socioeconomics and Environmental Justice
- **Section 3.5**, Biological Resources
- **Section 3.6**, Air Quality
- **Section 3.7**, Transportation and Traffic
- **Section 3.8**, Utilities
- **Section 3.9**, Soils
- **Section 3.10**, Waste
- **Section 3.11**, Safety and Health

Thresholds for determining the significance of a potential impact on a particular resource are defined in the corresponding “Environmental Consequences” discussion in each section listed above. Generally, adverse impacts that are determined to be less than significant do not meet the conditions requiring preparation of an EIS as defined in 32 CFR 651.41. Actions not having a significant impact on the environment do not normally require the preparation of an EIS, as defined in 32 CFR 651.42.

BMPs to prevent or minimize the severity of potential adverse impacts are presented for each resource as applicable. For all resources evaluated in this EA, a beneficial effect would occur if an alternative would result in the improvement of a resource’s condition in the ROI.

The Proposed Action’s potential cumulative impacts are described in **Section 4**.

A summary of the resources that were dismissed from detailed analysis in accordance with 40 CFR 1500 because the Proposed Action would have no potential to meaningfully or measurably affect them is provided in **Table 3.1-1**.

Table 3.1-1: Resources Dismissed from Analysis

Resource	Rationale for Elimination
Airspace	Airspace resources are not expected to be affected sufficiently to warrant further discussion and were eliminated from further analysis. The number of flights per day at the Fort Greely airfield is not anticipated to change during or as a result of the Proposed Action.
Land Use	As a federal military installation, Fort Greely is not subject to state and local land use and zoning ordinances, policies, plans, and guidelines. The Proposed Action would have no potential to affect off-post land uses and zoning. Removing SM-1A and returning the land to Fort Greely for unrestricted use under the Proposed Action would be consistent with and support on-post land uses. The Proposed Action would have no potential to affect the segment of the Trans-Alaska Oil Pipeline that bisects Fort Greely or the associated Pumping Station #9 2.5 miles southwest of the installation's Cantonment Area.
Noise	The volume, intensity, and duration of noise generated by decommissioning-related vehicles, equipment, and tools would vary throughout the Proposed Action and would be similar to other construction and operational noise generated on and around Fort Greely. While such noise could be an annoyance to nearby listeners, it would be unlikely to delay or prevent the continued operation of nearby facilities and functions. There would be no impacts on noise-sensitive land uses (e.g., hospitals, schools, religious facilities) because none occur near SM-1A. Following completion of the Proposed Action, the ambient noise conditions at Fort Greely would be similar to those that existed prior to decommissioning activities.
Recreation	The SM-1A site does not contain or provide recreational facilities for Fort Greely personnel or the general public and is in an intensively developed, industrialized area of Fort Greely with similar, nonrecreational land uses. The Proposed Action would not involve the temporary or permanent disturbance or alteration of existing recreational facilities on Fort Greely and would not result in temporary or permanent disruptions of current or planned recreational activities on the installation. Therefore, recreation resources were dismissed from further analysis in this EA.
Seismology	The Proposed Action would be implemented in accordance with applicable seismic engineering considerations and requirements. The Proposed Action would have no potential to influence existing seismic conditions, nor would it increase or induce seismic activity at or near the SM-1A site. Therefore, seismology was dismissed from further analysis in this EA.
Geology and Topography	The SM-1A site is previously disturbed and consists of graded, generally level areas that support buildings, structures, and vehicle parking areas associated with SM-1A. No unique or noteworthy topographical or geological features have been documented on or under the SM-1A site, respectively, and the Proposed Action would have no potential to have temporary or permanent adverse effects on such features. Following completion of the Proposed Action, topography on the SM-1A site would be similar to existing conditions. Therefore, geology and topography were dismissed from further analysis in this EA.
Wetlands and Floodplains	There are no wetlands on the SM-1A site or in Fort Greely's cantonment area. SM-1A is not in a 100-year floodplain. None of the activities associated with the Proposed Action would be conducted in or have the potential to disturb or alter wetlands or 100-year floodplains. Therefore, these resources were dismissed from analysis in this EA.

Table 3.1-1: Resources Dismissed from Analysis

Resource	Rationale for Elimination
Rare, Threatened, and Endangered Species	<p>No federally or state-listed threatened and endangered species have been documented at Fort Greely and no federal critical habitat has been designated on the installation. The SM-1A site and on-post roads that would be used as transportation routes during the Proposed Action are in Fort Greely’s urbanized and intensively developed cantonment area, which does not provide suitable habitat for federal and state-listed species or rare plant species tracked by the Alaska Natural Heritage Program. With the exception of small areas of grass (maintained lawn) and ornamental trees and shrubs on the SM-1A site that do not provide suitable habitat for federal or state-listed species, the Proposed Action would not involve the removal of vegetation that could potentially provide habitat for federally or state-listed rare, threatened, and endangered species.</p> <p>In the event that active bird nests are observed on buildings and structures associated with SM-1A, including nests of species protected under the MBTA, those nests would be removed in accordance with applicable policies set forth in Fort Greely’s INRMP (USAG Alaska 2020b) and prescribed by the USFWS, ADF&G, and/or other applicable federal and state regulatory agencies.</p> <p>No bald eagles (<i>Haliaeetus leucocephalus</i>) or golden eagles (<i>Aquila chrysaetos</i>) have been documented at Fort Greely.</p> <p>For these reasons, the Proposed Action would have no potential to adversely affect federally or state-listed species, critical habitat, or species protected under the MBTA or the Bald and Golden Eagle Protection Act. Therefore, rare, threatened, and endangered species were dismissed from further analysis in this EA.</p>
Visual Resources	<p>Although the VC is visually prominent at Fort Greely, it has not been documented as a particularly unique or noteworthy visual resource on the installation or in the surrounding area. Its removal under the Proposed Action would not be considered an adverse effect on the visual environment at Fort Greely. The Proposed Action would have no potential to temporarily or permanently affect any other unique or noteworthy visual resources or the visual environment at Fort Greely or in the surrounding area. Therefore, visual resources were dismissed from further analysis in this EA. Potential effects on cultural resources, which includes architectural resources, are described in Section 3.2.</p>

Notes:

ADF&G = Alaska Department of Fish and Game
 EA = Environmental Assessment
 INRMP = Integrated Natural Resources Management Plan

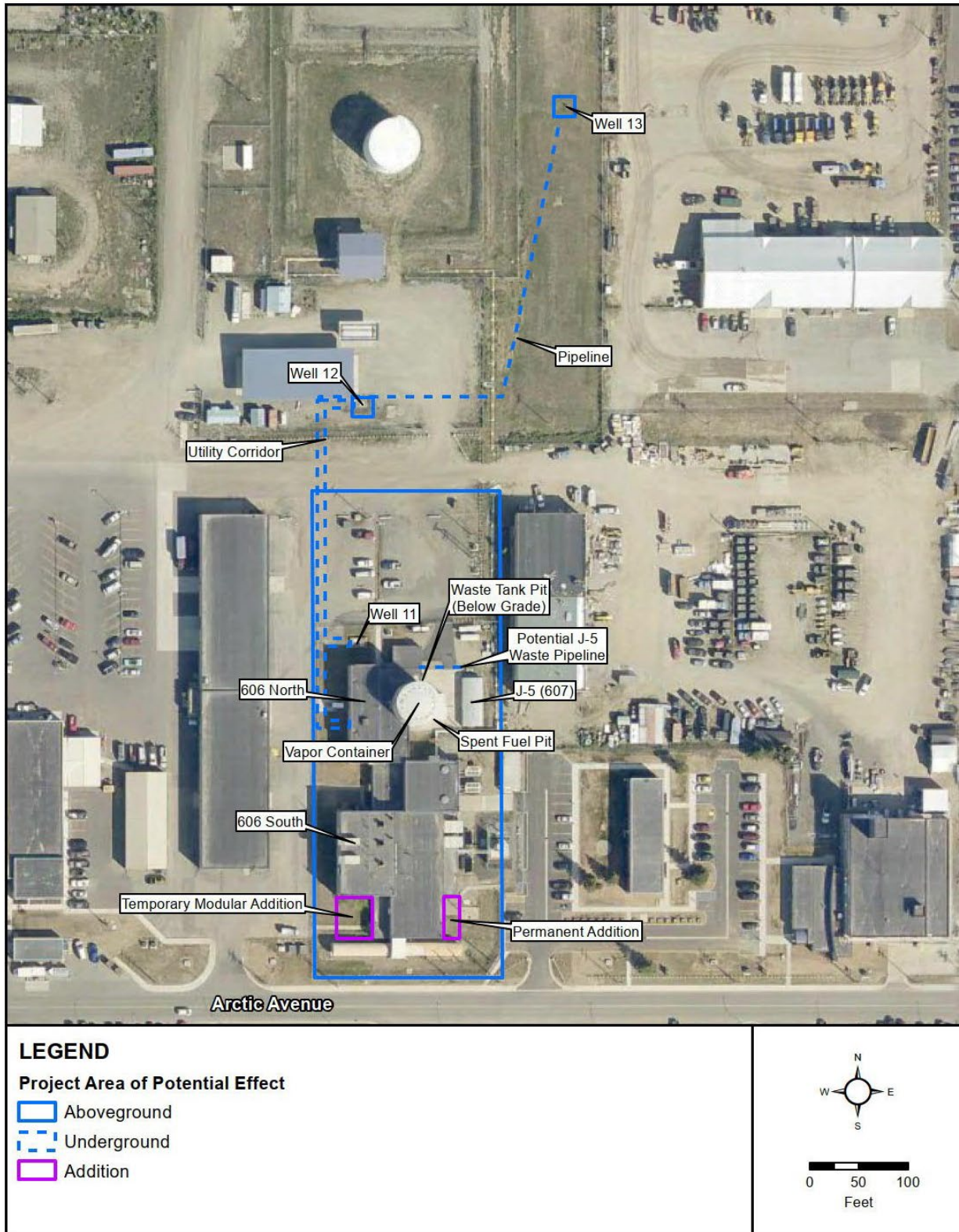
MBTA = Migratory Bird Treaty Act
 USFWS = U.S. Fish and Wildlife Service
 VC = Vapor Container

3.2 Cultural Resources

This section addresses cultural resources that would be potentially affected by the Proposed Action. Cultural resources include pre-contact and historic sites, buildings, structures, districts, objects, artifacts, or other physical evidence of human activity considered important to a culture or community for scientific, traditional, religious, or other reasons. USACE is the lead federal agency for purposes of NHPA Section 106 consultation regarding the Proposed Action evaluated in this EA (**Table 3.2-1**).

The Proposed Action’s Area of Potential Effect (APE) is defined as the SM-1A Reactor Facility, consisting of the fenced site that includes Building 606 North, Building 606 South, Building J-5, Supply Well No. 11, and a portion of the former wastewater pipeline; Supply Well No. 12, Recharge Well No. 13, and associated pipeline outside the fence; and an 8-foot-wide by 6-foot-deep excavation area encompassing the concrete utility corridor that runs from Building 606 North to Supply Well No. 11 and Supply Well No. 12 (**Figure 3.2-1**).

Figure 3.2-1: Proposed Action Area of Potential Effects in Fort Greely Historic District (AHRs XMH-1275)



3.2.1 Regulatory Setting

A summary of regulations and guidance applicable to the Proposed Action and cultural resources in the ROI is provided in **Table 3.2-1**.

Table 3.2-1: Regulations and Guidance Applicable to Cultural Resources

Regulation/Guidance ¹	Description
NHPA Section 106 (54 USC 300101 et seq.) and its implementing regulations (36 CFR 800)	Requires federal agencies are required to consider the effects of their actions on historic properties.
36 CFR 60, <i>National Register of Historic Places</i>	Establishes criteria for evaluating cultural resources for inclusion in the NRHP.
EO 11593, <i>Protection and Enhancement of the Cultural Environment</i>	Requires federal agencies to initiate measures to ensure that federal plans, policies, and programs contribute to the preservation and enhancement of cultural resources.
USAG Alaska 2020-2025 ICRMP (USAG 2020a)	The ICRMP provides the information necessary to make decisions regarding the treatment of cultural resources on USAG Alaska-managed lands, including Fort Greely. The ICRMP includes management procedures for NHPA Section 106 consultation as well as for unanticipated discoveries.

Notes:

¹ This table includes the primary regulations and guidance that apply to this resource area; it is not meant to be comprehensive. Other regulatory requirements may also apply.

CFR = Code of Federal Regulations

EO = Executive Order

ICRMP = Integrated Cultural Resources Management Plan

NHPA = National Historic Preservation Act

NRHP = National Register of Historic Places

USAG = U.S. Army Garrison

USC = United States Code

3.2.2 Affected Environment

U.S. Army Garrison (USAG) Alaska manages historic properties on its lands—including Fort Greely—in accordance with the 2020-2025 Integrated Cultural Resources Management Plan (ICRMP). The ICRMP sets forth procedures for NHPA Section 106 consultation as well as for unanticipated discoveries (USAG Alaska 2020a).

The APE is in the Fort Greely New Post Historic District (Alaska Heritage Resources Survey [AHRS] XMH-1275) and the Fort Greely Cold War Historic District (AHRS XMH-845) (AHRS 2020a; USAG Alaska 2020a). Although two Alaska Heritage Resources Survey (AHRS) historic district site numbers exist, XMH-1275 and XMH-845 refer to the same historic district and geographic boundary. The district was determined eligible for the National Register of Historic Places (NRHP) in 2000 under Criterion A with a period of significance of 1946 to 1989 associated with the Cold War era at Fort Greely. The district contains 23 contributing buildings and three noncontributing buildings in the New (South) Post; three additional buildings have been demolished (USAG Alaska 2020a; AHRS 2020).

Building 606 (AHRS XMH-670) is eligible for the NRHP as a contributing resource to the Fort Greely New Post/Cold War Historic District and is the primary resource in the SM-1A Reactor Facility. Originally constructed in 1955, Building 606 functioned as an electric power and steam heat production plant and water treatment facility to provide electricity and steam heat to Fort Greely. The building was modified from 1958 to 1962 with new

construction at the north end to support SM-1A, one of a series of prototype nuclear reactors commissioned by USACE through the Army Nuclear Power Program (HABS 1999). USACE chose Fort Greely for the SM-1A Reactor Facility to test and demonstrate the feasibility of a nuclear power plant in a remote arctic environment. Fort Greely's remote arctic setting, high fuel costs in the area, base expansion, and need for additional electrical power and heating steam were key factors in USACE's site selection.

Building J-5/607 (AHRM XMH-671)—although previously determined noncontributing to the Fort Greely New Post/Cold War Historic District—contributes to the SM-1A Reactor Facility property as a secondary resource. Built in 1966, the rectangular Quonset hut metal building was used as a general storehouse during the Cold War era and for nuclear waste storage. Supply Well No. 11 is a contributing landscape element in the property boundary. Outside the fence, Supply Well No. 12 and Recharge Well No. 13 are part of the SM-1A Reactor Facility's former operations; however, these utility-related elements, along with the underground wastewater dilution pipeline and utility corridor, are not necessary to convey the significance of the property.

The Army has determined that the SM-1A Reactor Facility is individually eligible for listing in the NRHP. The SM-1A Reactor Facility is nationally significant under NRHP Criterion A for its association with Engineering and Science and conveys USACE's prototype nuclear reactor program during the Cold War era. In consultation with USAG Alaska and Alaska SHPO, the Army has prepared a NRHP determination of eligibility for the SM-1A Reactor Facility, which includes Building 606 North, Building 606 South, Building J-5/607, Supply Well No. 11, and a portion of the former wastewater pipeline, as well as Supply Well No. 12 and Recharge Well No. 13 outside the fence. A NRHP evaluation for the SM-1A Reactor Facility was submitted to the Alaska SHPO for review and concurrence on December 18, 2020. In a letter dated January 22, 2021 the Alaska SHPO concurred with the Army's determination that SM-1A is eligible for listing in the NRHP. A copy of this letter is provided in **Appendix A**.

Archaeological survey work around Fort Greely began in the 1970s. Work covering the entire Fort Greely cantonment area began in earnest in 2002, covering 7,500 acres of land (USAG Alaska 2020a). No archaeological resources have been identified in the APE or the vicinity of the Fort Greely New Post. Due to ground disturbance caused during the development of Fort Greely's New Post and the construction of the SM-1A Reactor Facility, it is unlikely that archaeological resources are present in the APE.

3.2.3 National Historic Preservation Act Section 106 Consultation

NHPA Section 106 consultation for the Proposed Action is being conducted in parallel with the NEPA process and preparation of this EA. Consultation for the undertaking was initiated with the Alaska SHPO by letter dated June 19, 2020. The Alaska SHPO's concurrence on the APE was received on July 16, 2020. Letters dated June 23, 2020 were sent to the following tribal governments, entities, and agencies with an invitation to participate in the NHPA Section 106 consultation for the Proposed Action:

- Native Village of Cantwell
- Chickaloon Native Village
- Village of Dot Lake

- Native Village of Eklutna
- Gulkana Village
- Healy Lake Village
- Knik Tribe
- Nenana Native Association
- Northway Village
- Native Village of Tanacross
- Native Village of Tetlin
- Cook Inlet Region, Inc.
- Ahtna, Inc.
- Chickaloon Moose Creek Native Association, Inc.
- Doyon, Limited
- Eklutna, Inc.
- Tanana Chiefs Conference
- Toghoththele Corporation
- Bureau of Indian Affairs—Anchorage Agency
- Bureau of Indian Affairs—Fairbanks Agency

By letter dated December 18, 2020, the following organizations were invited to participate as consulting parties during the NHPA Section 106 process for the Proposed Action:

- Alaska Historical Commission
- Alaska Historical Society
- American Nuclear Society
- Delta Junction
- Nuke Digest
- University of Alaska Museum of the North
- University of Alaska-Fairbanks Rasmuson Library

A representative copy of these invitation letters is provided in **Appendix A**. To date, Delta Junction and Nuke Digest have agreed to participate as consulting parties in the NHPA Section 106 process.

Detailed information about the Proposed Action was submitted to the ACHP on the same date via email. In a letter dated January 4, 2021, the ACHP declined to participate in the NHPA Section 106 consultation process unless requested to do so by a consulting party.

3.2.4 Environmental Consequences

This section describes the potential impacts on cultural resources in the ROI from the No Action Alternative and Proposed Action Alternative. Impact significance thresholds used for this analysis are provided in **Table 3.2-2**.

Table 3.2-2: Cultural Resources Impact Significance Thresholds

Impact Significance Threshold	Impact Significance Threshold Definition
Less-than-significant adverse impact	The alternative would result in an adverse effect on a historic property by altering any of the characteristics that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association; however, such impacts would be avoided, minimized and/or mitigated per NHPA Section 106.
Potentially significant adverse impact	The alternative would result in an adverse effect on a historic property by altering any of the characteristics that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association; and those effects would not be avoided, minimized, and/or mitigated per NHPA Section 106.

Notes:

NHPA = National Historic Preservation Act

NRHP = National Register of Historic Places

3.2.4.1 No Action Alternative

Under the No Action Alternative, the proposed decommissioning would not be implemented and USACE would continue to maintain SM-1A as it currently does. There would be no removal of the SM-1A Reactor Facility, associated ground-disturbing activities, or alterations to NRHP-eligible historic properties. Therefore, the No Action Alternative would have no effect on cultural resources.

3.2.4.2 Proposed Action Alternative

The Proposed Action Alternative would demolish key elements of the NRHP-eligible SM-1A Reactor Facility and remove contributing resources from the NRHP-eligible Fort Greely Historic District. This would result in an *adverse effect* on historic properties under NHPA Section 106. USACE is consulting with the Alaska SHPO and other participating consulting parties to develop a memorandum of agreement (MOA) that will identify stipulations to resolve adverse effects on historic properties. Once executed, the MOA would resolve the adverse effect consistent with 36 CFR 800.6(c).

Ground-disturbing activities would occur in previously disturbed areas where archaeological sites have not been identified and that are unlikely to contain cultural resources. In accordance with 36 CFR 800.13(b), the USAG ICRMP unanticipated discovery plan would be followed in the event that a previously unidentified archaeological site (which could include human remains, funerary or sacred objects, or other items of cultural patrimony) is discovered during the Proposed Action Alternative (USAG Alaska 2020a).

Therefore, through consultation with the SHPO and other participating consulting parties, execution of an MOA in accordance with NHPA Section 106, and implementation of BMPs, adverse effects on cultural resources from the Proposed Action Alternative would be less than significant.

3.2.5 Cultural Resources BMPs

The following BMPs would be implemented to prevent or minimize the Proposed Action Alternative's adverse effects on cultural resources in the ROI:

- In consultation with the SHPO and participating consulting parties, USACE will execute a MOA with stipulations to resolve the adverse effect on historic properties in accordance with 36 CFR 800.6(c).
- In accordance with 36 CFR 800.13(b), the unanticipated discovery plan set forth in the 2020-2025 USAG Alaska ICRMP would be followed in the event that a previously unidentified archaeological site (which could include human remains, funerary or sacred objects, or other items of cultural patrimony) is discovered during the Proposed Action Alternative.

Execution of an MOA between USACE, the Alaska SHPO, and participating consulting parties will establish responsibilities for USACE to complete prior to implementing the Proposed Action Alternative. In accordance with NHPA Section 106, stipulations in the MOA consist of the following:

- A. Historic American Engineering Record (HAER) Level II Documentation:* HAER documentation is appropriate to resolve adverse effects on significant historic properties, such as the SM-1A Reactor Facility. USACE shall prepare, or direct to be prepared, documentation to HAER Level II standards as defined in the *Secretary of the Interior Standards and Guidelines for Architectural and Engineering Documentation*.
The HAER Level II documentation shall include the SM-1A Reactor Facility, including Buildings 606 and 607 and associated infrastructure. The documentation will include information obtained from USACE's Office of History and Fort Greely, including motion picture film, photographs, and documents, as appropriate.
- B.* Upon completion, USACE will submit the draft documentation to the National Park Service, Signatories and other consulting parties for their thirty (30) day review. USACE shall incorporate and/or respond to all submitted comments before finalizing the documentation
- C.* USACE shall provide copies of the final HAER documentation to SHPO, National Park Service, Fort Greely, and the USACE Office of History. USACE will identify other appropriate repositories for the documentation in consultation with the Signatories and other consulting parties. USACE shall ensure the resulting documentation is suitable for dissemination to the public with the goal of creating awareness for the historical significance of the SM-1A Reactor Facility. USACE shall provide copies of the documentation to the other consulting parties upon written request.
- D.* Within two (2) years of USACE's award of the decommissioning and dismantlement contract, USACE shall distribute a draft digital version of a proposed historical plaque/marker to the Signatories and other consulting parties. This historical plaque/marker's design shall be agreed upon by the Signatories with input from the other consulting parties prior to installation. Within one (1) year of completion of the decommissioning and dismantlement, USACE/Fort

Greely shall erect the agreed upon plaque/marker at the previous site of SM-1A. Additional plaques/markers shall be installed at publicly accessible sites. These additional plaques/markers shall have their designs and locations agreed upon by the Signatories and consulting parties prior to installation. Upon final installation of these historical plaque/markers, USACE/Fort Greely shall photograph the installed plaque/markers and distribute to all the Signatories and consulting parties.

- E. During decommissioning and dismantlement, when safe and feasible, USACE shall salvage historical items from the SM-1A Reactor Facility, including but not limited to informational safety plaques and currently unknown time capsule contents. Within two (2) years of USACE's award of the decommissioning and dismantlement contract, USACE will develop a detailed plan for the identification, curation, storage, and transportation of these historical items, along with specific steps for consultation. USACE shall submit this plan for review and comment by the Signatories and other consulting parties.

Salvaged items will remain under the control of the Army; items shall be salvaged from SM-1A and sent to an as-yet unidentified facility for storage. USACE will distribute a letter to the Signatories and other consulting parties with an item inventory and location, as well as a point of contact to help retrieve items for future exhibits. USACE shall inform the Signatories and other consulting parties of circumstances that will prevent salvage and display of these items.

- F. Following decommissioning and dismantlement, USACE shall submit updated AHRs site forms to SHPO for Building 606 and Building 607 that indicate the changes to the historic buildings and their eligibility status.
- G. Since the HAER Level II documentation will document the decommissioning and dismantlement process, USACE shall complete the requirements of Stipulations I.A through I.C within one (1) year of completion of the decommissioning and dismantlement of the SM-1A Reactor Facility (currently estimated for completion by 2028).

A copy of the MOA containing the stipulations agreed to by USACE, Alaska SHPO, and the consulting parties is provided in **Appendix A**.

3.3 Water Resources

This section describes water resources that would be potentially impacted by the Proposed Action. Water resources include surface water, water quality, groundwater, and stormwater. The ROI for the analysis of water resources includes surface waterbodies and groundwater formations in and outside the boundaries of Fort Greely that potentially receive drainage or infiltration, respectively, from the SM-1A site.

The Proposed Action would have no potential to affect wetlands and floodplains. Therefore, these resources are not discussed further in this EA (**Table 3.1-1**).

3.3.1 Regulatory Setting

A summary of regulations and guidance that are applicable to the Proposed Action and water resources in the ROI is provided in **Table 3.3-1**.

Table 3.3-1: Regulations and Guidance Applicable to Water Resources

Regulation/Guidance ¹	Description
Federal	
CWA (33 USC 1251 et seq.)	The CWA establishes requirements for regulating discharges of pollutants into waters of the U.S. and regulating quality standards for surface waters. CWA Section 303 requires states to identify waters in which current pollution control technologies alone cannot meet water quality standards. The NPDES program, administered by USEPA, regulates discharges of pollutants to navigable waters.
NWSR Act (Public Law 90-542; 16 USC 1271 et seq.)	The NWSR Act was enacted in 1968 to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. Designated segments need not include the entire river and may include tributaries. For federally administered rivers, the designated boundaries generally average 0.5 mile on rivers outside national parks in Alaska to protect river-related values (NWSRS 2020). The NWSR Act defines a “wild” river as free of impoundments, generally inaccessible except by trail, and has exceptionally clean waters. “Scenic” segments are free of impoundments and have shorelines that are largely undeveloped but are accessible by road. “Recreational” segments are accessible by road and may have some development along their shorelines (BLM 2020).
SDWA (42 USC 6901 et seq.)	The SDWA was enacted in 1974 to protect public health by regulating the nation’s public drinking water supply. The SDWA authorizes USEPA to set national health-based standards for drinking water to protect against both naturally occurring and human-made contaminants that may be found in drinking water.
State of Alaska	
ADEC 18 AAC 70, <i>Water Quality Standards</i>	Regulates and establishes water quality standards and criteria throughout the state of Alaska.
DOD / U.S. Army / Fort Greely	
AR 200-1, <i>Environmental Protection and Enhancement</i>	Implements federal, state, and local environmental laws and DOD policies for preserving, protecting, conserving, and restoring the quality of the environment.
Fort Greely INRMP, 2017-2021	Establishes policies, programs, requirements, projects, and procedures for the management of natural resources at Fort Greely.

Notes:

¹ This table includes the primary regulations and guidance that apply to this resource area; it is not meant to be comprehensive. Other regulatory requirements may also apply.

AAC = Alaska Administrative Code

ADEC = Alaska Department of Environmental Conservation

AR = Army Regulation

CWA = Clean Water Act

DOD = Department of Defense

INRMP = Integrated Natural Resource Management Plan

NPDES = National Pollutant Discharge Elimination System

NWSR = National Wild and Scenic Rivers

SDWA = Safe Drinking Water Act

U.S. = United States

USC = United States Code

USEPA = United States Environmental Protection Agency

3.3.2 Affected Environment

3.3.2.1 Surface Water

Surface water resources include lakes, rivers, and streams. In the ROI, the Delta River and Jarvis Creek flow in a generally northern direction across Fort Greely approximately 2 miles west and 1 mile east of SM-1A, respectively (**Figure 1.2-1**). Jarvis Creek is approximately 43 miles long, originating from the Jarvis Glacier south of Fort Greely and converging with the Delta River along the installation’s northern boundary approximately

3.6 miles north of SM-1A. The Delta River flows from its headwaters in the Tangle Lakes of the Alaska Range, approximately 40 miles (in a direct line) south of Fort Greely, to its convergence with the Tanana River at Big Delta approximately 10 miles downstream (north) of the installation. The Delta River watershed covers 150,000 acres (234 square miles) and includes 160 miles of streams and 21 lakes. The Tanana River is a major tributary of the Yukon River and drains an area covering approximately 20,500 square miles (Liljedahl et al. 2017).

Upstream reaches of the Delta River, totaling 62 miles, are designated as a Wild, Scenic, and Recreational River under the National Wild and Scenic River (NWSR) Act (16 USC 1271 et seq.). These reaches are outside the boundaries of Fort Greely (BLM 2020). Public access to the Delta River and Jarvis Creek is not provided in the boundaries of Fort Greely.

Neither the Delta River nor Jarvis Creek are used as a source of drinking water at Fort Greely. There are no other naturally occurring surface waterbodies in the Fort Greely cantonment area.

3.3.2.2 Water Quality

There are over 714,000 miles of rivers and streams in Alaska. The State of Alaska establishes and enforces water quality standards to support the use of surface waterbodies for recreation (e.g., swimming), consumption of fish, propagation of aquatic life and habitat, drinking water supply, and aquaculture (USEPA 2020f). In accordance with Section 303(d) of the CWA, surface waterbodies in Alaska that do not meet one or more water quality standards are considered “impaired.”

As of 2018, less than 0.005 percent of Alaska’s river and stream miles were considered impaired for one or more of the uses described above (USEPA 2020). Neither the Delta River nor Jarvis Creek are designated as impaired by the State of Alaska. The closest impaired waters to Fort Greely are reaches of Moose Creek, Noyes Slough, and Goldstream Creek; all are tributaries of the Tanana River that are more than 60 miles downstream of Fort Greely (ADEC 2020d).

3.3.2.3 Groundwater

Groundwater underlying Fort Greely occurs approximately 175 to 200 feet below ground surface (bgs). The groundwater table underlies layers of permafrost that vary from 12 to 150 feet bgs. Runoff from the Alaska Range supplies most of the recharge to the aquifer underlying Fort Greely. Groundwater recharge in the area has been estimated at 1 inch per year (USACE 2020a).

Fort Greely has five active water supply wells; the suction depths of these wells vary from 155 to 350 feet bgs. Near SM-1A, the groundwater table is approximately 200 feet bgs and water supply is drawn from approximately 300 to 330 feet bgs (U.S. Army 1971). There are no sole source aquifers in Alaska (USEPA 2020e).

Three deactivated wells at Fort Greely are associated with the former operation of SM-1A (**Figure 1.2-2**). Supply Well No. 11 (**Photo 6**) and Supply Well No. 12 provided cooling water for the reactor when it was operational. Treated primary coolant water from SM-1A that met radiological release criteria was discharged to Recharge Well No. 13 (also

referred to as the “dry well”). Supply Well No. 11 is immediately north of Building 606 North inside the SM-1A perimeter fence. Supply Well No. 12 and Recharge Well No. 13 are outside the SM-1A perimeter fence approximately 300 feet north and 630 feet northeast of Building 606 North, respectively.

3.3.2.4 Stormwater

Stormwater generated on Fort Greely (including snowmelt) is conveyed through a network of inlets, pipes, swales, and human-made and naturally occurring ditches; it is discharged to the Delta River and Jarvis Creek. Fort Greely discharges stormwater in accordance with a Multi-Sector General Permit (MSGP) issued by ADEC under the authority granted by the National Pollutant Discharge Elimination System (NPDES) program administered by USEPA. Requirements of coverage under the MSGP include:

- Eliminating the discharge of process wastewater, domestic wastewater, and noncontact cooling water to stormwater drainage systems
- Implementing BMPs that identify the source or sources of water pollution and eliminate or reduce stormwater pollutants
- Preventing violations of surface water quality, groundwater quality, and sediment management standards

In accordance with the MSGP permit requirements, Fort Greely adheres to an installation-wide Stormwater Pollution Prevention Plan (SWPPP) that identifies existing and potential stormwater pollutants, areas of the installation where such pollutants are known or have the potential to originate, and measures to prevent or minimize the introduction of pollutants to stormwater runoff. The SWPPP is amended whenever a change in the design, construction, operation, or maintenance of facilities and infrastructure occurs on the installation (Fort Greely 2018).

To manage the quality and quantity of stormwater discharged from construction sites in Alaska, construction activities disturbing 1 or more acres are required to obtain coverage under the 2016 Construction General Permit (CGP) for Storm Water Discharges for Large and Small Construction Activities (Permit No. AKR100000). Coverage under the permit requires implementation of applicable erosion and sediment control measures to minimize erosion of exposed soils and concentrations of sediments and pollutants in stormwater discharged from the site (ADEC 2020c). Contractors are required to prepare and implement a site-specific SWPPP as a condition of obtaining and maintaining coverage under the CGP.

3.3.3 Environmental Consequences

This section describes potential impacts on water resources in the ROI from the No Action Alternative and Proposed Action Alternative. Impact significance thresholds used for this analysis are provided in **Table 3.3-2**.

Table 3.3-2: Water Resources Impact Significance Thresholds

Impact Significance Threshold	Impact Significance Threshold Definition
Less-than-significant adverse impact	The alternative would potentially have temporary adverse impacts on water resources, such as degradation of water quality, changes in flow patterns, or availability of water resources. Such impacts could be prevented, minimized, or compensated for through adherence to applicable BMPs, permitting requirements, or other minimization measures.
Potentially significant adverse impact	The alternative would have permanent impacts on water resources that could not be prevented, minimized, or compensated for through adherence to applicable BMPs, permitting requirements, or other minimization measures.

Notes:

BMP = best management practice(s)

3.3.3.1 No Action Alternative

Under the No Action Alternative, SM-1A would continue to be maintained in a SAFSTOR condition. This would have no effect on water resources in the ROI.

3.3.3.2 Proposed Action Alternative

The Proposed Action Alternative would not involve channeling, diverting, altering, filling, or withdrawing water from surface waterbodies in the ROI; would have no potential to permanently affect water quality in receiving waterbodies; and would not contribute to the further degradation of water quality in downstream waterbodies designated as “impaired” by the State of Alaska. Activities and components of the Proposed Action Alternative would have no potential to be visible from or otherwise affect reaches of the Delta River upstream of Fort Greely that are designated as a NWSR, nor would they temporarily or permanently preclude access to any portion of the Delta River for recreation or other uses. Therefore, the Proposed Action Alternative would have no short-term or long-term impacts on surface waterbodies in the ROI.

Land-disturbing activities during the Proposed Action Alternative (e.g., soil excavation and backfill) would have the potential to disturb approximately 1.5 acres in SM-1A’s fenced perimeter. The quality and quantity of stormwater discharged from the SM-1A site during the Proposed Action Alternative would be managed through adherence to a site- and project-specific SWPPP that would be prepared as a condition of coverage under the CGP. Stormwater volumes that would be generated on and discharged from the SM-1A site during the Proposed Action Alternative would not be particularly large or unmanageable relative to other construction and demolition projects of similar scale and scope. Therefore, short-term adverse effects on stormwater would be less than significant.

Contact water from decommissioning activities (e.g., wet saw cutting, power washing, decontamination) would be captured, containerized, characterized, and disposed of off-site in accordance with a site-specific liquid effluent monitoring plan that would be prepared as part of a project-specific Environmental Monitoring and Control Program. Adherence to these measures (and those specified in the SWPPP and Spill Prevention, Control, and Countermeasure (SPCC) Plan during the Proposed Action Alternative) would minimize pollutant and sediment concentrations in runoff discharged from the

SM-1A site to the extent practicable. This would minimize corresponding impacts on water quality in receiving waterbodies (i.e., the Delta River and Jarvis Creek). In the context of the watersheds associated with Jarvis Creek and the Delta River, any runoff from the SM-1A site would be small and contribute negligibly to the degradation of water quality in those waterbodies. Surface waterbodies in the ROI would return to conditions resembling those that existed prior to the Proposed Action Alternative following the completion of the proposed decommissioning and dismantlement activities. Therefore, short-term adverse impacts on water quality from the Proposed Action Alternative would remain less than significant; there would be no long-term impacts on water quality.

Ground-disturbing activities associated with the Proposed Action Alternative, including subsurface foundation removal and excavation of soils, would not extend to depths that would interfere with groundwater flow or quality. Common dewatering methods would be used as necessary to remove water that accumulates in excavations or trenches (likely from snowmelt or permafrost seepage) on the SM-1A site. The Proposed Action Alternative would not involve the installation of new groundwater withdrawal wells or the injection of wastewater to groundwater wells. Inactive wells associated with the former operation of SM-1A (Supply Well No. 11, Supply Well No. 12, and Recharge Well No. 13) would be decommissioned in accordance with applicable ADEC regulations and requirements set forth in 18 Alaska Administrative Code (AAC) 80.015(e) after associated pumps, pipes, and concrete structures are removed, characterized, and disposed of according to state and federal regulations. Therefore, there would be no adverse short-term impacts on groundwater.

Decommissioning of the inactive wells would have no effect on Fort Greely operations and would represent a beneficial long-term effect on groundwater management at Fort Greely. Restoration of the site following the removal of facilities and infrastructure associated with SM-1A would be expected to result in an improvement over existing stormwater management measures on the site, thereby resulting in a long-term beneficial effect.

3.3.4 Water Resources BMPs

The decommissioning contractor would implement the following BMPs during the Proposed Action Alternative to prevent or minimize adverse impacts on water resources in the ROI:

- As a condition of obtaining coverage under the CGP, prepare and adhere to a site-specific SWPPP to manage the quality and quantity of stormwater discharged from the SM-1A site.
- Capture, containerize, and characterize contact water and dispose of accordingly at permitted off-post facilities in accordance with a site-specific liquid effluent monitoring plan that would be prepared as part of the project-specific Environmental Monitoring and Control Program.
- Prepare and adhere to a project- and site-specific SPCC Plan.
- In accordance with the SPCC Plan, provide spill containment and cleanup kits in conspicuous and accessible locations throughout the site for use in the event of an unintended release of contaminants or regulated materials.

3.4 Socioeconomics and Environmental Justice

This section describes existing socioeconomic conditions in the ROI and the Proposed Action Alternative’s potential impacts on socioeconomic and environmental justice communities.

Socioeconomics is the interaction of social and economic factors in a population and environment. It includes the broader population, economic activity, and housing values that could be affected by a proposed action.

Environmental justice is the “fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies” (USEPA 2020d). Environmental justice communities of concern (i.e., populations with unusually high concentrations of poverty or meaningfully greater concentrations of minorities) should not bear a disproportionate burden of harmful environmental consequences due to policies, programs, activities, or standards; these communities should be considered in and involved with the environmental decision-making process.

The ROI for this analysis consists of Fort Greely and surrounding communities, including Deltana, Delta Junction, and Big Delta. Delta Junction is immediately north of Fort Greely at the junction of the Richardson Highway and the Alaska Highway. Deltana is approximately 10 miles east of Delta Junction along the Alaska Highway. Big Delta is approximately 10 miles north of Delta Junction along the Richardson Highway. For comparison, socioeconomic characteristics for the state of Alaska are provided in this section.

3.4.1 Regulatory Setting

A summary of regulations and guidance relevant to socioeconomic and environmental justice is provided in **Table 3.4-1**.

Table 3.4-1: Regulations and Guidance Applicable to Socioeconomics and Environmental Justice

Regulation/Guidance ¹	Description
EO 12898, <i>Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations</i> (1994)	Directs federal agencies to consider the potential adverse human health or environmental effects of their actions on minority and low-income populations.
EO 13045, <i>Protection of Children from Environmental Health Risks and Safety Risks</i> (1997)	Requires federal agencies to prioritize and address environmental risks that may disproportionately affect the health and safety of children.
CEQ Environmental Justice Guidance under NEPA (1997)	Provides guidance on the consideration of EJ in the NEPA process and how to identify EJ populations. Establishes criteria for identifying minority and low-income populations in the general population or affected area.

Notes:

¹ This table includes the primary regulations and guidance that apply to this resource area; it is not meant to be comprehensive. Other regulatory requirements may also apply.

CEQ = Council on Environmental Quality

EO = Executive Order

EJ = environmental justice

NEPA = National Environmental Policy Act

3.4.2 Affected Environment

3.4.2.1 Socioeconomic Characteristics

Selected socioeconomic characteristics in the ROI are provided in **Table 3.4-2** and described below.

Table 3.4-2: Selected Socioeconomic Characteristics in the ROI

Geography	2018 Population	Median Household Income (\$)	Owner-occupied housing unit rate (%)	Median value of owner-occupied housing units (\$)	Unemployment Rate in Population 16 Years and Older (%)	Population Under 18 (%)	Population of Racial Minority ¹ (%)	Population Living below Poverty Threshold (%)
Big Delta	457	78,447	81.0	150,400	0.0	17.3	13.3	5.5
Delta Junction	1,053	75,833	60.3	218,300	9.2	28.9	6.3	12.6
Deltana	2,613	88,696	86.9	230,900	10.2	31.3	3.1	3.3
Fort Greely	161	40,375	N/A ²	N/A ²	N/A ²	29.8	44.1	0.0 ²
Alaska	738,516	74,346	65.6	276,100	6.8	24.9	28.2	10.9

Notes:

¹ Minority populations were calculated by subtracting the White population from the total population.

² On-post residential populations at Fort Greely consist of military personnel and civilian family members who occupy government-owned housing and do not have incomes below the poverty threshold.

N/A = not applicable

ROI = region of influence

Source: U.S. Census Bureau 2018

Population

The population in the ROI (4,284 residents) represents approximately 0.6 percent of Alaska's total population (738,516 residents) and reflects the sparsely populated, remote character of Fort Greely and surrounding communities. Of the four communities in the ROI, Fort Greely has the smallest population (161 residents). Between 2010 and 2018, Fort Greely experienced an approximately 70 percent decrease in population (from 539 residents to 161 residents), likely due to organizational changes and/or changes in the installation's military mission. Comparatively, the overall population in the ROI decreased by approximately 1.3 percent, while the state population grew 3.4 percent during the same period.

The percentage of the ROI population under 18 years old ranges from 17.3 to 31.3 percent, with Big Delta having the lowest percentage and Deltana having the largest percentage. The percentage of Fort Greely's population under 18 years old (29.8 percent) is similar to Delta Junction (28.9 percent) and Deltana (31.3 percent), and somewhat higher than the state (24.9 percent).

Housing

Delta Junction and the state of Alaska have comparable rates of owner-occupied housing units (60.3 percent and 65.6 percent, respectively), while Big Delta and Deltana have similar (and higher) rates (81.0 percent and 86.9 percent, respectively). In contrast, there are no owner-occupied units on Fort Greely, likely because residents are military personnel and civilian dependents occupying on-post, government-owned housing. Housing values for owner-occupied units in the ROI range from \$150,400 to \$230,900. Housing values in the state are somewhat higher at \$276,100. Lower housing values in the ROI likely reflect the relatively small populations and correspondingly lower demand for housing in these communities.

Income and Employment

Median household incomes in Big Delta (\$78,447) and Delta Junction (\$75,833) are comparable; however, incomes are higher than that of the state (\$74,346), while Deltana reports a somewhat higher median household income at \$88,696. Fort Greely's median household income (\$40,375) is notably lower than the state and other communities in the ROI.

The three employment industry categories with the highest rates of employment in the ROI are: 1) educational services / health care / social assistance; 2) public administration; and 3) retail trade. There is some seasonal variation in employment, with higher employment in the summer months. The ROI has a relatively high unemployment rate. While Fort Greely and Big Delta report a 0 percent unemployment rate, Delta Junction and Deltana—the two larger communities in the ROI—report 9.2 percent and 10.2 percent unemployment rates, respectively. These unemployment rates are substantially higher than that of the state (6.8 percent).

Community Services

There are four public schools in the ROI: Delta Elementary School, Delta Junior High School, Delta High School, and Delta/Greely Homeschool. Other community services present in the ROI include places of worship, post offices, retail stores, and gas stations.

3.4.2.2 Environmental Justice

Minority Populations

CEQ guidance identifies a “minority population” as one where the percentage of minorities (with respect to race) exceeds 50 percent, or where the percentage of minorities is meaningfully greater than in the general population of the larger surrounding area (CEQ 1997). While none of the communities in the ROI have minority populations exceeding 50 percent, Fort Greely's minority population (44 percent) is notably larger than that of Delta Junction (6.3 percent), Deltana (3.1 percent), and Big Delta (13.3 percent) (**Table 3.4-2**). In comparison, minorities comprise 28.2 percent of the state's total population. Therefore, Fort Greely's minority population represents an environmental justice community of concern in the ROI.

Low-Income Populations

The U.S. Census Bureau identifies a “poverty area” as one where 20 percent or more of the residents have incomes below the poverty threshold (U.S. Census Bureau 2016). An “extreme poverty area” is defined by the U.S. Census Bureau as one where 40 percent or more of residents are below the poverty level (Shapiro et al. 2015). No communities in the ROI meet the definition of a poverty area, as poverty rates range from 0 percent to 12.6 percent (**Table 3.4-2**).

3.4.3 Environmental Consequences

This section analyzes the potential socioeconomic and environmental justice impacts in the ROI from the No Action Alternative and Proposed Action Alternative. Impact significance thresholds used for this analysis are provided in **Table 3.4-3**.

Table 3.4-3: Socioeconomics and Environmental Justice Impact Significance Thresholds

Impact Significance Threshold	Impact Significance Threshold Definition
Less-than-significant adverse impact	The alternative would cause changes to socioeconomic conditions in the ROI that would not substantially alter employment levels, housing supply, incomes, public services, or other socioeconomic factors. Socioeconomic effects would generally be temporary.
Potentially significant adverse impact	<p>The alternative would cause substantial temporary or permanent changes to socioeconomic conditions in the ROI, such as property values, demographic composition, local spending, tax base, employment levels, housing supply, or other socioeconomic factors.</p> <p>The alternative would result in disproportionately adverse impacts on environmental justice communities of concern or result in the displacement of these communities.</p>

Notes:

ROI = region of influence

3.4.3.1 No Action Alternative

Under the No Action Alternative, SM-1A reactor facility would continue to be maintained in a SAFSTOR condition. This would have no adverse impacts on socioeconomic conditions, including environmental justice communities, in the ROI.

3.4.3.2 Proposed Action Alternative

Under the Proposed Action Alternative, it is anticipated that decommissioning activities would generate temporary construction- and demolition-related jobs (likely fewer than 50), some of which may be local. This would have a short-term, beneficial effect on local socioeconomic conditions, including employment and personal income. New jobs would encourage the spending of business and personal income generated during the 6-year decommissioning period and would potentially result in an increase in temporary lodging or housing rentals in communities near Fort Greely. In addition, some revenues would be generated in the ROI from fees to dispose of C&D waste at local or regional landfills. Overall, the number of jobs supported by the Proposed Action Alternative would represent a small percentage of the regional labor force. Therefore, while the Proposed Action would have some short-term beneficial effects on socioeconomic conditions in the ROI,

these effects would be small. Due to the Proposed Action Alternative's intermittent and finite nature, there would be no long-term impacts on socioeconomics in the ROI.

Disturbance from dismantlement activities could have short-term, less-than-significant adverse impacts on residents and communities near SM-1A and Fort Greely. Temporary increases in dust, noise, and vibration at Fort Greely, and traffic through surrounding communities is expected under the Proposed Action Alternative. Decommissioning activities would be similar to other construction and demolition projects that periodically occur elsewhere on Fort Greely and would not be particularly unusual or disruptive. Adherence to BMPs, as well as coordination with Fort Greely and local communities by USACE and the decommissioning contractor, would minimize impacts on residents and communities in the ROI to the extent practicable.

No impacts on children are anticipated to result from the Proposed Action Alternative. There are no schools or other facilities near SM-1A where unusually large concentrations of children would potentially be present. A fenced, secured perimeter would be maintained around SM-1A throughout the Proposed Action Alternative to prevent unauthorized access by children or other unauthorized individuals. Decommissioning-related traffic (particularly heavy truck traffic) would primarily travel on major roads and would not be expected to regularly pass schools, neighborhoods, or other areas where large concentrations of children would be present.

Under the Proposed Action Alternative, no disproportionately adverse environmental justice impacts would be anticipated. Potential adverse impacts from fugitive dust and noise from the Proposed Action Alternative would primarily be confined to the SM-1A site and its immediate area where no on-post residential populations are present. To the extent practicable, on-post decommissioning-related traffic would be routed to avoid residential areas, further preventing or minimizing potential impacts on environmental justice communities at Fort Greely.

3.4.4 Socioeconomics and Environmental Justice BMPs

USACE public engagement with local communities on and around Fort Greely is ongoing and will continue throughout the duration of the Proposed Action. A summary of USACE's public engagement conducted to date is provided in **Section 1.7**. Information regarding the Proposed Action, including an electronic version of this EA, is also available on the USACE project website (<https://www.nab.usace.army.mil/SM-1A/>).

BMPs identified for other resources analyzed in this EA would minimize potential adverse impacts on nearby on- and off-post communities, particularly from noise, air pollutant emissions, fugitive dust, traffic, waste, and safety and health. Adherence to these BMPs would ensure that potential impacts on environmental justice communities are not disproportionately adverse.

3.5 Biological Resources

This section describes biological resources that could potentially be affected by the Proposed Action. The biological resources ROI is defined as the Fort Greely cantonment area. Biological resources addressed in this section include vegetation, wildlife and habitat, and protected species. Federally and state-listed rare, threatened, and

endangered species are not addressed in this EA because the Proposed Action would have no potential effects (**Table 3.1-1**).

3.5.1 Regulatory Setting

A summary of regulatory requirements applicable to the Proposed Action and biological resources in the ROI is provided in **Table 3.5-1**.

Table 3.5-1: Regulations and Guidance Applicable to Biological Resources

Regulation/Guidance ¹	Description
Federal	
Sikes Act (16 USC § 670)	Requires federal military installations with adequate wildlife habitat to develop a long-range INRMP.
DOD / U.S. Army / Fort Greely	
AR 200-1, <i>Environmental Protection and Enhancement</i>	Implements federal, state, and local environmental laws and DOD policies for preserving, protecting, conserving, and restoring the quality of the environment.
Fort Greely 2017-2021 Draft INRMP	Establishes policies, requirements, and procedures for the management of natural resources at Fort Greely.

Notes:

¹ This table includes the primary regulations and guidance that apply to this resource area; it is not meant to be comprehensive. Other regulatory requirements may also apply.

AR = Army Regulation

DOD = Department of Defense

EIS = Environmental Impact Statement

INRMP = Integrated Natural Resource Management Plan

USC = United States Code

3.5.2 Affected Environment

3.5.2.1 Vegetation

Vegetation communities on Fort Greely are representative of interior boreal forest biomes. Common species occurring in interior boreal forests on Fort Greely include white spruce (*Picea glauca*), quaking aspen (*Populus tremuloides*), and paper birch (*Betula papyrifera*). A considerable amount of vegetation on Fort Greely is in the early regeneration stage due to a fire that occurred on the installation in 1999. Vegetation on the SM-1A site and in the Fort Greely cantonment area, which is extensively urbanized or otherwise developed, is generally limited to areas of grass (maintained lawn) and ornamental shrubs.

Fifteen nonnative plant species have been documented on Fort Greely, of which only one species (bird vetch [*Vicia cracca*]) is considered highly invasive (HDR 2012a). The introduction and spread of invasive species are a concern at Fort Greely due to the amount of out-of-state cargo that arrives at the installation. Invasive species on Fort Greely are monitored and controlled in accordance with procedures set forth in the USAG Alaska INRMP (USAG Alaska 2017).

3.5.2.2 Wildlife and Habitat

Common wildlife species documented at Fort Greely include 13 mammal species, 1 amphibian species, and 52 bird species. No reptiles have been documented on the

installation (HDR 2012b). Representative wildlife species documented on Fort Greely are provided in **Table 3.5-2**.

Table 3.5-2: Representative Wildlife Species Documented at Fort Greely

Common Name	Scientific Name
Mammals	
Moose	<i>Alces alces</i>
Brown bear	<i>Ursus arctos horribilis</i>
Coyote	<i>Canis latrans</i>
Snowshoe hare	<i>Lepus americanus</i>
Porcupine	<i>Erethizon dorsatum</i>
Arctic ground squirrel	<i>Spermophilus parryii</i>
Red Squirrel	<i>Tamiasciurus hudsonicus</i>
Meadow Vole	<i>Microtus pennsylvanicus</i>
Birds	
Dark-eyed junco	<i>Junco hyemalis</i>
Alder flycatcher	<i>Empidonax alnorum</i>
Yellow-rumped warbler	<i>Setophaga coronata</i>
Hermit thrush	<i>Catharus guttatus</i>
American robin	<i>Turdus migratorius</i>
Common raven	<i>Corvus corax</i>
White-crowned sparrow	<i>Zonotrichia leucophrys</i>
Cliff swallow	<i>Petrochelidon pyrrhonota</i>
Mew gull	<i>Larus canus</i>
Spruce grouse	<i>Falcapennis canadensis</i>
Ruffed grouse	<i>Bonasa umbellus</i>
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>
Amphibian	
Wood frog	<i>Rana sylvatica</i>

Source: USAG Alaska 2020b

Moose are frequently observed on Fort Greely, as their height enables them to clear fencing as tall as 6 feet. Fort Greely's perimeter fence (and other internal fences on the post) generally restricts the movement of other large terrestrial wildlife species.

Suitable mammal habitat in the cantonment area and at the SM-1A site is limited. Mammals likely to occur at SM-1A include squirrels, mice, and/or other small rodents that are adapted or conditioned to urbanized environments and a high degree of human activity. The wood frog, which requires wetland habitat, is not present at the SM-1A site.

Some bird species occurring at Fort Greely, such as cliff swallows, have a potential to nest under the eaves of buildings in the cantonment area. However, the SM-1A site has not been historically impacted by bird issues. Fort Greely has improved building exteriors with an environmentally friendly insulation system to discourage bird nesting.

3.5.3 Environmental Consequences

This section describes the potential impacts on biological resources in the ROI from the No Action Alternative and Proposed Action Alternative. Impact significance thresholds used for this analysis are provided in **Table 3.5-3**.

Table 3.5-3: Biological Resources Impact Significance Thresholds

Impact Significance Threshold	Impact Significance Threshold Definition
Less-than-significant adverse impact	<ul style="list-style-type: none"> The alternative would result in a small temporary increase in injury and/or occasional mortality of vegetation/wildlife. The alternative would result in a small temporary loss of wildlife habitat.
Potentially significant adverse impact	<ul style="list-style-type: none"> The alternative would result in substantial wildlife mortality. The alternative would result in substantial habitat loss.

3.5.3.1 No Action Alternative

Under the No Action Alternative, USACE would continue to maintain SM-1A in a SAFSTOR condition and existing biological conditions at Fort Greely would continue. Therefore, no impacts on biological resources would occur.

3.5.3.2 Proposed Action Alternative

Under the Proposed Action Alternative, existing areas of grass (maintained lawn) and ornamental vegetation on the SM-1A site would be removed to facilitate the decommissioning and dismantlement of SM-1A; these areas would be small in the context of other vegetated areas of Fort Greely and the surrounding region. Although two trees would be removed in the southwest corner of the SM-1A site during implementation of the Proposed Action Alternative, no clearing would be required elsewhere on Fort Greely. Short-term adverse impacts on vegetation would be less than significant.

Temporarily disturbed areas would be reseeded with native grasses and/or shrubs during the Proposed Action Alternative's site restoration phase (**Table 2.2-1**) to promote revegetation of the site, prevent the introduction of nonnative or invasive plant species, and prevent or minimize continued soil erosion. New or replanted vegetation on the site would be monitored and managed by Fort Greely in accordance with the installation's Draft INRMP. The Proposed Action Alternative would not involve the continued disturbance or removal of vegetation on the SM-1A site once the proposed decommissioning and dismantlement activities are complete. Therefore, there would be no long-term adverse impacts on vegetation.

The removal of structures and small areas of vegetation on the SM-1A site during implementation of the Proposed Action Alternative would potentially displace small species of wildlife and birds inhabiting those areas. Additionally, the increased levels of noise and human presence on the SM-1A site could disturb or cause annoyance to wildlife inhabiting adjacent or nearby areas of the cantonment area. The levels of additional noise and human activity at the SM-1A site would vary throughout the duration of the Proposed Action Alternative and would result in corresponding annoyance or disturbance reactions from nearby wildlife. Generally, the additional noise and activity on the site would be comparable to other projects of similar scale that occur on Fort Greely. It is likely that disturbed or displaced wildlife would relocate to other areas of the installation offering

similar types of habitat. The available habitat on the SM-1A site that would be removed is of low quality and would be small in the context of habitat elsewhere on Fort Greely and in the surrounding area. Impacts would occur at the individual rather than population or species level and would not prevent the continued propagation of any species.

Increased traffic volumes associated with the Proposed Action Alternative would increase the potential for accidental collisions between vehicles and large mammals such as moose on the installation. To reduce the potential for such collisions, the decommissioning contractor would be briefed on the potential risk of collisions and would be required to adhere to posted speed limits and transportation routes. If determined necessary—particularly during the winter months when wildlife is more difficult to detect—spotter vehicles would be used to further minimize the risk of wildlife collisions.

The transportation of packaged waste by vessel from Alaska to one or more receiving ports in the contiguous 48 states would have no or negligible potential to affect marine resources. Waste would be packaged and transported in accordance with applicable regulatory requirements established by USNRC, USDOT (including the IMDG Code), USEPA, and the State of Alaska. The vessels would be operated by licensed commercial companies in accordance with applicable USDOT and U.S. Coast Guard operational and safety requirements. The vessels would follow established commercial navigation routes that would avoid sensitive environmental resources (e.g., critical habitat for federally listed species, marine sanctuaries, and fisheries) (additional discussion on marine shipping is provided in **Section 3.7**).

USACE and/or the decommissioning contractor would coordinate with the Fort Greely Directorate of Public Works, Environmental Division, to determine the most appropriate course of action if an active MBTA-protected nest is observed on the SM-1A site. Any necessary nest relocation or removal would be conducted in accordance with policies and procedures set forth in the Fort Greely Draft INRMP. Therefore, short-term adverse impacts on wildlife and habitat would be less than significant.

Following completion of the Proposed Action Alternative, long-term wildlife and habitat conditions on the SM-1A site would be similar to existing conditions. Small wildlife species and/or birds that are conditioned to an urban environment and human activity could return to inhabit new vegetation on the site. The Proposed Action Alternative would have no potential to permanently prevent the propagation of any species. Therefore, there would be no long-term adverse impacts on wildlife and habitat.

3.5.4 Biological Resources BMPs

The decommissioning contractor would implement the following BMPs during the Proposed Action Alternative to prevent or minimize adverse impacts on biological resources in the ROI:

- Adhere to applicable policies and practices set forth in the Fort Greely Draft INRMP to prevent or minimize the introduction and spread of invasive plant species, such as only using certified weed-free seed mixtures during revegetation.
- Use spotters or escort vehicles as determined necessary, particularly during winter months when wildlife is more difficult to detect, to minimize the risk of

collisions with moose or other wildlife during on-post vehicle operations (e.g., waste transport).

- Coordinate with the Fort Greely Directorate of Public Works, Environmental Division, to determine the most appropriate course of action if an active MBTA-protected nest is observed on the SM-1A site.

3.6 Air Quality

This section describes existing air quality conditions and the Proposed Action’s potential effects on air quality. The air quality ROI for this EA is Fort Greely.

3.6.1 Regulatory Setting

3.6.1.1 National Ambient Air Quality Standards and Alaska Ambient Air Quality Standards

As directed by the CAA, the USEPA establishes National Ambient Air Quality Standards (NAAQS) to protect public health and welfare as outlined in 40 CFR 50. The CAA requires states to regulate air pollution emission sources to meet and maintain the NAAQS. The NAAQS establishes maximum acceptable concentrations for criteria pollutants that consist of nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀), particulate matter with an aerodynamic diameter of 2.5 microns or less (PM_{2.5}), ozone, and lead. States are authorized by the CAA to establish their own ambient air quality standards, provided that the state standards are at least equivalent to the NAAQS.

The Alaska Ambient Air Quality Standards (AAAQS) are equivalent to or more stringent than the NAAQS (**Table 3.6-1**). In addition to setting Alaska-specific standards for criteria pollutants, the AAAQS also include a standard for ammonia. Air pollutant concentrations that are lower than the AAAQS provide public health protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly.

Table 3.6-1: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Period	NAAQS (µg/m ³)	AAAQS (µg/m ³)	Form
CO	8-hour	10,000	10,000	Not to be exceeded more than once per year
	1-hour	40,000	40,000	Not to be exceeded more than once per year
NO ₂	Annual	100	100	Annual mean
	1-hour	188	188	98th percentile of annual distribution of the maximum daily 1-hour concentrations averaged over 3 years
PM _{2.5}	Annual	12	12	Annual mean, averaged over 3 years
	24-hour	35	35	98th percentile, averaged over 3 years
PM ₁₀	24-hour	150	150	Not to be exceeded more than once per year on average over 3 years

Table 3.6-1: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Period	NAAQS (µg/m ³)	AAAQS (µg/m ³)	Form
SO ₂	Annual	--	80	Not to be exceeded
	24-hour	--	365	Not to be exceeded more than once per year
	3-hour	--	1,300	Not to be exceeded more than once per year
	1-hour	196	196	99th percentile of the annual distribution of the maximum daily 1-hour concentrations averaged over 3 years
Lead	Rolling 3-month average	0.15	0.15	Not to be exceeded
Ozone	8-hour	0.070 ppm	0.070 ppm	3-year average of the fourth-highest daily maximum of 8-hour averages not to exceed 0.070 ppm
Ammonia	8-hour	-	2.1 mg/m ³	Not to be exceeded more than once per year

Notes:

µg/m³ = microgram(s) per cubic meter

CO = carbon monoxide

AAAQS = Alaska Ambient Air Quality Standards

mg/m³ = milligrams per cubic meter

NAAQS = National Ambient Air Quality Standards

NO₂ = nitrogen dioxide

Sources: USEPA 2020c, 18 AAC 50

PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 microns or less

PM₁₀ = particulate matter with an aerodynamic diameter of 10 microns or less

ppm = parts per million

SO₂ = sulfur dioxide

Fort Greely is in a region designated by USEPA as unclassifiable and/or in attainment for all criteria pollutants regulated by the NAAQS. Therefore, a General Conformity Analysis of potential emissions from the Proposed Action is not required under the CAA General Conformity regulations. However, the Conformity Analysis emissions threshold value of 100 tons per year (tpy) is used in this EA as a basis of comparison to analyze potential air quality impacts from the Proposed Action’s estimated total emissions of criteria pollutants.

Sources of lead emissions in the region surrounding Fort Greely are minimal. SM-1A is not near any airfields where lead fuel is routinely combusted or where substantial lead emissions could occur. The Proposed Action would be anticipated to have no or minimal lead emissions. Therefore, ambient lead concentrations and comparisons to the lead AAAQS are not addressed further in this analysis. Additionally, evaluation of the ammonia AAAQS is not addressed further in this analysis because sources of ammonia in the region surrounding SM-1A and Fort Greely are minimal, and the Proposed Action would be anticipated to have no or minimal ammonia emissions.

Through the National Emission Standards for Hazardous Air Pollutants (40 CFR 61), the CAA dictates specific regulatory limits for source categories that emit radionuclides. It is anticipated that potential emissions of radionuclides during the Proposed Action would remain well below applicable National Emission Standards for Hazardous Air Pollutant thresholds specified in the CAA. USACE would conduct an official regulatory review prior to implementation of the Proposed Action to determine applicable requirements.

3.6.1.2 Hazardous Air Pollutants and Greenhouse Gases

USEPA, state, and local governments regulate toxic and hazardous air pollutants (HAPs) such as benzene, asbestos, naphthalene, toluene, and xylenes. The USEPA has identified 188 HAPs that are known or suspected to cause health effects in small doses. HAPs are emitted by a wide range of human-made and naturally occurring sources, including mobile and stationary source combustion and venting. Given that HAPs emissions from the Proposed Action are anticipated to have no or minimal emissions, they are not quantitatively analyzed further. BMPs would be used to prevent or minimize HAPs emissions to the extent practicable. Pursuant to CAA Section 112, radionuclides such as radon, cesium-137, plutonium, and uranium are categorized as HAPs (USEPA 2020a). Radiological safety and health conditions at SM-1A, including radionuclides present at the facility, are further described in **Section 3.11**.

Greenhouse gases (GHGs) are compounds that contribute to the greenhouse effect. The greenhouse effect is a natural phenomenon where gases trap heat in the surface-troposphere (lowest portion of the earth's atmosphere) system, causing heating at the surface of the earth. The primary long-lived GHGs directly emitted by human activities are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). CO₂ and other GHGs are emitted from fuel-burning stationary sources (e.g., boilers, generators, plants, and factories), fuel-burning mobile sources (e.g., cars, buses, airplanes, trains, and construction equipment), and certain manufacturing industries and activities including leaked and vented gas (USEPA 2020b).

3.6.1.3 Title V Operating Permits

Under Title V of the CAA, operating permits are required for large stationary sources of emissions. Operating permits are issued either by the State or USEPA to large sources (also referred to as “major” sources) emitting 100 tpy of any criteria pollutant, or 10 or 25 tpy of any single or combination of HAPs, respectively, and to smaller sources (called “area” sources, “minor” sources, or “nonmajor” sources) that consist of certain types of industrial operations. Examples of sources that could be permitted under the Title V permit program include boilers, emergency generators, water heaters, fuel storage tanks, chemical usage operations, welding operations, woodworking, and fugitive emissions such as cooling towers and surface coating/paint booths.

Fort Greely currently maintains Title V permits for three major sources on the installation: the Missile Defense Complex (Permit No. AQ1071TVP03), Fort Greely Real Estate (Permit No. AQ0238TVP04), and Doyon Utilities (Permit No. AQ1183TVP03). Each permit regulates stationary source emissions under the specific operations and includes requirements for emissions monitoring, testing, recordkeeping, reporting, and inventorying on an annual basis.

3.6.2 Affected Environment

3.6.2.1 Regional Climate

Fort Greely is in central Interior Alaska, which experiences seasonal extremes. The area is characterized by wide annual temperature ranges; short, moderate summers; long, cold

winters; large variations in seasonal sunlight periods; low humidity; and low precipitation. June through August are typically the wettest months with average rainfall of approximately 2 inches per month. October and November receive the most snowfall, with an average of approximately 9 inches per month (NOAA 2020). Overall, the area receives an average of 12 inches per year wet precipitation equivalent with 30 percent of that from snow. The average normal low temperature in January is -10 degrees Fahrenheit, with the average normal high temperature in July of 66 degrees Fahrenheit (NOAA 2020). The wind is the primarily the strongest during the winter months, with an average range in speed of about 8 to 12 miles per hour from the east-southeast (NOAA 2020). Wind direction from early fall to early spring follows the east-southeast orientation of the Tanana Valley and the southwestern orientation of the Delta River from May through July, which are often associated with the calmest winds of the year. The maximum wind gusts tend to occur in the winter with gusts up to 65 miles per hour.

3.6.2.2 Existing Air Quality

As previously noted, the SM-1A site and Fort Greely are in an area designated by USEPA as unclassifiable and/or in attainment for criteria air pollutants regulated by the NAAQS and AAAQS under the CAA. Generally, air quality in Interior Alaska is very good (with the exception of PM_{2.5} pollution). The air quality region containing Fort Greely borders a nonattainment area for PM_{2.5}. Elevated PM_{2.5} pollution in the area primarily results from human sources, such as wood stoves, burning distillate oil, industrial sources, and mobile emissions, as well as smoke from summertime wildfires that vary in intensity and duration each season (i.e., April through September) (ADEC 2020b). Although elevated concentrations of PM_{2.5} could potentially occur at Fort Greely due to its proximity to the PM_{2.5} nonattainment area, this does not have an overall effect on the unclassifiable and/or in attainment designation for the air quality region that includes Fort Greely.

Principal sources of air pollution in the ROI include fuel combustion emissions from vehicles and equipment used to produce heat and electrical power for buildings. Pollutants emitted from mobile sources (e.g., automobiles and construction equipment) include hydrocarbons, carbon monoxide, nitrogen oxides, and particulates. HAP emissions in the ROI are primarily associated with permanent, stationary sources (e.g., fueling stations, fuel storage tanks, and paint booths). During cold weather, overall air quality impacts from motor vehicle emissions are intensified by the combination of emissions from cold vehicle starts / prolonged vehicle idling and the increased combustion of residential heating fuels. The principal natural sources of air pollution in the ROI are from wildfires and windblown dust. Smoke and soot from wildfires in and outside the ROI have the potential to contribute to increases in PM_{2.5} pollution and the corresponding degradation of local and regional air quality during the summer fire season; however, because these increases are seasonal and temporary, they are unlikely to require the redesignation of the ROI as a nonattainment area.

3.6.3 Environmental Consequences

This section describes the effects on air quality in the ROI potentially resulting from the No Action Alternative and Proposed Action Alternative. Thresholds used to determine the significance of potential impacts from the alternatives are provided in **Table 3.6-2**.

Table 3.6-2: Air Quality Impact Significance Thresholds

Impact Significance Threshold	Impact Significance Threshold Definition
Less-than-significant adverse impact	The alternative would result in a minimal and temporary impact on air quality in or near the ROI; however, such impacts could be minimized through adherence to applicable permitting requirements and BMPs. Impacts would cease on the completion of activities associated with the alternative.
Potentially significant adverse impact	The alternative would result in a substantial or long-term impact on air quality in or near the ROI that could not be controlled or mitigated through adherence to applicable permitting requirements, BMPs, or other minimization or protection measures.

Notes:

BMP = best management practice(s)

ROI = region of influence

3.6.3.1 No Action Alternative

Under the No Action Alternative, SM-1A would continue to be maintained by USACE in a SAFSTOR condition and existing air quality conditions in the ROI would continue. Therefore, this alternative would have no impact on air quality in the ROI.

3.6.3.2 Proposed Action Alternative

Activities in the Proposed Action Alternative that would generate short-term pollutant emissions would include the following:

- Site preparation activities (e.g., clearing, grading)
- Handling and transport of excavated and imported materials (e.g., excavated soils, clean fill soils, concrete) during dismantlement activities
- Storage of excavated and imported materials in stockpiles (e.g., soils)
- Windblown dust from unpaved areas
- Off-site excavation and production of fill materials that would be used at the site during decommissioning (e.g., clean fill soils, concrete)
- Fuel combustion by decommissioning-related vehicles and equipment (e.g., workers' commuting vehicles, heavy-duty trucks delivering materials and equipment, and C&D equipment)

Emissions generated by these activities would occur at the emission source and would generally remain localized to the SM-1A site except during strong wind conditions, thereby resulting in a localized impact.

Emissions from activities potentially generating fugitive dust (e.g., material hauling and transport, site preparation, stockpiles) were quantitatively assessed. These emission sources could potentially result in a localized impact; therefore, they were quantitatively assessed. It is anticipated that nonfugitive emissions during the Proposed Action (e.g., vehicle tailpipe, heavy duty trucks, and equipment) would be temporary and relatively small, resulting in only a slight increase of temporary emissions in the ROI. Additionally, some potential fugitive dust emission sources (e.g., off-site excavation of soil or fugitive dust from driving on paved roads) were not included in the estimates because the proposed activities would occur over a large area and result in a relatively small quantity of emissions. Using PM₁₀ as a conservative surrogate, estimated fugitive dust emissions

from the Proposed Action are provided by activity in **Table 3.6-3**. Based on the emissions calculated in **Table 3.6-1**, the project would not exceed the PM₁₀ threshold values of 100 tpy. Further details on the emission sources (such as the types and assumptions) are provided in **Appendix B**.

Table 3.6-3: Proposed Action Alternative Estimated Fugitive Dust Emissions

Source	Annual Estimated PM ₁₀ Emissions (tpy)	Total Estimated PM ₁₀ Emissions (tons)	PM ₁₀ <i>de minimis</i> Threshold Value (tpy)
Stockpile Fugitive Dust	0.03	0.14	100
Soil Export Fugitive Dust	1.40E-04	6.31E-04	100
Radioactive Soil Export Fugitive Dust	9.67E-05	4.35E-04	100
Soil Import Fugitive Dust	1.12E-04	5.02E-04	100
Wind Erosion from exposed areas	3.52E-02	0.16	100
Site Preparation Fugitive Dust	0.66	2.98	100
Building Demolition Fugitive Dust	0.04	0.04	100
Total Controlled Emissions	0.77	3.32	100

Notes:

PM10 = particulate matter with an aerodynamic diameter of 10 microns or less

tpy = tons per year

It is anticipated that there would be no new sources of long-term operational emissions that would have the potential to contribute to the degradation or deterioration of local or regional ambient air quality or require a new or modified Title V permit. If new stationary equipment is installed on the site in the future following the completion of the Proposed Action, it would be the responsibility of the proponent installing the equipment to either modify an existing permit or obtain a new one, as applicable.

Based on the quantitative and qualitative analyses of the estimated emissions, all criteria pollutant emissions (fugitive and nonfugitive) associated with the Proposed Action Alternative would have no potential to exceed applicable *de minimis* thresholds or alter the attainment status of the air quality region containing Fort Greely. Therefore, short-term adverse impacts on air quality in the ROI resulting from the Proposed Action Alternative would be less than significant, and there would be no long-term impacts.

3.6.4 Air Quality BMPs

The following BMPs would be implemented during the Proposed Action Alternative to prevent or minimize adverse air quality impacts in the ROI:

- Implement a fugitive dust control plan to control and minimize fugitive dust emissions
- Directly load (i.e., do not stockpile) radioactive waste and nonradioactive regulated solid waste into appropriate containers for transport
- Transport radioactive waste and nonradioactive regulated solid waste in closed containers meeting applicable regulatory requirements
- Cover payloads of C&D waste and backfill soils in trucks while in transit

- Periodically spray water on on-post paved and unpaved haul roads, as weather conditions allow
- Cover backfill soil stockpiles or periodically spray with water, as weather conditions allow

3.7 Transportation and Traffic

This section describes the local and regional transportation network with regard to the Proposed Action. The ROI for the transportation analysis consists of on-post roads, regional off-post public roads and highways, and railroad lines that would potentially be used to transport waste generated by the Proposed Action.

3.7.1 Regulatory Setting

The Alaska Department of Transportation and Public Facilities (ADOT&PF) designs, constructs, operates, and maintains the state’s transportation infrastructure systems, buildings, and other facilities. ADOT&PF partners with the Alaska Railroad Corporation (ARRC) to facilitate rail transportation in accordance with the Alaska Railroad Corporation Act. ARRC owns, operates, and maintains rail lines throughout Alaska.

The transportation of radioactive materials is regulated jointly by the USDOT and USNRC. The Army does not regulate the transportation or disposal of radioactive materials.

A summary of regulations and guidance that are applicable to transportation activities associated with the Proposed Action is provided in **Table 3.7-1**.

Table 3.7-1: Regulations and Guidance Applicable to Transportation

Regulation/Guidance ¹	Description
Federal	
10 CFR 71, <i>Packaging and Transportation of Radioactive Material</i>	Establishes USNRC requirements for packaging, preparation for shipment, and transportation of licensed radioactive material.
23 CFR 658, <i>Truck Size and Weight, Route Designations – Length, Width, and Weight Limitations</i>	Prescribes national policies that govern truck size and weight.
40 CFR 243, <i>Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste</i>	Establishes requirements for the storage and collection of residential, commercial, and institutional solid wastes and street wastes.
40 CFR Subchapter I, <i>Solid Waste</i> Parts 260-270	Establishes USEPA requirements for the generation, management, transportation, and disposal of hazardous waste.
Toxic Substances Control Act of 1978 (15 USC 2601 et seq.; 40 CFR Subchapter R)	Authorizes USEPA to regulate the manufacture, processing, distribution, use, and disposal of certain chemicals and mixtures to protect human health and the environment.
49 CFR Subchapter C, <i>Hazardous Material Regulations</i>	Establishes USDOT regulations for the packaging and shipment of hazardous materials by public highway, rail, air, and vessels.

Table 3.7-1: Regulations and Guidance Applicable to Transportation

Regulation/Guidance ¹	Description
49 CFR 172, <i>Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, Training Requirements, and Security Plans</i>	Establishes USDOT requirements for shipping papers, package marking, labeling, and transport vehicle placarding applicable to the shipment and transportation of hazardous materials, including Class 7 radioactive materials ² .
49 CFR 383, <i>Commercial Driver's License Standards; Requirements and Penalties</i>	Establishes commercial motor vehicle driver's license requirements.
49 CFR 397 Subpart D, <i>Routing of Class 7 (Radioactive) Materials</i>	Establishes requirements for the routing of Class 7 radioactive material for motor carriers and drivers and State routing designations.
IMDG Code	The IMDG Code is maintained and updated by the International Maritime Organization and governs the majority of shipments of hazardous materials by water. The IMDG Code is intended to provide for the safe transportation of hazardous materials by vessel, protect crew members, and prevent marine pollution. The IMDG Code includes requirements applicable to the transport of hazardous materials by sea (e.g., requirements for marine pollutants, freight container loading procedures, stowage and segregation, and other requirements applicable to shipboard safety and preservation of the marine environment) that are not covered by the United Nations Model Regulations. Implementation of the IMDG Code is mandatory in conjunction with governments' obligations under the International Convention for the Safety of Life at Sea and the International Convention for the Prevention of Pollution from Ships. The United States is signatory to these two conventions. The U.S. Hazardous Materials Regulations (49 CFR 100-185) authorizes the use of the IMDG Code as a means of compliance with the Hazardous Materials Regulations when at least one segment of transport involves sea transport (USDOT 2020).
State of Alaska	
17 AAC 25, <i>Transportation and Public Facilities</i>	Establishes requirements for the planning, design, construction, operation, maintenance, and use of the Alaska state highway system, including the transport of hazardous materials, hazardous substances, and hazardous waste (17 AAC 25.200); safe operation of commercial motor vehicles (17 AAC 25.210); and requirements for oversize/overweight vehicles (17 AAC 25.310 et seq.).
DOD / U.S. Army / Fort Greely	
DA-PAM 385-24, <i>The Army Radiation Safety Program</i>	Establishes Army safety procedures for the use, licensing, transportation, disposal, dosimetry, accident reporting, safety design, accountability of, and radiation exposure standards for ionizing and non-ionizing radiation sources.

Notes:

¹ This table includes the primary regulations and guidance that apply to this resource area; it is not meant to be comprehensive. Other regulatory requirements may also apply.

² Generally, Class 7 radioactive materials consist of an indispersible solid radioactive material or a sealed capsule containing radioactive material.

AAC = Alaska Administrative Code
 CFR = Code of Federal Regulations
 DA PAM = Department of the Army Pamphlet
 DOD = Department of Defense
 IMDG = International Maritime Dangerous Goods
 TSCA = Toxic Substances Control Act

USDOT = United States Department of Transportation
 USEPA = United States Environmental Protection Agency
 USNRC = United States Nuclear Regulatory Commission

3.7.2 Affected Environment

3.7.2.1 Fort Greely

The vehicular transportation network on Fort Greely primarily consists of paved, two-lane roads laid out in a north-south and east-west grid pattern in the installation's intensively developed central cantonment area (**Figure 2.2-1**). Additional paved and unpaved roads extend from the central cantonment area to less intensively developed areas of Fort Greely. Parking for government and privately owned vehicles is generally provided in paved surface lots adjacent to or near respective buildings and facilities on the installation.

The majority of vehicular traffic accesses Fort Greely from Richardson Highway through a staffed access control point (ACP) along Big Delta Avenue on the west side of Fort Greely. It is likely that traffic volumes at the gate are heaviest on weekdays during peak morning and afternoon commuting times from 6:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., respectively.

3.7.2.2 Regional Transportation Network

Regional access to Fort Greely is via the Richardson Highway. The Richardson Highway is a two-lane highway that generally runs in a north-south direction for approximately 366 miles from Fairbanks (approximately 95 miles northwest of Fort Greely) to Valdez (approximately 268 miles south of Fort Greely). The Richardson Highway is designated as Alaska Route 4 from Valdez to Delta Junction (immediately north of Fort Greely) and as Alaska Route 2 from Delta Junction to Fairbanks. The Glenn Highway (Alaska Route 1) is a two-lane highway that serves as the primary east-west road between its intersection with Richardson Highway (approximately 153 miles south of Fort Greely) and Anchorage (approximately 232 miles southwest of Fort Greely). The Richardson Highway and Glenn Highway are maintained by ADOT&PF.

Estimated 2018 average annual daily traffic (AADT) volumes on local and regional off-post roads and highways are provided in **Table 3.7-2**.

Table 3.7-2: AADT Volume Estimates on Regional Off-Post Roads and Highways

Road Segment ¹	Approximate Distance (miles)	AADT Volume Estimate (2018)
Richardson Highway from Big Delta Avenue (milepoint 264.096) north to 6th Street (milepoint 268.264) (Delta Junction)	4.0	1,737
Richardson Highway from Big Delta Avenue (milepoint 264.096) south to milepoint 252.279)	12.0	443
Richardson Highway from 6th Street (milepoint 268.264) north to Alaska Highway (milepoint 268.950) (Delta Junction)	0.7	1,418
Richardson Highway from Kimball Street / U.S. Post Office entrance (milepoint 269.254) north to Jack Warren Road (milepoint 271.216) (Delta Junction)	2.0	2,664
Richardson Highway from Jack Warren Road (milepoint 271.216) (Delta Junction) north to Tanana River Bridge (milepoint 278.292) (Big Delta)	7.0	2,089
Richardson Highway from milepoint 349.721 north to milepoint 351.292 (North Pole)	2.0	12,886

Table 3.7-2: AADT Volume Estimates on Regional Off-Post Roads and Highways

Road Segment ¹	Approximate Distance (miles)	AADT Volume Estimate (2018)
Richardson Highway from milepoint 359.182 north to milepoint 361.164 (Fairbanks)	2.0	25,812
Glenn Highway from Richardson Highway intersection (milepoint 178.128) west to milepoint 179.653	1.5	1,849
Glenn Highway from milepoint 53.606 west to milepoint 70.478 (northeast of Wasilla)	17.0	1,650
Glenn Highway from milepoint 6.323 to milepoint 10.324 (northeast of central Anchorage)	4.0	60,767

Notes:

¹The road segments listed here were selected to provide representative AADT volume estimates in rural and urbanized areas along those roads.

AADT = average annual daily traffic

Source: ADOT&PF 2020b

As provided in **Table 3.7-2**, estimated AADT volumes on roads and highways in the vicinity of Fort Greely, Delta Junction, Fairbanks, and Anchorage are generally higher in urban areas and lower in rural areas. These estimated AADT volumes are expected to be within the existing capacity of the respective roads in **Table 3.7-2**.

The State of Alaska limits the weight of transport vehicles in the spring months as the ground thaws to preclude damage to roadways. This limitation is in addition to the typical weight and size restrictions on the movement of vehicles over the state's highways (or rail lines). Overweight/oversize highway permits are typically issued by ADOT&PF.

USDOT establishes the following maximum weights for the National System of Interstate and Defense Highways (23 CFR 658.17):

- 80,000 pounds gross vehicle weight
- 20,000 pounds single axle weight
- 34,000 pounds tandem axle weight

States may issue permits for loads that exceed the USDOT-specified weights listed above. ADOT&PF issues overweight transportation permits for loads in excess of the following:

- 150,000 pounds gross vehicle weight
- 30,000 pounds for a single axle trailer
- 56,000 pounds for a tandem axle trailer
- 70,000 pounds for a tridem axle trailer
- 80,000 pounds for a quadem axle trailer

3.7.2.3 Rail Network

The ARRC is a public/private partnership that maintains and operates 656 miles of freight and passenger railroad tracks and 681 freight revenue railcars that comprise the Alaska Railroad. The Alaska Railroad connects Fairbanks to ports and other communities throughout Southcentral and Interior Alaska, including Anchorage and Whittier (approximately 236 miles south-southwest of Fort Greely). In 2019, the railroad

transported 3.49 million tons of freight, consisting of extracted natural resources such as coal, gravel, and petroleum products; and commodities including industry chemicals and supplies, dry goods, hazardous materials, pipe, lumber, heavy equipment, and specialty items (ARRC 2020).

3.7.2.4 Marine Ports and Shipping

The Port of Alaska in Anchorage and the Port of Whittier are commercial shipping ports serving Southcentral Alaska. Both ports are served by the ARRC. The Port of Alaska is designated as a DOD commercial strategic seaport. In 2018, the Port of Alaska handled approximately 3.9 million tons of cargo, including 174,000 tons of outbound cargo (Port of Alaska 2019). The ARRC coordinates commercial charter vessels at least once per week from the Port of Whittier to Seattle, Washington (ARRC 2019). Generally, cargo vessels depart the Port of Alaska or Whittier once per week for the 4-day trip to Seattle (USACE 2021b).

Cargo handling capabilities at the Port of Whittier include the loading of railcars directly onto vessels. Freight rail containers destined for shipment from the Port of Alaska must be transferred from trains to trucks at the rail yard prior to vessel loading. Representative types of vessels serving the Port of Alaska and Port of Whittier have a cargo capacity of approximately 15,300 tons (Alaska Marine Lines 2020). Vessels follow established commercial navigation routes.

3.7.3 Environmental Consequences

This section describes the potential impacts on transportation in the ROI from the No Action Alternative and Proposed Action Alternative. Impact significance thresholds for this analysis are provided in **Table 3.7-3**.

Table 3.7-3: Transportation Impact Significance Thresholds

Impact Significance Threshold	Impact Significance Threshold Definition
Less-than-significant adverse impact	<ul style="list-style-type: none"> • The alternative would result in a small temporary increase in peak hour traffic that could cause additional delays; however, the functionality of existing roadways would not change. • The alternative would result in minor damages to pavement; however, the damage would be localized and could be repaired easily. • The alternative would result in a negligible increased risk of a traffic accident and/or fatality.
Potentially significant adverse impact	<ul style="list-style-type: none"> • The alternative would result in a large temporary increase in peak hour traffic that would cause additional delays and decrease the functionality of existing roadways. • The alternative would result in severely damaged pavement requiring extensive repairs. • The alternative would substantially increase the risk of a traffic accident fatality occurring as a result of the project.

3.7.3.1 No Action Alternative

Under the No Action Alternative, SM-1A would continue to be maintained by USACE in a SAFSTOR condition. Current conditions would continue and there would be no impacts on transportation and traffic on or outside Fort Greely.

3.7.3.2 Proposed Action Alternative

Fort Greely and Regional Transportation Networks

The Proposed Action Alternative would generate additional vehicle traffic on Fort Greely and on the Richardson Highway from Fort Greely to Fairbanks. Additional vehicle trips would include workers commuting to the project site, as well as heavy trucks hauling decommissioning-related materials and equipment, transporting waste from the SM-1A site, and bringing fill soils to the site during restoration activities.

The number of additional trips generated by workers commuting to the site is anticipated to be low. Workers' vehicles would enter and exit through the Big Delta Avenue ACP during morning and evening peak hours at approximately the same times as installation personnel. These additional vehicles could contribute to traffic congestion and delays, but effects would be anticipated to be minimal. The number of workers at the SM-1A site would vary throughout the duration of the project and would be small relative to the number of DOD personnel commuting to Fort Greely on a daily basis. Effects would be minimal and would vary throughout the Proposed Action Alternative relative to the number of workers commuting to the SM-1A site each day. Therefore, short-term adverse impacts on traffic at Fort Greely from workers' commuting vehicles would be temporary and less than significant.

Shipments of waste from SM-1A would contribute to increases in traffic on on-post and off-post roads. Approximately 132 containers or truckloads of decommissioning waste would be shipped from Fort Greely during each shipping season (late spring to early fall) between 2023 and 2026 (**Section 2.2**). Assuming a 6-month shipping season between April and September, this would equate to approximately 22 containers or truckloads per month. These estimated monthly and seasonal numbers could vary substantially depending on decommissioning schedule, weather conditions, the availability of trained and qualified transportation contractors, and other factors.

On Fort Greely, it is likely that there would be a noticeable addition of truck trips to current traffic volumes. These additional trips could contribute to short traffic delays at the Big Delta Avenue ACP. Delays could occur throughout the project; however, in the context of vehicles entering and leaving Fort Greely on a daily basis, heavy truck traffic generated by the Proposed Action Alternative would represent a small increase and would remain within the capacity of the on-post road network, and not inconsistent with recent construction activities.

Outside Fort Greely, heavy truck traffic associated with the Proposed Action Alternative would primarily adhere to major roads and highways with sufficient capacity to handle these types of vehicles. Although truck traffic could be more noticeable in smaller communities with lower AADT volumes, it would represent a small proportion of all traffic. Truck traffic would have a negligible contribution to existing commercial truck traffic volumes in areas such as North Pole, Fairbanks, and Anchorage that have larger populations and higher traffic volumes. It is unlikely that truck traffic associated with the Proposed Action would measurably contribute to traffic congestion or delays on the Richardson Highway or Glenn Highway. While increased traffic volumes generated by the Proposed Action would be adverse, they would be distributed over approximately 4 years

(2023-2026), variable, temporary, and consistent with truck traffic from similar types of construction and demolition projects in on-post and off-post areas. Therefore, short-term adverse impacts on on-post and off-post traffic and roads from heavy trucks would be less than significant.

Traffic generated by the Proposed Action—particularly heavy truck traffic—would have the potential to damage Fort Greely road surfaces and shoulders. In general, this damage would remain minor (e.g., potholes, crumbled shoulders) and be within the capacity of Fort Greely’s road maintenance contractor to repair quickly and efficiently. USACE would coordinate with Fort Greely Directorate of Public Works (DPW) to identify and repair on-post road damage caused by decommissioning-related traffic in a timely manner. Therefore, the Proposed Action Alternative would have temporary, less-than-significant impacts on the road network at Fort Greely. Following completion of the Proposed Action, no new traffic would be generated by the former SM-1A site. On-post and off-post traffic conditions would be similar to existing conditions. There would be no long-term impacts on roads and traffic.

It is anticipated that the majority of waste shipments from Fort Greely would remain below the State of Alaska’s overweight transportation thresholds provided in **Section 3.7.2.2**. An exception could be the RPV, which is the most radioactive item remaining at SM-1A. The RPV would require shipment in a custom-fabricated container in accordance with 10 CFR 71 to provide the necessary radiation shielding and meet applicable external dose rate requirements. The combined weight of the RPV and its shipping container (not including the weight of the transport vehicle) would likely be approximately 60,000 to 80,000 pounds. USACE and its decommissioning contractor would coordinate overweight and/or oversize load permits. In addition, they would obtain and adhere to the requirements of necessary state authorizations once the disposal site and transport routes are determined. The need for escort vehicles and/or additional security or public notification requirements would be assessed and implemented for waste shipments throughout the Proposed Action Alternative as applicable. Therefore, short-term impacts from the transport of oversize and/or overweight loads would be less than significant.

Containers with radioactive waste and/or nonradioactive regulated solid waste destined for disposal in the contiguous 48 states would be trucked from Fort Greely to Fairbanks and temporarily staged. From Fairbanks, waste containers would be transported along existing rail lines by the ARRC to the Port of Whittier or Port of Alaska for outbound shipping via vessel. Shipment of the waste containers would be primarily distributed over approximately 4 years (2023 to 2026) rather than occurring all at once; as such, shipments would remain within the capacity of the ARRC. Therefore, there would be no short-term adverse impacts on the capacity or operation of the ARRC.

Radioactive Waste Transportation

All radioactive waste generated by the Proposed Action Alternative would be packaged in accordance with applicable regulatory requirements established by USNRC and USDOT (including the IMDG Code). Radioactive waste packages would be transported by trained and qualified contractors to local or regional truck-to-rail transfer locations for shipping to the ultimate disposal facility in the contiguous 48 states.

The transport of any commodity involves a potential for risk to transportation personnel as well as the general public. Such risk is primarily associated with transportation-related accidents (e.g., injuries or fatalities from vehicle crashes), regardless of the cargo. The transport of certain materials, such as radioactive waste, can pose an additional risk due to the unique nature of the material itself (e.g., exposure to radiation emitted from a shipping container).

The contents of shipping packages containing radioactive materials must be contained and shielded during normal transport conditions in accordance with applicable USNRC and USDOT regulations (10 CFR 71; 49 CFR Subchapter C). Packages containing radioactive waste have the potential to emit radiation even when properly shielded. Therefore, individuals encountering shipments of radioactive waste generated by the Proposed Action Alternative would have the potential to be exposed to radiation exceeding naturally occurring background radiation levels. These individuals could include transportation workers (e.g., drivers, cargo handlers), residents living along the transport route, and other individuals who may come in proximity to the package during transport. Such exposure—depending on duration and intensity—could increase the risk of associated health problems, including cancer.

The GEIS on Decommissioning of Nuclear Facilities, Supplement 1 (NUREG-0586) (USNRC 2002) determined that the potential impacts from transportation activities associated with the decommissioning of much larger nuclear facilities are neither detectable nor destabilizing when conducted in compliance with applicable regulations (USNRC 2002). Similarly, the *Final Environmental Statement on the Transportation of Radioactive Material by Air and Other Modes* (NUREG-0170) (USNRC 1977) determined that risks to workers and the general public from radioactive material during transport are low when such material is packaged in accordance with applicable regulatory requirements. The transportation of radioactive waste generated by the Proposed Action Alternative would occur in a manner consistent with that analyzed by USNRC. As such, short-term, adverse impacts on public and worker health from the transport of radioactive waste other waste from the SM-1A site during the Proposed Action Alternative would be less than significant.

No radioactive waste would be generated on the SM-1A site following completion of the Proposed Action Alternative. Therefore, there would be no long-term impacts from radioactive waste transportation.

3.7.3.3 Marine Ports and Shipping

Packaged waste generated by the Proposed Action Alternative would be loaded onto vessels at the Port of Alaska or Port of Whittier using existing facilities and capabilities. The waste would then be transported to one or more receiving ports along the West Coast of the contiguous 48 states (likely Seattle, Washington). Waste would be packaged in accordance with applicable regulatory requirements established by USNRC, USDOT (including the IMDG Code), USEPA, and the State of Alaska. The vessels would be operated by licensed commercial companies in accordance with applicable USDOT and U.S. Coast Guard operational and safety requirements. The vessels would follow established inshore navigation routes, which would avoid sensitive environmental resources or areas (e.g., critical habitat for federally listed species, marine sanctuaries,

and fisheries). The specific vessel operators that would be used to transport the packaged waste would be identified and selected by USACE and its decommissioning contractor as project planning continues. Following arrival at the receiving port(s), the packaged waste would be transported via truck and/or train along established routes for ultimate disposal at one or more permitted facilities in the contiguous 48 states (**Section 2.2**).

Short-term impacts from the handling and transport by vessel of waste associated with the Proposed Action Alternative would be less than significant. The number of containers that would be shipped by the Proposed Action Alternative and transported to the contiguous 48 states by vessel would be minimal in the context of the cargo volume routinely handled by the Port of Alaska and Port of Whittier, the capacity of the receiving ports, and of representative vessels that serve those ports. Radioactive waste containers would be shipped in accordance with USDOT (including the IMDG Code) regulations that limit radiation exposure to the public during transport. The transportation of radioactive and other waste generated by the Proposed Action Alternative would occur in a manner consistent with that analyzed by USNRC, and impacts would not exceed those analyzed by the USNRC in the *Final Environmental Statement on the Transportation of Radioactive Material by Air and Other Modes* (NUREG-0170) (USNRC 1977) (**Section 1.8.1**).

The transport of radioactive waste and nonradioactive regulated solid waste by vessel would cease upon the completion of the proposed decommissioning activities. Therefore, the Proposed Action Alternative would have no long-term impacts from waste transportation by vessel.

3.7.4 Transportation BMPs

USACE and/or the decommissioning contractor would implement the following BMPs during the Proposed Action Alternative to prevent or minimize adverse impacts on the on- and off-post transportation network and from the transportation of waste in the ROI:

- Use trained and qualified contractors to transport waste in accordance with applicable federal and state regulatory requirements for disposal at permitted on-post and/or off-post facilities
- Implement a transportation management plan that identifies approved on-post travel routes to and from the SM-1A site for heavy trucks transporting materials, equipment, and waste
- Schedule decommissioning-related traffic (particularly heavy truck traffic) for off-peak hours when feasible and in coordination with Fort Greely and other affected organizations
- Package and ship all radioactive and nonradioactive waste in accordance with the Waste Transportation and Disposal Plan, as well as applicable regulatory and permit requirements established by USNRC, USDOT (including the IMDG Code), USEPA, the State of Alaska, and other agencies

3.8 Utilities

This section describes utility systems with regard to the Proposed Action. Utility systems include generation and distribution infrastructure for potable water, sanitary sewer and other wastewater, electricity, and data/communications. The ROI for utilities consists of utility systems and facilities on Fort Greely that would potentially be affected by the Proposed Action.

3.8.1 Regulatory Setting

A summary of regulations and guidance applicable to utility systems on DOD installations is provided in **Table 3.8-1**. Generally, the effective execution and support of the military mission on DOD installations such as Fort Greely is dependent on preventing disruptions to the utility generation and distribution networks serving the installation or minimizing such disruptions to the extent practicable.

Table 3.8-1: Regulations and Guidance Applicable to Utilities

Regulation/Guidance ¹	Description
Federal	
CWA (33 USC 1251 et seq.)	Establishes policies to ensure that drinking water is safe; to restore and maintain oceans, watersheds, and their aquatic ecosystems; to protect human health, support economic and recreational activities; and provide healthy habitat for fish, plants, and wildlife.
SDWA (42 USC 6901 et seq.)	Authorizes USEPA to set national health-based standards for drinking water to protect against both naturally occurring and human-made contaminants that may be found in drinking water.
DOD / U.S. Army / Fort Greely	
AR 420-1, <i>Army Facilities Management</i>	Describes the management of public works activities, housing, and other facilities operations and management, including utilities services. Also contains the Army Energy and Water Management Program.
UFC 3-201-01, <i>Civil Engineering</i>	Provides civil engineering requirements for all new and renovated government facilities for the DOD.
UFC 3-230-02, <i>Operation and Maintenance: Water Supply Systems</i>	Provides technical guidance for operating and maintaining potable water systems at fixed military installations.
UFC 3-430-02FA, <i>Central Steam Boiler Plants</i>	Offers guidance for the design of central steam plants for Army installations.
UFC 3-430-08N, <i>Central Heating Plants</i>	Presents the criteria used to govern the design of steam heating plants to ensure these plants operate in the most economical and environmentally manner possible.
UFC 3-430-09, <i>Exterior Mechanical Utility Distribution</i>	Provides criteria for the design of exterior distribution piping systems for various utility systems, including steam supply, chilled water, and cooling or condensing water.
UFC 3-501-01, <i>Electrical Engineering</i>	Provides the minimum electrical design requirements for all electrical work on all DOD installations, including upgrades and modifications to existing systems.
UFC 3-540-07, <i>Operation and Maintenance: Generators</i>	Provides guidance and standards for operating and maintaining standby, emergency, and prime power generators. Includes safety requirements, standard operating instructions, and test procedures.

Table 3.8-1: Regulations and Guidance Applicable to Utilities

Regulation/Guidance ¹	Description
UFC 3-550-01, <i>Exterior Electrical Power Distribution</i>	Describes policy and design standards related to electrical power and distribution systems. Serves as the minimum electrical design requirements for exterior electrical distribution systems.
UFC 3-550-07, <i>Operation and Maintenance: Exterior Power Distribution Systems</i>	Offers guidance for operations and maintenance of electrical power and distribution systems. Mandates that each installation establish a program for proper maintenance of its electrical distribution system.
UFC 3-560-01, <i>Operation and Maintenance: Electrical Safety</i>	Provides safety requirements and guidance for anyone working on or near electrical components.

Notes:

¹ This table includes the primary regulations and guidance that apply to this resource area; it is not meant to be comprehensive. Other regulatory requirements may also apply.

AR = Army Regulation

CWA = Clean Water Act

DOD = Department of Defense

SDWA = Safe Drinking Water Act

UFC = Unified Facilities Criteria

USC = United States Code

USEPA = United States Environmental Protection

Agency

3.8.2 Affected Environment

The SM-1A site is served by electrical, potable water and sewer, and data/communications systems that are part of Fort Greely’s overall utility network. Building 606 North contains communications equipment, electrical switchgear, battery charging stations, water softening systems, and backup treated boiler water associated with Fort Greely’s conventional utility systems. Building 606 South contains equipment and infrastructure associated with Fort Greely’s conventional utility system. Building J-5 is used for storage and is served with electrical power.

Electrical power, heating steam, and potable water produced at Building 606 North and Building 606 South are conveyed to other facilities on Fort Greely via aboveground and underground distribution networks (i.e., “utilidors”). Components of these aboveground and underground distribution networks are present on and under the SM-1A site.

From 1962 to 1968, treated reactor cooling water from SM-1A was discharged to Jarvis Creek in accordance with applicable licensing requirements that were in effect at that time. After 1968, treated reactor cooling water was discharged to Recharge Well No. 13 until SM-1A’s deactivation in 1972. Reactor cooling water discharge infrastructure outside the SM-1A perimeter fence was removed between 1997 and 1999 and documented in a Record of Decision (USACE 2009). No further decommissioning activities are required in the Jarvis Creek area. An approximately 40-foot segment of abandoned piping associated with SM-1A’s original discharge system underlies the SM-1A site inside the fenced perimeter. Groundwater wells associated with SM-1A are described in **Section 3.3**.

3.8.3 Environmental Consequences

This section describes the potential impacts on utilities in the ROI from the No Action Alternative and Proposed Action Alternative. Significance thresholds used for this analysis are provided in **Table 3.8-2**.

Table 3.8-2: Utilities Impact Significance Thresholds

Impact Significance Threshold	Impact Significance Threshold Definition
Less-than-significant adverse impact	The alternative could result in temporary utility service disruptions or shutoffs in the ROI during the relocation or removal of utility infrastructure on the SM-1A site. However, any disruptions would be planned and coordinated with potentially affected facilities and utility services would resume at previous capacity in a timely manner. There would be no long-term impacts on utility systems in the ROI.
Potentially significant adverse impact	The alternative could result in temporary or permanent utility service disruptions or shutoffs at Fort Greely during the relocation or removal of utility infrastructure on the SM-1A site. These disruptions cannot be planned or foreseen and would result in the disruption of operations at affected facilities. Utility services may not be restored in a timely manner or at previous capacity, resulting in a long-term adverse impact.

Notes:

ROI = region of influence

3.8.3.1 No Action Alternative

Under the No Action Alternative, SM-1A would continue to be maintained by USACE in a SAFSTOR condition. Current conditions would continue and there would be no impacts on utilities in the ROI.

3.8.3.2 Proposed Action

Prior to implementation of the Proposed Action Alternative, UP contractor operations, including personnel, materials, and equipment, would relocate from Building 606 North to Building 606 South, the temporary modular facility, and the permanent addition to Building 606 South. In addition, aboveground and underground utility infrastructure associated with Building 606 North would be identified, disconnected, removed, relocated, or rerouted as necessary. These activities would ensure continuity of service to other facilities on Fort Greely, while preventing or minimizing health and safety risks to decommissioning workers and providing the necessary utility services to support decommissioning activities. It is anticipated that these activities would occur prior to the implementation of Phase 1 of the Proposed Action Alternative (**Section 2.2; Table 2.2-1**).

These activities would be planned and sequenced to avoid utility service disruptions to other facilities on Fort Greely that are served by systems in Building 606 North and Building 606 South. Once the Proposed Action Alternative has been implemented (i.e., Phase 1 and subsequent phases), temporary utility service disruptions to facilities outside the SM-1A site would be unlikely to occur. The removal of inactive or abandoned utility infrastructure underlying the SM-1A site would have no effect on utility systems or service at Fort Greely.

Following completion of the Proposed Action Alternative, utility systems and services at Fort Greely would be similar to existing conditions. There would be no degradation of utility systems, services, or capacity on the installation.

For these reasons, short-term adverse impacts on utilities from the Proposed Action Alternative would be less than significant. There would be no long-term impacts.

3.8.4 Utilities BMPs

The following BMPs would be implemented to prevent or minimize impacts on utilities from the Proposed Action Alternative:

- USACE would coordinate with potentially affected facilities regarding temporary planned utility service shutoffs or disruptions to prevent or minimize impacts on their operations.
- Temporary planned utility service shutoffs or disruptions would be sequenced or staggered to the extent practicable.

3.9 Soils

This section provides an overview of existing soil conditions and the regulatory setting pertaining to soil resources in the ROI. The ROI for this analysis consists of soils within the fenced perimeter of the SM-1A site and soils adjacent to the concrete utility corridor, pipeline, and Supply Well No. 11, Supply Well No. 12, and Recharge Well No. 13 associated with SM-1A (contaminated soils stockpiled in the Demineralizer Room [Section 2.2; Table 2.2-1] are not addressed in this section). For the purposes of this analysis, soils are defined as unconsolidated particulates, organic matter, and material overlying the surface topography.

3.9.1 Regulatory Setting

A summary of regulations and guidance that are applicable to the Proposed Action and soil resources in the ROI is provided in Table 3.9-1.

Table 3.9-1: Regulations and Guidance Applicable to Soil Resources

Guidance/Regulation ¹	Description
Federal	
Farmland Protection Policy Act (7 USC 4201 et seq.)	Establishes regulations and requirements to prevent or minimize the unnecessary and irreversible conversion of farmland to nonagricultural uses.
CWA Section 402(p)	Regulates municipal and industrial stormwater discharges from nonpoint source discharges, including soil erosion, under the NPDES program.

Notes:

¹ This table includes the primary regulations and guidance that apply to this resource area; it is not meant to be comprehensive. Other regulatory requirements may also apply.

CWA = Clean Water Act

NPDES = National Pollutant Discharge Elimination System

USC = United States Code

3.9.2 Affected Environment

Soils in the ROI were derived from periods of glaciation and mountain building; soil parent material is primarily loess deposited over alluvium (NRCS 2005; USDA 2020). Soils at Fort Greely primarily consist of Nenana-Urban Land Complex and Nenana silt loam with relatively low erosional potential (USDA 2020). Soils tend to be flat (i.e., slopes from 0 to 3 percent) and well-drained. A typical soil profile in Fort Greely may consist of roughly 0 to 2 inches of moderately decomposed plant material overlain on silt loam and gravely silt loam and sand (USDA 2020). Permafrost is known to exist in the surrounding area

and in Fort Greely. Frozen ground has been measured to a maximum depth of 217 feet bgs (USAG Alaska 2020b; Williams 1970).

Nenana silt loam soils are designated as soils of local importance in the Fairbanks Soil and Water Conservation District and the Greater Fairbanks, Tochaket, North Star, Fort Wainwright, and Greater Nenana soil survey areas (NRCS 2021). However, their location in Fort Greely constitutes an irreversible commitment to a nonagricultural land use. This precludes the formal designation of these land areas as federally or state-protected farmland.

Residual radioactive and nonradioactive contaminants are present in surface and subsurface soils adjacent to buildings and structures associated with SM-1A, including Building 606 North, Building J-5, and the utility corridor and pipeline associated with Supply Well No. 11, Supply Well No. 12, and Recharge Well No. 13. Nonradioactive contaminants not connected to SM-1A’s operation primarily consist of petroleum residues from accidental spills or leaks that have previously occurred within SM-1A’s fenced perimeter. Contaminated soils are further described in **Section 3.10**.

Structural concrete associated with Building 606 North and the VC extends to a depth of approximately 19 feet bgs. Soils underlying these structures are inaccessible and have not been sampled; however, they are suspected to be radiologically contaminated.

3.9.3 Environmental Consequences

This section describes the potential impacts on soil resources in the ROI from the No Action Alternative and Proposed Action Alternative. Impact significance thresholds used for this analysis are provided in **Table 3.9-2**.

Table 3.9-2: Soil Resources Impact Significance Thresholds

Impact Significance Threshold	Impact Significance Threshold Definition
Less-than-significant adverse impact	The alternative would have temporary or permanent impacts on soil resources from disturbance, excavation, backfilling, compaction, or similar activities. Such impacts could be avoided, compensated for, or minimized through adherence to applicable permitting requirements, BMPs, and other minimization or protection measures.
Potentially significant adverse impact	The alternative would have permanent impacts on soil resources from disturbance, excavation, backfilling, compaction, or similar activities. Such impacts could not be avoided, compensated for, or minimized through adherence to applicable permitting requirements, BMPs, or other minimization or protection measures; and/or would permanently prohibit the use of all or portions of soil resources in the vicinity of the SM-1A site.

Notes:

BMP = best management practice(s)

3.9.3.1 No Action Alternative

Under the No Action Alternative, SM-1A would continue to be maintained by USACE in a SAFSTOR condition. Low-level radioactive and nonradioactive contaminants associated with SM-1A would remain in soils on the site. While this would represent a long-term adverse effect, continued monitoring and management of these contaminants would ensure that the effect would remain less than significant.

3.9.3.2 Proposed Action Alternative

Impacts on soil resources from the Proposed Action Alternative would primarily result from excavation to dismantle and remove the primary components of SM-1A: Building 606 North, the VC, Building J-5, and their associated sub-grade foundational components; and the concrete utility corridor and pipeline associated with Supply Well No. 11, Supply Well No. 12, and Recharge Well No. 13. Approximately 1,687 cubic yards of soils (**Table 2.2-2**) would be excavated and removed during the Proposed Action Alternative. Soils would likely be over-excavated while removing clean cover soils and sub-grade structural materials (e.g., concrete building slabs and foundations) to maintain proper excavation safety, and dependent on safety protocols that are enacted (e.g., benching, structural reinforcement of excavation sides). Therefore, excavation depths and volumes may vary based on the structure and contamination depth and dependent on safety protocols that are implemented (e.g., benching, structurally reinforcing the sides of excavations). Waste soil would be characterized and segregated at the point of excavation; it is currently anticipated that all contaminated soil excavated during the Proposed Action Alternative would require disposal as either radioactive waste or nonradioactive regulated solid waste at permitted facilities in the contiguous 48 states. Waste soil would be packaged accordingly and transported from Fort Greely by trained and qualified contractors. If feasible, noncontaminated soil would be stockpiled, verified as nonradiologically and nonchemically impacted, and used as backfill when acceptable.

Facility dismantlement and soil excavation would have some potential for temporary, localized adverse impacts on soil resources, such as an increased potential for erosion and sedimentation. Erosion and sedimentation of exposed soils would be minimized to the extent practicable through adherence to a project- and site-specific SWPPP that would be prepared by the decommissioning contractor and adhered to throughout the duration of the Proposed Action Alternative (as a condition of coverage under the CGP; **Section 3.4**). Therefore, short-term adverse impacts on soils from the Proposed Action Alternative would be less than significant.

Following the removal of the primary SM-1A structures and components, an FSS would be conducted on the site to ensure remaining soils meet the unrestricted release criteria. Once achievement of the release criteria has been confirmed by an independent verification contractor, excavated areas of the SM-1A site would be backfilled with clean fill soils meeting applicable Fort Greely requirements, graded, and compacted to achieve positive drainage. It is anticipated that a greater volume of clean soil would be required for backfilling and restoration than the amount of waste soils excavated during the Proposed Action Alternative. Backfilled soil would be locally sourced from Fort Greely and/or off-post areas and would meet applicable Fort Greely requirements for clean fill soil. Following backfill and grading, the site would be seeded with native grasses to prevent soil erosion.

There would be no long-term impacts on soils at the former SM-1A site following completion of the Proposed Action Alternative. The removal and disposal of impacted soils and restoration of the site with clean fill soils would have a beneficial effect on soils in the ROI.

3.9.4 Soil Resources BMPs

The following BMPs would be implemented during the Proposed Action Alternative to prevent or minimize adverse impacts on soil resources in the ROI:

- The decommissioning contractor would prepare and adhere to a project- and site-specific SWPPP as a condition of coverage under the CGP. Adherence to the SWPPP would manage the quantity and quality of stormwater discharged from the SM-1A site, prevent or minimize the migration of temporarily disturbed or stockpiled soils, and the corresponding sedimentation of receiving waterbodies.
- Soils excavated from the SM-1A site would be replaced with clean fill soils meeting applicable Fort Greely requirements.
- An environmental monitoring plan would be implemented and soil sampling would be conducted to support release of the site.
- An FSS would be conducted following the removal of the primary SM-1A structures and components to ensure remaining soils meet the unrestricted release criteria.
- Following backfill and grading, the site would be seeded with native grasses to prevent soil erosion.

3.10 Waste

This section describes radioactive and non-radioactive waste that would be generated by the Proposed Action, the ROI consists of buildings and infrastructure associated with SM-1A (**Table 1.2-1**), and applicable on- and off-post waste disposal facilities.

3.10.1 Regulatory Setting

Regulations and guidance that are applicable to waste as it relates to the Proposed Action Alternative are provided in **Table 3.10-1**.

Table 3.10-1: Regulations and Guidance Applicable to Waste

Regulation/Guidance ¹	Description
Federal	
RCRA (42 USC 6901 et seq.; 40 CFR 260-268 and 270)	Establishes “cradle-to-grave” requirements for hazardous waste from its generation through transportation, treatment, storage, and disposal. RCRA Subtitle C regulations establish criteria for hazardous waste generators; transporters; and treatment, storage and disposal facilities, including permitting requirements, enforcement, and corrective action or cleanup. RCRA Subtitle D regulations ban open dumping of waste and set minimum federal criteria for the operation of municipal waste and industrial waste landfills.
Toxic Substances Control Act of 1978 (15 USC 2601 et seq.; 40 CFR Subchapter R)	Authorizes USEPA to regulate the manufacture, processing, distribution, use, and disposal of certain chemicals and mixtures to protect human health and the environment.
USEPA Asbestos Regulations (40 CFR 61, Subpart M; 40 CFR 763)	Regulations governing the use and emissions of asbestos.

Table 3.10-1: Regulations and Guidance Applicable to Waste

Regulation/Guidance¹	Description
10 CFR 61, <i>Licensing Requirements for Land Disposal of Radioactive Waste</i>	Establishes procedures, criteria, and terms and conditions that the USNRC issues licenses for the disposal of radioactive wastes.
10 CFR 61.55, <i>Waste characterization</i> and 10 CFR 61.56, <i>Waste characteristics</i>	Regulates the classification, handling, and disposal of radioactive waste.
40 CFR 273, <i>Standards for Universal Waste Management</i>	Establishes regulations for the management and disposal of universal waste.
USDOT Hazardous Material Regulations (49 CFR Subchapter C)	Governs the transport of hazardous materials.
EO 13101, <i>Greening the Government through Waste Prevention, Recycling, and Federal Acquisition</i>	Strengthens and expands the federal government's commitment to recycling and buying recycled content and environmentally preferable products.
State of Alaska	
18 AAC 60, <i>Solid Waste Management</i>	Regulates solid waste management.
17 AAC 25.200, <i>Transportation of hazardous materials, hazardous substances, or hazardous waste</i>	Regulates the transport of hazardous materials (State of Alaska adopts USDOT regulations by reference, as described in 49 CFR Subchapter C with some exceptions).
AS 18.60.450, <i>Asbestos</i>	Regulates asbestos-containing material to prevent release of asbestos fibers to the air or to surface water; regulates disposal to an approved landfill.
18 AAC 60.240, <i>Procedures to exclude receipt of hazardous waste</i>	Prohibits landfills from accepting PCB waste as defined in 40 CFR 761.3. Wastes with PCB concentrations >1 ppm are currently not accepted at any landfill in Alaska.
18 AAC 75, <i>Oil and Other Hazardous Substances Pollution Control</i>	Establishes requirements for the prevention, reporting, management, and cleanup of accidental spills of petroleum products.
DOD / U.S. Army / Fort Greely	
AR 200-1, <i>Environmental Protection and Enhancement</i>	Implements federal, state, and local environmental laws and DOD policies for preserving, protecting, conserving, and restoring the quality of the environment.
EM 1110-35-1, <i>Management Guidelines for Working with Radioactive and Mixed Waste</i>	Contains planning and management guidelines to be used for USACE work with radioactive waste, either alone or combined with hazardous or toxic components. Primarily describes regulatory and management responsibilities and their relation to the Technical Project Planning process and the Project Management Business Process applied to USACE activities at radioactive waste sites.
USACE SM-1A Reactor Facility WMDP	Establishes procedures for the safe management, handling, storage, transportation, and disposal or recycling of the various forms of waste that would be generated during the Proposed Action.
Fort Greely Integrated Solid Waste Management Plan	Examines the solid waste management parameters at Fort Greely Alaska; presents the operating scenarios that are available; considers the pollution prevention hierarchy of waste elimination/minimization, recycling, and disposal to select solid waste management schemes that are practical, compliant with regulatory requirements, and cost-effective.

Table 3.10-1: Regulations and Guidance Applicable to Waste

Regulation/Guidance ¹	Description
Fort Greely Environmental Procedure, Chapter 2: Hazardous Materials and Hazardous Waste Management Procedure	Defines appropriate practices for transporting, storing, and dispensing hazardous materials, as well as collecting any resulting waste in a safe and controlled manner in accordance with applicable U.S. Army, installation, and state and federal requirements.
Fort Greely Spill Notification and Response	Implements spill notification and response actions at Fort Greely.

Notes:

¹ This table includes the primary regulations and guidance that apply to this resource area; it is not meant to be comprehensive. Other regulatory requirements may also apply.

AAC = Alaska Administrative Code

AR = Army Regulation

AS = Alaska Statute

CFR = Code of Federal Regulations

DOD = Department of Transportation

EM = Engineer Manual

EO = Executive Order

PCB = polychlorinated biphenyl

ppm = parts per million

RCRA = Resource Conservation and Recovery Act

USACE = United States Army Corps of Engineers

USC = United States Code

USDOT = United States Department of Transportation

USEPA = United States Environmental Protection Agency

USNRC = United States Nuclear Regulatory

Commission

WMDP = Waste Management and Disposal Plan

3.10.2 Affected Environment

3.10.2.1 Nonradioactive Regulated Materials and Solid Waste

For the purposes of discussion and analysis in this EA, nonradioactive regulated materials and solid waste consist of materials and waste as defined in the federal statutes and regulations summarized below.

Hazardous materials are defined in the regulations of the USDOT Pipeline and Hazardous Materials Safety Administration (49 CFR 171.8) as “hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions” in 49 CFR 173.

Hazardous wastes are defined by RCRA in 42 USC 6903(5) (as amended by the Hazardous and Solid Waste Amendments) as:

a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (a) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

Universal wastes are a class of RCRA-regulated waste that are managed under regulations in 40 CFR 273. Universal wastes include batteries, fluorescent tubes, some electronic devices, pesticides, and other common items such as aerosol cans that may contain mercury, lead, cadmium, copper, and other hazardous substances or characteristics.

To protect human health and the environment, TSCA authorizes USEPA to regulate the manufacture, processing, distribution, use, and disposal of certain chemicals and mixtures. Materials commonly regulated by TSCA include ACM and PCBs. In waste form, these materials are not regulated under RCRA; therefore, these materials are not hazardous wastes by definition. TSCA wastes are regulated by USEPA under 40 CFR, Subchapter R (Parts 700 through 799).

Nonradioactive regulated materials and solid waste documented at SM-1A include those regulated under TSCA (e.g., ACM, PCBs), RCRA (e.g., LBP, lead bricks and sheets used as shielding), universal wastes, and polluted soils (regulated under ADEC). Locations and types of nonradioactive regulated materials and solid waste that have been documented at SM-1A are provided in **Table 3.10-2**.

Table 3.10-2: Existing Nonradioactive Regulated Materials and Solid Waste at SM-1A

Material/Substance ¹	Location ¹	Source ¹
Asbestos (friable)	Building 606 North, Deaerator, exhaust stack	Primarily thermal system insulation, including cementitious, white pipe and boiler insulation, stack insulations, and turbine insulation
Asbestos (nonfriable)	Building 606 North and Building J-5	Sealants and caulking compounds; window glazing; and transite and gypsum wallboards
Lead	Building 606 North, including waste tanks pit, fuel vault, VC, pipes; and surrounding soils	Lead shielding; lead acid batteries; lead-based paints; lead pipe and solder
PCBs	Building 606 North and the steam turbine generator	Paints; oils; caulking; and light ballasts
Mercury	Building 606 North, Building 606 North exterior, and Building J-5	Mercury vapor lighting; fluorescent bulbs; switches and thermostats

Notes:

¹ Information provided in this table is not comprehensive. Nonradioactive regulated materials and solid waste may be identified in other locations at SM-1A as decommissioning planning continues.

PCB = polychlorinated biphenyl

VC = Vapor Container

Source: USACE 2014

There are no disposal options for RCRA waste and most TSCA waste in Alaska; these wastes must be transported out of state for treatment and/or disposal at appropriately permitted facilities (**Section 2.2**). However, certain types of nonradioactive ACM may be disposed of in Alaska landfills that meet applicable permit requirements. Each landfill determines its own acceptance policy. The disposal of ACM in Alaska is regulated by ADEC. Facilities being considered by USACE for the disposal of nonradioactive ACM generated by the Proposed Action include:

- Fort Greely C&D Landfill
- Delta Junction Landfill, approximately 4.4 miles (in a direct line) southwest of the SM-1A site
- Fairbanks North Star Borough Class I Landfill, approximately 83 miles northwest of Fort Greely

The locations of the Fort Greely C&D landfill and Delta Junction Landfill are shown in **Figure 3.10-1**.

Some soils on the SM-1A site are contaminated with petroleum residues from accidental spills that have previously occurred on the site (not connected to SM-1A's operation). These spills were unrelated to the reactor's operation. Petroleum-contaminated soils are suspected to primarily be present near or adjacent to the northern and southeastern sides of Building J-5; however, the volume and extent of these contaminated soils has not been determined at the current stage of planning.

3.10.2.2 Nonhazardous Solid Waste

Nonhazardous solid wastes include (USEPA 2014):

- Garbage (e.g., milk cartons and coffee grounds)
- Refuse (e.g., metal scrap, wall board, and empty containers)
- Other discarded materials resulting from industrial, commercial, and similar activities

MSW is a subset of solid waste and is defined as durable goods (e.g., appliances), nondurable goods (e.g., newspapers, books, magazines), containers and packaging, and miscellaneous organic wastes from residential, commercial, and industrial nonprocess sources. C&D waste typically consists of inert materials such as lumber, metal, roofing, bricks, drywall, insulation, and concrete (U.S. Army 2017).

As addressed in this EA, nonhazardous solid waste includes MSW and C&D waste. Nonhazardous solid waste does not contain characteristics that are described in the definition of nonradioactive regulated solid waste provided in **Section 3.10.2.1**. Nonhazardous solid wastes can be disposed of in typical MSW and/or C&D waste landfills.

MSW and C&D waste generated on Fort Greely can be disposed of at the following on- and off-post facilities, as applicable:

- Fort Greely C&D Landfill (**Figure 3.10-1**): This 4.5-acre landfill is on Fort Greely (Landfill Road) and is permitted for the disposal of most C&D, inert materials, and nonregulated ACM (ADEC 2020a).
- Delta Junction Landfill (**Figure 3.10-1**): This landfill is in the city of Delta Junction and accepts MSW as well as C&D waste such as wood, sheet rock, metal, and glass materials. An application process is required. The 93-acre landfill is authorized to dispose of an annual average of less than 20 tons per day of domestic and commercial refuse, and also allows disposal of nonhazardous sewage sludge (ADEC 2019).
- Fairbanks North Star Borough Solid Waste Facility: This landfill is on the south side of Fairbanks and accepts C&D wastes and MSW, as well as recycling. Full capacity of the MSW disposal area and the C&D disposal area is anticipated to be met in 2054 and 2023, respectively (Fairbanks North Star Borough DPW 2020).

Other permitted off-post disposal facilities in areas near Fort Greely may also be considered for disposal or recycling of MSW and C&D waste generated during the Proposed Action.

3.10.2.3 Radioactive Waste and Mixed Waste

SM-1A's highly radioactive nuclear fuel was removed during initial deactivation activities conducted in 1972 and 1973 (**Section 1.2.2**). Radioactive materials and residual radioactive contamination remaining at SM-1A are present in the VC (e.g., reactor equipment such as the RPV, steam generator, pumps), the spent fuel pit, waste tanks pit, Demineralizer Room, concrete foundation slabs of Building 606 North and Building J-5, and soils underlying and adjacent to those buildings. Once removed, dismantled, or excavated, these radioactive materials and radiologically contaminated soils would be considered radioactive waste.

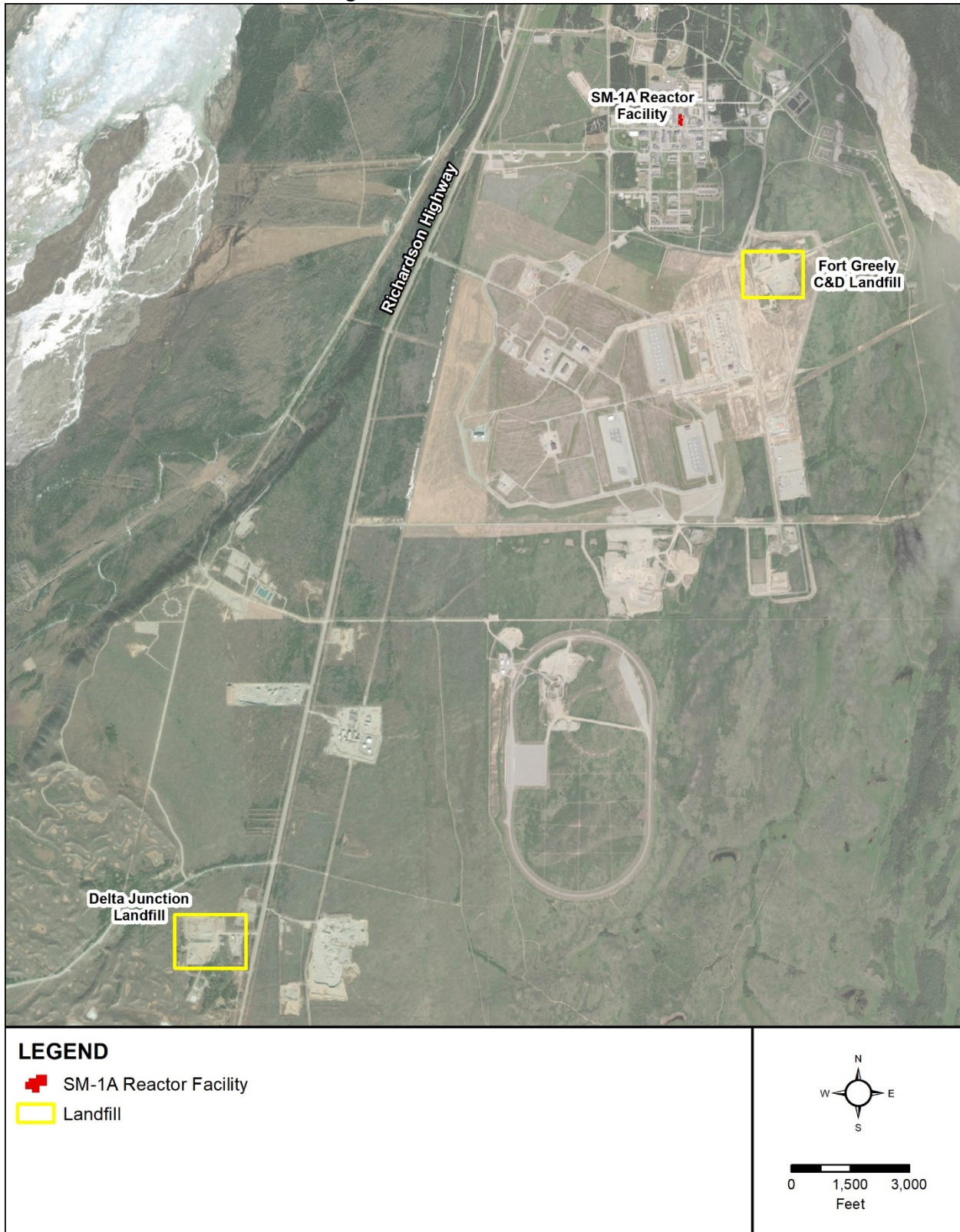
It is anticipated that radioactive waste generated by the Proposed Action would be classified as LLRW. LLRW is defined as radioactive waste not classified as high-level, spent fuel, transuranic, or byproduct material such as uranium mill tailings. LLRW is further classified as Class A, Class B, or Class C waste based on potential risks from long-term disposal (10 CFR 61.55, *Waste Classification*; 10 CFR 61.56, *Waste Characteristics*). Class A LLRW requires the fewest long-term considerations for disposal and Class C requires the most. Requirements for the management and disposal of LLRW are established by the USNRC. Radioactive waste may also be classified and managed in accordance with USDOE regulations and guidance as "low-level waste" as defined in USDOE Order 435.1.

LLRW generated during the Proposed Action would be anticipated to include the following:

- M&E (e.g., RPV and other reactor components in the VC, items encased in the spent fuel pit and waste tanks pit, steam turbine, deaerator)
- Structural materials (primarily concrete) from walls and/or floors/foundations of Building 606, the spent fuel pit, waste tanks pit, and VC
- The acrylamide grout-sand-soil mixture in the VC, spent fuel pit, and waste tanks pit
- Miscellaneous soils, debris, and equipment sealed in the Demineralizer Room
- Soils around Building 606 North and Building J-5

Mixed waste is defined as "a waste that contains both RCRA hazardous waste and source, special nuclear, or byproduct material subject to the Atomic Energy Act of 1954 as amended" (40 CFR 266.210). Mixed wastes may include radiologically contaminated soils that are also contaminated with petroleum contaminants or lead; radiologically contaminated lead shielding; or radiologically contaminated decontamination debris containing LBP residues. Waste regulated under TSCA (e.g., PCBs) that is also contaminated with radioactive material is managed as radioactive TSCA waste and disposed of in accordance with applicable regulatory requirements and the waste acceptance criteria of the disposal facility.

Figure 3.10-1: Landfill Locations



3.10.3 Environmental Consequences

This section describes the potential impacts from radioactive and nonradioactive waste under the No Action Alternative and Proposed Action Alternative. Impact significance thresholds used for this analysis are provided in **Table 3.10-3**.

Table 3.10-3: Waste Impact Significance Thresholds

Impact Significance Threshold	Impact Significance Threshold Definition
Less-than-significant adverse impact	The alternative would generate radioactive and nonradioactive waste; however, conditions or quantities of these wastes <i>would not exceed</i> USACE’s capacity to effectively manage and dispose of them.
Potentially significant adverse effect	The alternative would generate radioactive and nonradioactive waste such that conditions or quantities of these wastes <i>would exceed</i> USACE’s capacity to effectively manage and dispose of them.

Notes:
 USACE = United States Army Corps of Engineers

3.10.3.1 No Action Alternative

Under this alternative, USACE would continue to maintain and monitor SM-1A in a SAFSTOR condition. Radioactive materials and nonradioactive regulated materials associated with SM-1A would remain in buildings and structures on the site, resulting in an adverse impact. However, the continued monitoring and management of SM-1A in a SAFSTOR condition by USACE would ensure that adverse impacts from these materials remain less than significant.

3.10.3.2 Proposed Action Alternative

A summary of the estimated volumes of radioactive and nonradioactive waste that would be generated by the Proposed Action Alternative and the number of trucks or containers required to transport waste from the SM-1A site for disposal is provided in **Table 3.10-4**.

Table 3.10-4: Estimated Waste Volumes and Trucks/Containers Required for Shipment

Waste Type	Estimated Waste Volume ¹ (cubic yards)	Estimated Number of Trucks or Containers ¹
C&D waste	3,122	274
Radioactive Waste	2,979	254 ²
Nonradioactive Regulated Solid Waste	49	
Total	6,150	528
Excavated Soils ²	1,687	120

Notes:
¹ Waste volume and truck/container estimates are current as of April 2021.
² Already included in the estimated radioactive waste volume and corresponding number of trucks/containers but listed separately to provide additional detail.
 C&D = construction and demolition
 Source: USACE 2021b

C&D waste would represent approximately half of the waste generated during the Proposed Action Alternative (**Table 3.10-4**). Nonradioactive regulated solid waste (49 cubic yards) would compose less than 1 percent of the estimated waste. It is anticipated that most soils excavated on the SM-1A site during the Proposed Action would require disposal as radioactive waste and/or nonradioactive regulated solid waste at permitted facilities in the contiguous 48 states.

All waste would be segregated and characterized at the point of removal or excavation. Following characterization, radioactive waste and nonradioactive regulated solid waste would be immediately packaged on the SM-1A site (i.e., would not be stockpiled) and temporarily staged in accordance with applicable regulations at one or more areas on Fort Greely until ready for transport to the contiguous 48 states for disposal. Nonradioactive solid waste would be loaded into typical dump trucks or in end-dump roll-off containers, covered, and transported directly to on-post or off-post landfills or recycling facilities. Excavated soils determined to be contaminated with petroleum residues only (i.e., not radiologically contaminated) would be segregated; USACE would coordinate with Fort Greely and the State of Alaska regarding their treatment and/or disposal. Radioactive waste and nonradioactive regulated solid waste would be packaged for temporary staging and transport in accordance with applicable regulatory requirements established by USNRC, USDOT (including the IMDG Code), USEPA, and the State of Alaska; these wastes would ultimately be disposed of in permitted facilities in the contiguous 48 states. As applicable, all radioactive and nonradioactive wastes would be transported by trained and qualified contractors to permitted disposal facilities.

The estimated waste volumes presented above are based on previous site characterization surveys, professional knowledge and judgment of USACE and its consultants, the assumption that some waste volume reduction would be achieved through decontamination, and prior experience with similar decommissioning and dismantlement projects. Based on these estimates, it is expected that the volume of radioactive and nonradioactive waste generated during the Proposed Action Alternative would not exceed USACE's capacity to effectively manage and dispose of them. USACE and its decommissioning contractor would evaluate SM-1A waste streams throughout the Proposed Action Alternative for the safest and most effective disposal options available.

The dismantlement of buildings and infrastructure associated with SM-1A would result in short-term, less-than-significant adverse impacts from the generation radioactive and nonradioactive waste. The removal of radioactive waste and nonradioactive solid waste from SM-1A and their disposal at permitted off-post facilities would represent a beneficial effect in the long-term. Following the completion of the Proposed Action Alternative, no radioactive or nonradioactive wastes would be generated on the former SM-1A site; therefore, there would be no long-term adverse impacts.

3.10.4 Waste Management BMPs

USACE and/or the decommissioning contractor would implement the following BMPs to prevent or minimize potential impacts from waste generated during the Proposed Action Alternative:

- Prepare and adhere to a Hazardous Material Abatement Plan in accordance with Engineer Manual (EM) 385-1-1, *Safety and Health Requirements* to establish procedures for the management and disposition of nonradioactive regulated solid waste
- Implement a WMDP that would establish procedures and requirements for the safe characterization, management, handling, storage, transportation, and disposal or recycling of radioactive waste, nonradioactive regulated solid waste, and C&D waste to optimize safety and prevent or minimize risks to the extent practicable
- Manage and dispose of regulated solid waste in accordance with applicable requirements established by USEPA through its enforcement of RCRA, TSCA, and (where applicable) those established by ADEC
- Prepare and adhere to a project- and site-specific SPCC Plan to prevent or minimize the potential for accidental spills of petroleum products or other regulated materials from decommissioning-related vehicles and equipment; establish procedures for containing and cleaning up any spills that may occur.
- Provide spill containment and cleanup kits in conspicuous and accessible locations throughout the SM-1A site in accordance with the SPCC Plan for use in the event of an unintended release of regulated materials

3.11 Safety and Health

USACE is committed to creating a safe working environment to ensure that potential risks to the health and safety of the public, workers, Fort Greely personnel, and on-post residents are eliminated or minimized to the greatest extent practicable throughout the duration of the Proposed Action. A safe environment is one in which there is no—or an optimally reduced—potential for death, serious bodily injury or illness, or property damage. Occupational safety and health programs address the health and safety of people at work. These programs impose regulatory requirements for the benefit of employees and the public, including implementation of engineering and administrative practices that aim to reduce risks of illness, injury, death, and property damage.

This section addresses radiological and nonradiological (i.e., industrial) safety and health applicable to the Proposed Action. The ROI for this analysis is the SM-1A site, adjacent and nearby areas of Fort Greely (including on-post transportation routes and temporary waste staging area), and areas that could reasonably be considered to have a likely environmental pathway for radiological exposure or contamination.

3.11.1 Regulatory Setting

Federal regulatory requirements addressing worker safety, protection, and health are administered and enforced by the Occupational Safety and Health Administration (OSHA). OSHA establishes worker protection standards that must be followed to prevent and minimize potential safety and health risks. In Alaska, state and federal laws and regulations pertaining to worker health and safety are administered and enforced by the Alaska Occupational Safety and Health Section of the Department of Labor and Workforce Development Labor Standards and Safety Division. Occupational safety and health regulations address potential worker exposure to a range of chemical, physical,

and biological hazards and ergonomic stressors. These regulations are intended to control hazards by eliminating exposure via administrative or engineering controls, substitution, or use of personal protective equipment (PPE). EM 385-1-1 is the governing document for site safety on USACE project sites.

The Proposed Action is within the authorities granted to the DOD by the AEA. Specifically, Sections 91(b) and 110(b) of the AEA give DOD the authority to regulate radioactive materials at SM-1A. The Army’s policy set forth in AR 50-7 is to follow USNRC guidelines, as well as the recommendations of NCRP and ANSI. Policies and requirements set forth in DA-PAM 385-24 and EM 385-1-80, *Radiation Protection* are applicable to personnel and visitors at USACE work sites where radioactive material may be present.

A summary of regulations and guidance applicable to safety and health in relation to the Proposed Action is provided in **Table 3.11-1**.

Table 3.11-1: Regulations and Guidance Applicable to Safety and Health

Regulation/Guidance ¹	Description
Federal	
AEA Section 91(b) and Section 110(b)	Authorizes the DOD to possess special nuclear material for national defense purposes and excludes the DOD from licensing requirements for the manufacture, production, or acquisition of nuclear utilization facilities.
RCRA (42 USC 6901 et seq.; 40 CFR Parts 260-268 and 270)	Establishes training, safety, and emergency response requirements for the handling, management, and disposal of hazardous waste.
Toxic Substances Control Act of 1978 (15 USC 2601 et seq.; 40 CFR Subchapter R)	Establishes training, safety, and emergency response requirements for the handling, management, and disposal of specific chemicals, such as PCBs and asbestos.
10 CFR 20, <i>Standards for Protection against Radiation</i>	Regulates exposure to radiation to protect human safety and establishes federal guidelines and protection standards for any activities that are to be conducted under an USNRC-issued license.
10 CFR 37, <i>Physical Protection of Category 1 and 2 Quantities of Radioactive Material</i>	Regulates and mandates additional requirements for the physical protection and security of higher quantities of radioactive materials referred to in the regulation as Category 1 or 2 quantities.
29 CFR 1910, <i>Occupational Safety and Health Standards</i>	Primary federal regulation that governs day-to-day workplace, or “general industry,” safety and applies to the extent that specific standards of the agricultural, construction, and maritime industries do not apply.
29 CFR 1926, <i>Safety and Health Regulations for Construction</i>	Establishes safety and health requirements to protect workers engaged in construction-related activities.
49 CFR, <i>Transportation</i>	Establishes regulatory training requirements for transportation-related activities, including hazardous and radioactive materials and waste.
State of Alaska	
AS 18.60, <i>Safety</i>	Authorizes the Alaska Department of Labor and Workforce Development to establish programs to reduce the incidence of work-related accidents and health hazards in the state.
8 AAC 61, <i>Occupational Safety and Health</i>	Establishes occupational safety and health requirements for employers and workers in Alaska.
DOD/U.S. Army	
AR 50-7, <i>Army Reactor Program</i>	Establishes Department of the Army policy to follow guidelines established by USNRC regulations as well as the recommendations of the NCRP and ANSI.

Table 3.11-1: Regulations and Guidance Applicable to Safety and Health

Regulation/Guidance ¹	Description
Department of the Army Pamphlet 385-24, <i>Army Radiation Safety Program</i>	Establishes radiation safety procedures for activities, including decommissioning, for safe operations.
EM 385-1-80, <i>Radiation Protection</i>	Outlines Department of the Army policies and procedures for the handling of radioactive material and radiation generating devices at all USACE sites.
EM 385-1-1, <i>Safety and Health Requirements</i>	Prescribes safety and health requirements for all USACE activities and operations.

Notes:

¹ This table includes the primary regulations and guidance that apply to this resource area; it is not meant to be comprehensive. Other regulatory requirements may also apply.

AAC = Alaska Administrative Code

AEA = Atomic Energy Act

ANSI = American National Standards Institute

AR = Army Regulation

AS = Alaska Statute

CFR = Code of Federal Regulations

DOD = Department of Defense

EM = Engineer Manual

NCRP = National Council on Radiation Protection and Measurements

PCB = polychlorinated biphenyl

RCRA = Resource Conservation and Recovery Act

USACE = United States Army Corps of Engineers

USC = United States Code

USNRC = United States Nuclear Regulatory Commission

3.11.2 Affected Environment

3.11.2.1 Nonradiological Safety and Health

Health and safety hazards can often be identified and reduced or eliminated before an activity begins. Hazards at the SM-1A site could potentially occur from dismantlement, earthwork (e.g., excavation, filling, grading), decontamination, staging and loading, and confined space activities, as well as the creation of a noisy environment or fire hazards on or near the site. Any facility or human-use area with a potential explosive or rapid oxidation process would create unsafe environments for nearby populations. Noisy environments could also mask verbal or mechanical warning signals such as sirens, bells, or horns. The operation, maintenance, and repair of vehicles and equipment also present additional safety implications.

Physical, chemical, ergonomic, and biological hazards pose potential safety risks to workers involved in nuclear facility decommissioning activities. Examples of these hazards are described below. Based on current conditions at the SM-1A site as described in this EA and—to varying degrees—all of the following occupational hazards would be present or have potential to occur during the Proposed Action.

Unless otherwise noted, information in the following sections is drawn from the USNRC’s decommissioning GEIS (USNRC 2002).

Physical Hazards

Slips, trips, and falls are some of the most common types of physical occupational hazards. Such incidents can occur when walking surfaces are slippery or uneven, when climbing or working on stairs and ladders, or when a worker’s vision is obstructed due to dim lighting. Additional physical hazards could result from accidents involving vehicles and equipment; accidental ignition of flammable or combustible materials; excessive

noise conditions; adverse reactions to temperature (heat or cold); and/or exposure to electricity (e.g., burns, electrocution).

Worker exposure to noise is regulated by a legally enforceable permissible exposure limit (PEL) of 90 A-weighted decibels (dBA) over the course of an 8-hour day. This PEL is a time-weighted average, meaning that the average noise exposure experienced by a worker calculated over an 8-hour day cannot exceed 90 dBA. For comparison, a conversational human speaking voice is approximately 60 dBA heard from 3 feet away (CDC 2018; U.S. Department of Labor 2019). Many types of commonly used construction tools and equipment exceed 60 dBA when heard from 50 feet away, including air compressors (81 dBA), backhoes (80 dBA), bulldozers (85 dBA), and jackhammers (88 dBA) (FHWA 2006).

Chemical Hazards

Chemicals and nonradioactive regulated materials and solid waste (**Section 3.10**) on the SM-1A site would pose a potential hazard to workers through incidental or accidental inhalation, dermal contact, or ingestion. Solvents and particulates would also pose a risk to worker health. Chemicals and substances in and around Building 606 North could include ACM, PCBs, mercury, and the acrylamide grout mixture. In reactor facilities, these commonly occur in building materials, paints, light bulbs, light fixtures, switches, electrical components, and high-voltage cables. Other chemical hazards could include low levels of potassium, sodium chromate, and nickel, as well as quartz and cristobalite silica generated during concrete demolition. Fumes containing lead and arsenic, and smoke from flame cutting and welding, are also sources of chemical exposure during decommissioning.

Ergonomic Hazards

Ergonomic hazards can result from the physiological and psychological demands of decommissioning work. Common indicators of ergonomic stress include discomfort and fatigue. These conditions can result in decreased performance, decreased safety, and increased chance of injury. Sources of ergonomic stress during decommissioning activities could include mechanical vibrations, lifting, and static work.

Biological Hazards

Biological hazards include viruses, bacteria, fungus, wildlife, or any organism that could potentially have adverse effects on human or environmental health. Biological hazards that may be present at the site include mold, mosquitoes, and wildlife, including moose and bear. Moose are frequently observed at Fort Greely and could present potential hazards to human health and safety (e.g., vehicle collisions, charging individuals due to a perceived threat). Wildlife hazards to humans are minimized at the SM-1A site by the existing perimeter fence.

3.11.2.2 Radiological Safety and Health

Current Radiological Conditions

The location and magnitude of radiological contamination at SM-1A have been well-defined through previous characterization surveys. Materials containing low levels of residual contamination at SM-1A are primarily limited to areas that are restricted or otherwise inaccessible to personnel and visitors on the site, including the VC, spent fuel pit, concrete foundation slabs, and underlying soils (**Section 3.10**). UP contractor personnel have access to unrestricted areas of Building 606 North and Building J-5 to operate equipment and infrastructure associated with Fort Greely's utility systems. Generally, Building 606 North has remained occupied by government personnel and/or contractors operating Fort Greely's utility systems since SM-1A's deactivation in 1972 (**Section 1.2.1**; **Section 1.2.2**).

The possession of radioactive materials by USACE at SM-1A is authorized by Deactivated Reactor Facility Possession Permit Number SM1A-1-19, Amendment 1-20. This permit authorizes the possession of byproduct materials (produced as a result of former SM-1A operations) present at the SM-1A site and at other locations where facility equipment or materials were used. USACE conducts regular inspections and environmental monitoring of SM-1A in accordance with AR 50-7 and the possession permit to: ensure that exposure to residual radiation remains ALARA, but no more than 100 mrem per year to any member of the public; prevent unauthorized access to restricted (i.e., radiologically contaminated) areas; prevent activities that could result in the release of airborne radioactivity that exceeds applicable permit thresholds; and meet other permit requirements (ARO 2020).

Radionuclides of concern (ROCs) documented in exterior areas of the SM-1A site (i.e., outside Building 606 North and Building J-5) are provided in **Table 3.11-2**. ROCs documented inside Building 606 North and Building J-5 are provided in **Table 3.11-3**. Other ROCs that have not been detected in previous characterization efforts at SM-1A but are likely present in activated metal and/or concrete materials include: carbon-14, iron-55, nickel-59, molybdenum-93, and niobium-94. These activation ROCs are present from the integration of stable elements in metals and concrete with neutrons generated in the reactor core; they will be considered in characterizing activated waste materials during decommissioning and dismantlement activities.

Table 3.11-2: Radionuclides of Concern for Soil and Exterior Paved Surfaces at SM-1A

ROC	Half-Life (ICRP 2008)	Source
Cobalt-60 (⁶⁰ Co)	5.27 years	Activation
Strontium-90 (⁹⁰ Sr)	28.8 years	Fission
Cesium-137 (¹³⁷ Cs)	30.2 years	Fission
Plutonium-238 (²³⁸ Pu)	87.7 years	Fuel
Americium-241 (²⁴¹ Am)	432.2 years	Fuel

Table 3.11-2: Radionuclides of Concern for Soil and Exterior Paved Surfaces at SM-1A

ROC	Half-Life (ICRP 2008)	Source
ROPCs to Consider for Additional Characterization of Soil Below Buildings/Structures		
Tritium (³ H)	12.3 years	Activation/Fission
Technetium-99 (⁹⁹ Tc)	210,000 years	Fission

Notes:

pCi/g = picocuries per gram
 ICRP = International Commission on Radiological Protection
 ROC = Radionuclide of concern
 ROPC = Radionuclide of potential concern
 Source: USACE 2020a

Table 3.11-3: Building Surface and System Radionuclides of Concern

ROC	Half-Life (ICRP 2008)	Source	Interior Locations Detected
Tritium (³ H) ^a	12.3 years	Activation/Fission (HTD)	V
Cobalt-60 (⁶⁰ Co)	5.27 years	Activation	V D B J
Strontium-90 (⁹⁰ Sr)	28.8 years	Fission	V D B J
Niobium-94 (⁹⁴ Nb)	2.03E+04 years	Activation	V J
Technetium-99 (⁹⁹ Tc)	2.11E+05 years	Fission/Activation	J
Cesium-137 (¹³⁷ Cs)	30.2 years	Fission	V D B J
Europium-152 (¹⁵² Eu) ^b	13.5 years	Activation	J
Europium-154 (¹⁵⁴ Eu)	8.6 years	Activation	J
Plutonium-238 (²³⁸ Pu) ^c	87.7 years	Fuel	V D B J
Plutonium-239/240 (^{239/240} Pu)	2.41E+04 years/6,564 years	Fuel	V J
Americium-241 (²⁴¹ Am) ^c	432.2 years	Fuel	D J B

Notes:

^a Considered an ROC in uncharacterized areas such as the VC and the Demineralizer Room.
^b Not detected in samples but should be considered present when ¹⁵⁴Eu is detected.
^c Detected in exterior soils and also may be found in soils placed in encased areas or soil used during the mixing of the AM-9 grout.
 ICRP = International Commission on Radiological Protection
 HTD = Hard to detect low-energy beta emitter
 ROC = Radionuclide of concern
 Locations: V = VC, B = Building 606 North, D = Demineralizer Room, J = Building J-5
 Source: USACE 2020a

The MARSSIM provides guidance for demonstrating compliance with dose or risk-based regulations after site remediation or decommissioning. Three classes of potential contamination are established by the MARSSIM, as defined below (USNRC 2000):

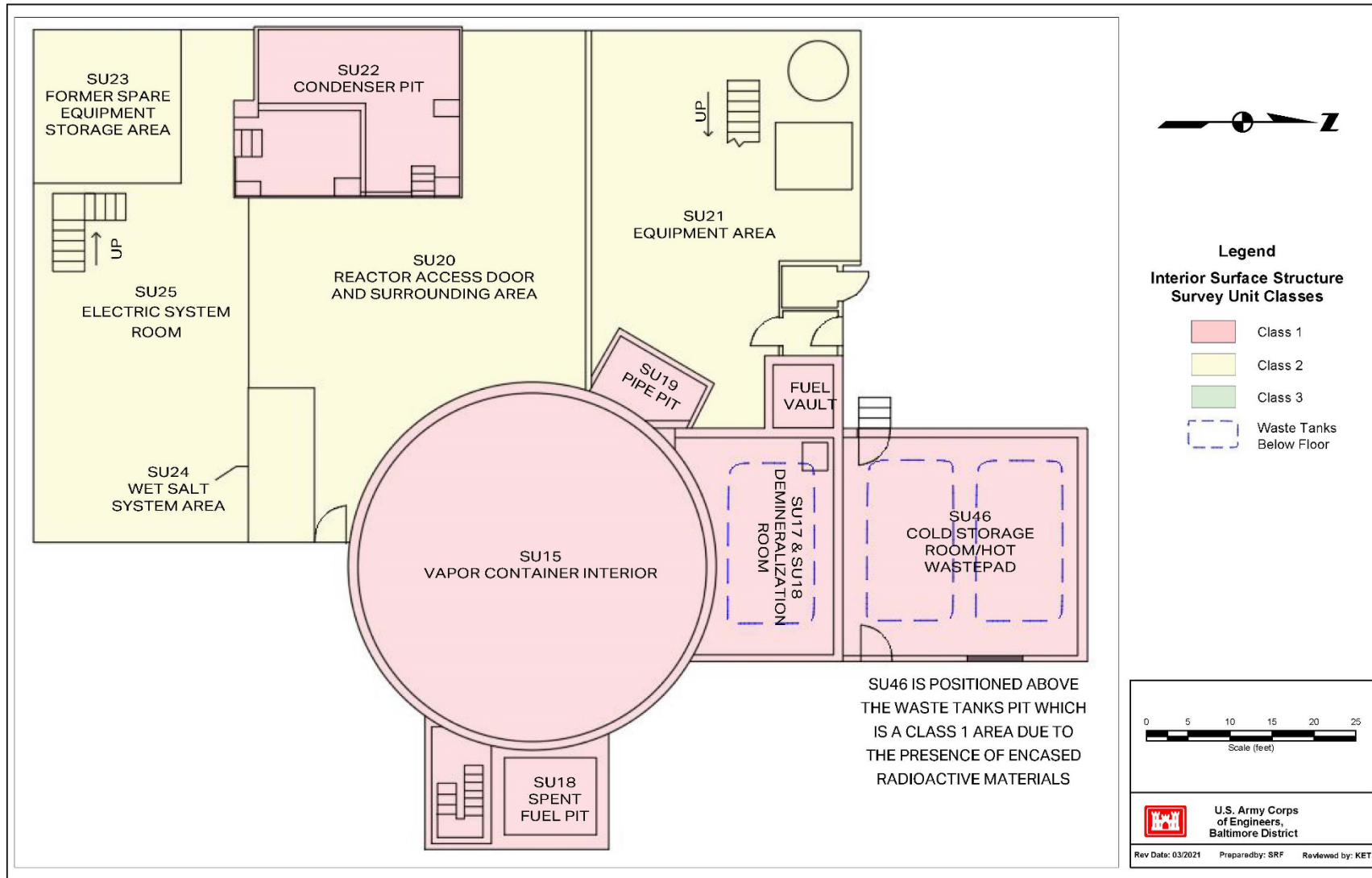
- Class 1—Areas that have or had (prior to remediation) potential or known radioactive contamination above the applicable screening criteria
- Class 2—Areas that have or have had prior to remediation, a potential for radioactive contamination or known contamination, but are not expected to exceed the screening criteria
- Class 3—Impacted areas that are not expected to contain any residual radioactivity or only levels at a small fraction of the screening criteria

MARSSIM classifications can generally be associated with both radiological and occupational risks to decommissioning workers. In Class 1 areas there is a higher potential for exposure to radioactive materials, as there is a higher potential for radioactive materials to be present above applicable screening criteria. To reduce contamination in a Class 1 area to levels that are below applicable screening criteria, industrial actions such as decontamination or selective demolition are typically required. Class 3 areas do not require such activities.

Figure 3.11-1 and **Figure 3.11-2** depict the MARSSIM classifications for the first and second floors of Building 606 North, and the VC interior. These classifications are based on site investigations conducted in 2011 and 2019. Class 1 areas include the VC; Demineralization (i.e., Demineralizer) Room, cold storage room / hot waste pad, fuel vault, pipe pit, spent fuel pit, and condenser pit on the first floor; and the turbine area on the second floor. Access to Class 1 areas on the first floor is restricted in accordance with the requirements of the SM-1A reactor possession permit. The turbine area on the second floor is accessible because the Class 1 designation only applies to internally contaminated turbine components.

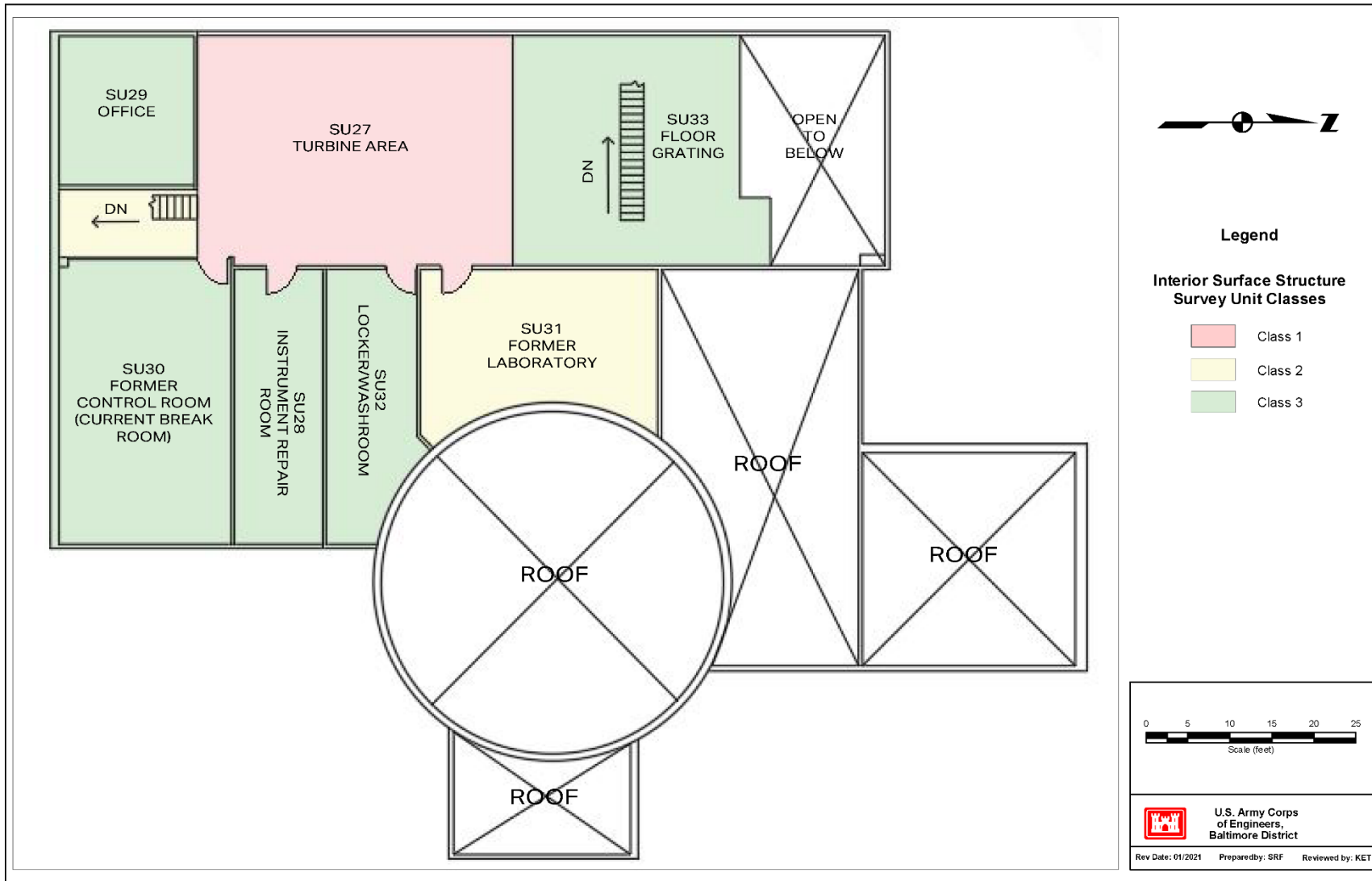
The rest of Building 606 North is categorized as Class 2 or 3. The corridor connecting Building 606 North and Building 606 South (not shown on **Figure 3.11-1** and **Figure 3.11-2**) is designated as Class 3. Access to these areas by UP contractor personnel and authorized visitors is generally unrestricted.

Figure 3.11-1: MARSSIM Classification of First-Floor Interior Areas in Building 606 North



Source: USACE 2021b

Figure 3.11-2: MARSSIM Classification of Second-Floor Interior Areas in Building 606 North



Source: USACE 2021b

Potential for Accidental Releases

An accidental release of radiological material that impacts public health (i.e., one that exceeds applicable regulatory thresholds) is considerably more likely to occur at an operating reactor rather than one that has permanently ceased operations, such as SM-1A. Accidents that are likely to exceed applicable radiological regulatory thresholds can be categorized into: 1) fuel-related accidents that generally involve the maintenance, storage, or movement of fuel; and 2) radioactive material-related (nonfuel) accidents, such as the management of high-activity waste (e.g., water treatment/demineralizer resins) (USNRC 2002). SM-1A’s highly radioactive nuclear fuel and associated materials were removed during initial deactivation activities conducted in 1972 and 1973; therefore, there is no potential for an accidental release involving nuclear fuel at SM-1A.

Accidental releases that could occur during the Proposed Action primarily consist of the release of airborne dust, particulates, or other small debris generated during decontamination or dismantlement activities. The primary ROC inside and outside Building 606 North, and the most likely to be released in an accident scenario, is cesium-137. Accidental releases of airborne dust or particles could potentially result in incidental inhalation, ingestion, short-term dermal contact, and/or external exposures.

3.11.3 Environmental Consequences

This section describes the potential impacts on radiological and nonradiological safety and health in the ROI from the No Action Alternative and Proposed Action Alternative. The impact significance thresholds used for this analysis are provided in **Table 3.11-4**.

Table 3.11-4: Radiological and Nonradiological Safety and Health Impact Significance Thresholds

Impact Significance Threshold	Impact Significance Threshold Definition
Less-than-significant adverse impact	<ul style="list-style-type: none"> • The risk or potential for an OSHA-recordable injury¹ during the alternative would be minimized to the extent practicable through implementation of an occupational safety program and/or other applicable safety and health practices. • The risk or potential for an accident or emergency requiring response or treatment from on- or off-post fire and emergency services or emergency health care providers during the alternative would be minimized to the extent practicable through implementation of an occupational safety program and/or other applicable safety and health practices. • Occupational and public exposure to radiological contaminants would remain below applicable regulatory thresholds during the alternative. • The alternative would increase the probability of an accidental release of radioactive materials on or off site; however, any resulting exposure would remain at undetectable levels and would be minimized through safe work procedures and emergency plans.

Table 3.11-4: Radiological and Nonradiological Safety and Health Impact Significance Thresholds

Impact Significance Threshold	Impact Significance Threshold Definition
Potentially significant adverse impact	<ul style="list-style-type: none"> • The risk or potential for an OSHA-recordable injury¹ during the alternative <i>could not</i> be minimized to the extent practicable through implementation of an occupational safety program and/or other applicable safety and health practices. • The risk or potential for an accident or emergency requiring response or treatment from on- or off-post fire and emergency services or emergency health care providers during the alternative <i>could not</i> be minimized to the extent practicable through implementation of an occupational safety program and/or other applicable safety and health practices. • Occupational and public exposure to radiological contaminants would exceed applicable regulatory thresholds during the alternative. • The alternative could increase the probability of a radiological accident that could result in detectable levels of on- or off-site release.

Note:

¹ An OSHA-recordable injury is defined in 29 CFR 1904.7 as one that results in any of the following: death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, or loss of consciousness

OSHA = Occupational Safety and Health Administration

3.11.3.1 No Action Alternative

Under the No Action Alternative, SM-1A would continue to be maintained in a SAFSTOR condition and existing radiological and nonradiological safety and health conditions at the SM-1A site would continue. Through continued monitoring and maintenance of SM-1A in SAFSTOR condition, the risk of exposure to residual radioactivity and potential for nonradiological accidents or injuries on the site would remain small. Therefore, the No Action Alternative would have no short-term or long-term impacts on radiological and nonradiological safety and health.

3.11.3.2 Proposed Action Alternative

Nonradiological Safety and Health

Under the Proposed Action Alternative, decommissioning and dismantlement activities would entail inherent occupational work hazards including physical, ergonomic, biological, radiological, and chemical hazards. The risk and potential severity of occupational hazards would vary throughout the duration of the Proposed Action Alternative relative to the tasks being performed at any given time. To prevent or minimize occupational safety risks to the extent practicable, USACE and the decommissioning contractor would implement an Industrial Safety Program to establish safety and health procedures, practices, and the use of PPE to protect personnel from potential occupational hazards associated with decommissioning activities and exposure to hazardous materials. The proposed activities would be performed in accordance with applicable federal, state, and local government regulatory requirements pertaining to occupational health, including OSHA standards in 29 CFR 1910.120 and 1926.65 regarding hazardous waste operations and emergency response. In the event of a conflict between federal, state, and local regulations, workers would adhere to the most

stringent/protective requirements. The proposed activities would also adhere to the applicable requirements of EM 385-1-1.

The decommissioning contractor would implement a site- and project-specific accident prevention plan (APP) in accordance with the requirements of EM 385-1-1. The APP would describe the specific work, work processes, equipment to be used, and hazards pertaining to the decommissioning activities. The APP would contain appropriate hazard-specific plans for the work being performed (e.g., plans for working with lead, or an Asbestos Hazard Abatement Plan when working with asbestos). The APP would also address any unusual or unique aspects of the project activities.

The decommissioning contractor would also prepare and adhere to activity hazard analyses as part of a total risk management process. The activity hazard analyses would be developed and updated as needed by personnel performing the decommissioning and dismantlement activities. Each activity hazard analysis would:

- Define the steps to perform the work
- Assign risk assessment codes to each step
- Identify the competent person(s) required for specific tasks (e.g., excavation, scaffolding, fall protection, rigging)

The preparation of and adherence to additional task-specific safety plans during the Proposed Action would include, but not be limited to:

- Fatigue Management Plan (EM 385-1-1, Section 01.A.20)
- Grinding and abrasive machinery (EM 385-1-1, Section 13.B)
- Developing critical lift plans (EM 385-1-1, Section 16.H)
- Machinery and mechanized equipment (EM 385-1-1, Section 18.G)
- Fall protection program (EM 385-1-1, Section 21.D)
- Scaffolds (EM 385-1-1, Section 22.B)
- Structure Demolition (EM 385-1-1, Section 23.B)
- Excavation and trenching (EM 385-1-1, Section 25)
- Confined space permits (EM 385-1-1, Section 34)

Adherence to applicable plans and procedures as well as trade-specific best practices would—at a minimum—minimize the scale or severity of any potential occupational accidents occurring on the site and the proportionate response required by fire and emergency services or emergency health care provided at on- or off-post medical facilities. Prior to performing particularly hazardous tasks or operations, additional coordination would be conducted by USACE and the decommissioning contractor with on- or off-post fire and emergency services or other relevant organizations to identify and prevent or minimize potential risks. Such activities may include handling of nonradioactive regulated materials and solid waste, confined space entry, or lifting heavy materials or objects with cranes.

Following the completion of site restoration activities (**Table 2.2-1**) and release of the site for unrestricted use, the potential for decommissioning-related occupational hazards or accidents would cease. Overall, through adherence to applicable safe work procedures and plans, the Proposed Action Alternative would have temporary, less-than-significant adverse impacts on nonradiological safety and health. In the long-term, the

decommissioning and dismantlement of the SM-1A reactor facility, and the proper disposal of associated waste, would have beneficial effects on nonradiological health and safety.

Fire and Emergency Services

The Fort Greely Fire Department operates 24 hours a day and provides emergency medical, hazardous material, fire rescue, and fire suppression services. The Fort Greely Directorate of Emergency Services provides continuous public services on the installation including the Fort Greely Fire Division, police, and other emergency response services. Gate entry, access control, and physical security at Fort Greely is also managed and controlled by the Fort Greely Directorate of Emergency Services.

Delta Junction is served by two volunteer fire departments: the Delta Junction Volunteer Fire Department and the Rural Deltana Volunteer Fire Department. These fire departments currently have a mutual aid agreement with Fort Greely. Off-post medical services are available at the Family Medical Center in Delta Junction, Alaska, approximately 4 miles north of Fort Greely.

Radiological Safety and Health

The Proposed Action Alternative would temporarily increase the potential for the incidental exposure of workers to radioactivity as radioactive materials contained in SM-1A are accessed, removed, characterized, sorted, packaged, and transported for disposal. The highest potential dose to workers would likely result from dismantlement, management, and disposition of materials within the VC. Radioactive materials that would be removed during decommissioning would primarily consist of solid materials such as building construction materials, reactor components, the grout-sand-soil mixture, and lead shielding.

USACE is committed to controlling the radiation dose (internal and external) to workers and members of the public in a manner avoiding unnecessary and accidental doses, and by maintaining environmental releases and occupational doses to workers below regulatory limits. Decommissioning activities involving the use and handling of radioactive materials would be conducted in a controlled manner to minimize and keep exposures to radiation ALARA. The USACE ALARA policy is stated in EM 385-1-80 as follows (USACE 2013):

USACE will work to ensure all personnel radiation exposure is kept ALARA taking technological, social, and economic factors into account. Radiation exposures to USACE personnel, visitors, and Contractors, as well as to the general public, will be controlled so exposures are held below regulatory limits.

Potential risks to workers would be minimized by the implementation of a Radiation Safety Program, an associated Radiation Protection Plan, and applicable BMPs. These programs, plans, and procedures would require the use of applicable PPE and establish limits and monitoring for worker exposure to radiation. All decommissioning personnel would be expected to be knowledgeable of work activities and to abide by ALARA requirements documented in work instructions and applicable radiation work plans. In

addition, each worker would be responsible for minimizing their own exposure as well as exposure to other workers and the public.

The probability of a radiological accident that would involve the release of contamination is minimized by the fact that only small quantities of loose (removable) radioactive contamination exist within SM-1A, therefore all but eliminating a dispersion concern. Additionally, the majority of radiological activity that remains within SM-1A is contained in the metal matrix of the reactor components or is within building construction materials. Implementation of and adherence to project controls, such as containment structures, ventilation systems, and periodic application of water (as weather conditions allow) during soil excavation, would prevent the release or dispersal of radiologically contaminated dust, particulates, or other small debris beyond the SM-1A site. Therefore, no release of airborne radiological contamination exceeding applicable regulatory criteria is anticipated during decommissioning and dismantlement activities. USACE and the decommissioning contractor would conduct environmental monitoring throughout the Proposed Action Alternative to ensure controls are adequate to protect human health and the environment. Worker radiation exposures would be limited in accordance with the requirements of EM 385-1-80.

Overall, the USNRC determined that radiological exposure risks are considered to be minor when decommissioning tasks are performed by trained occupational workers (USNRC 2002). The USNRC determined that with applicable control measures in place, impacts associated with nonspent fuel-related accidents are neither detectable nor destabilizing (USNRC 2002). Public exposure to radiation would be significantly less than that of workers and meet requirements identified in the Decommissioning Permit. The USNRC's decommissioning GEIS also indicates that the radiological impacts of decommissioning would remain within regulatory limits for worker and public exposures, and that radiological impacts from decommissioning much larger facilities would be small (USNRC 2002). Therefore, short-term impacts on the radiological safety and health of workers and the general public under the Proposed Action Alternative would be less than significant.

There would be no risk of exposure to radioactive contamination exceeding regulatory thresholds on the former SM-1A site following completion of site restoration activities and release of the site for unrestricted use. Therefore, the Proposed Action Alternative would have no long-term impacts on radiological safety and health. The removal of radioactive materials from SM-1A and their disposal and permitted facilities would represent a beneficial effect on radiological safety and health.

3.11.4 Radiological and Occupational Safety and Health BMPs

The following BMPs would be implemented during the Proposed Action Alternative to prevent or minimize potential impacts on radiological and occupational safety and health:

- Implement an Industrial Safety Program to establish safety and health procedures, practices, and the use of PPE
- Implement a site- and project-specific APP in accordance with EM-385-1-1 that would describe the specific work, work processes, equipment to be used, and hazards pertaining to the decommissioning activities

- Implement a WMDP that would establish procedures and requirements for the safe characterization, management, handling, storage, transportation, and disposal or recycling of radioactive waste, nonradioactive regulated solid waste, and C&D waste to optimize safety and prevent or minimize risks to the extent practicable
- Prepare and adhere to activity hazard analyses that would define the steps to perform the work; assign risk assessment codes to each step; and identify the competent person(s) required for specific tasks
- Prior to performing particularly hazardous tasks or operations, coordinate with on- or off-post fire and emergency services or other relevant organizations to identify and prevent or minimize potential risks
- Conduct decommissioning activities in a controlled manner to minimize and keep radiological exposures ALARA in accordance with EM 385-1-80
- Implement a Radiation Safety Program and Radiation Protection Plan that would require the use of applicable PPE and establish limits and monitoring for worker exposure to radiation in accordance with EM 385-1-1
- Conduct environmental monitoring throughout the Proposed Action Alternative to ensure controls are adequate to protect human health and the environment
- Establish one or more MOA with on- and/or off-post fire and emergency response services and/or emergency health care providers to minimize fire risk and ensure safety, define roles and responsibilities; and establish conditions for response, oversight, and monitoring

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4.0 Cumulative Effects

This section analyzes the potential cumulative effects of the Proposed Action in combination with other past, present, and reasonably foreseeable actions in the ROI. A cumulative effects analysis determines if a federal proposed action would be likely to result in significant adverse impacts when combined with the known or anticipated impacts of other projects in the ROI.

4.1 Applicable Guidance

In accordance with 40 CFR 1508.7 and as detailed in CEQ guidance⁵, *Considering Cumulative Effects Under NEPA* (1997) and *Memorandum: Guidance on the Considerations of Past Actions in Cumulative Effects Analysis* (24 June 2005), USACE must analyze the potential cumulative effects that may occur when considering a proposed action “when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.” Each of these actions has the potential to affect resources in the same time and space as the Proposed Action; as such, an analysis of these potential combined effects is required.

Cumulative effects may be accrued over time and/or in conjunction with other preexisting effects from other activities in the ROI (40 CFR 1508.25). Therefore, previous impacts and multiple smaller impacts should also be considered. Overall, assessing cumulative effects involves defining the scope of the other actions and their interrelationship with a proposed action to determine if they overlap in space and time. Cumulative effects can result from separate actions that are individually minor—but collectively significant—when they occur at the same location over time.

4.2 Region of Influence

The ROI for the cumulative analysis primarily encompasses the SM-1A site and immediately surrounding on-post and off-post areas; specifically, past, present, and reasonably foreseeable future actions at Fort Greely because the Proposed Action’s impacts would primarily be localized and occur on the SM-1A site or in nearby on-post areas. For certain resources, the cumulative effects analysis examines impacts that could occur in areas outside Fort Greely, such as major off-post public roads from Fort Greely to Fairbanks. The temporal scope spans the timeline of the Proposed Action to encompass all proposed decommissioning and dismantlement activities.

⁵ Substantive preparation of this EA began prior to updates to the CEQ regulations implementing NEPA that became effective on September 14, 2020. Therefore, this EA has been prepared in accordance with the NEPA regulations that were previously in effect.

4.3 Past, Present, and Reasonably Foreseeable Future Projects

The cumulative analysis identifies projects likely to have the potential for contributing to cumulative effects or the Proposed Action’s incremental impact when combined with the potential impact of a past, present, or future project. These projects occur in the ROI and may affect the same resources that would be affected by the Proposed Action.

As past actions have been assessed in the environmental baseline and are already considered in the impact analysis (**Section 3**), this cumulative analysis focuses on present and reasonably foreseeable future projects. Past projects are only considered if their long-term and operational impacts would occur to similar resource areas at the same time as the Proposed Action, contributing to cumulative impacts.

A brief summary of the present and reasonably foreseeable future projects on Fort Greely considered in this cumulative analysis is provided in **Table 4.3-1**. While detailed timeframes for most of these projects are unknown, they are anticipated to occur between 2021 and 2026.

Table 4.3-1: Past, Present, and Reasonably Foreseeable Future Actions

Name	Status	Description
Ground-Based Midcourse Defense Expanded Capability, Fort Greely	Ongoing	Construction and operational activities are proposed for an additional ground-based interceptor field and associated support facilities, utilities, and infrastructure at Fort Greely. If deployed, the interceptor field would expand the existing Ground-Based Midcourse Defense element of the Ballistic Missile Defense System. The proposed activities began in spring 2018 and will continue through 2021, with the site being operational by 2023 (DOD 2018).
Richardson Highway Improvements	Past and Ongoing	ADOT&PF maintains the Richardson Highway. Near Fort Greely, recent and ongoing improvements to the highway include construction of improved passing lanes between Milepost 266 and 341. No construction projects are planned in the vicinity of Fort Greely or on the Richardson Highway between Fort Greely and Fairbanks in ADOT&PF’s 5-year planning database (ADOT&PF 2020a).
Various small maintenance and operations projects on Fort Greely	Ongoing and Future	<ul style="list-style-type: none"> • Roof replacement, Buildings 102 and 100 • Demolition of GCI building • Construct redundant Comms MILCOM, Building 3001 • Emergency flooding communication utilidor, Buildings MH 58 and 59 • Installing lightning grid, Building 501 • Install FE6 fencing around fuel tanks, 10 buildings • Install building sign, Building 661 • Replace 501 VTC A/V equipment, Building 501 • Repair fencing by Building 660 • Install perimeter fence gate
Richardson Highway Planning and Environmental Linkage Study	Future	ADOT&PF plans to conduct a Planning and Environmental Linkage Study to define the scope, preliminary design elements, and conduct preliminary environmental analysis in order to identify projects in the corridor for future design and construction projects (ADOT&PF 2020a).

Notes:

ADOT&PF = Alaska Department of Transportation and Public Facilities

A/V = audio/visual

The collective impacts of past, present, and reasonably foreseeable future projects would be less than significant. Ongoing and future actions requiring construction, such as road improvements and the new interceptor field, would cause physical disturbance of surrounding soils and generate air emissions, fugitive dust, nonradioactive regulated materials and solid waste, and runoff; however, these effects would be temporary and minimized through applicable BMPs. These projects would occur in already developed areas; therefore, potential impacts on soils, biological, and cultural resources would be minimal. This cumulative analysis also assumes that potential impacts from present and reasonably foreseeable future projects would be further minimized to the greatest extent practicable through adherence to applicable mitigation measures, BMPs, and/or federal, state, local, and DOD/Army regulatory requirements.

4.4 Assessment of Cumulative Impacts

The significance thresholds for the cumulative effects analysis consider the respective significance thresholds for each resource area analyzed in this EA, as described in **Section 3**. Cumulative impacts are considered potentially significant if the Proposed Action's additional impact on the effects of past, present, and reasonably foreseeable future projects is substantial enough to measurably affect the resource area. The term "measurably" is defined as being reasonably noticeable or detectable to a person.

4.4.1 Cumulative Effects under the No Action Alternative

Under the No Action Alternative, decommissioning and dismantlement of the deactivated SM-1A Nuclear Power Plant Facility would not occur. SM-1A would remain in the current SAFSTOR condition for the foreseeable future. Overall site conditions would remain unchanged as no decommissioning or dismantlement activities would take place; therefore, the No Action Alternative would not result in any incremental effects. In conjunction with past, present, and reasonably foreseeable future projects, the No Action Alternative would result in no cumulative impacts.

4.4.2 Cumulative Effects under the Proposed Action Alternative

Overall, incremental effects of the Proposed Action Alternative (when considered with effects of past, present, and reasonably foreseeable future projects) would contribute short-term, less-than-significant adverse cumulative impacts on air quality, water resources, soils, transportation, waste, utilities, and biological resources. Ground-disturbing activities associated with both the Proposed Action and the expansion of the Ground-Based Midcourse Defense element would collectively increase air emissions, sedimentation, and nonradioactive regulated materials and solid waste in the ROI. Both projects would also have the potential to temporarily disrupt local wildlife and utility services. Combined with potentially increased traffic congestion from the Ground-Based Midcourse Defense project and Richardson Highway improvements, impacts from additional truck traffic under the Proposed Action would be expected to be highly localized and remain within the existing road capacity. Short-term, less-than-significant adverse cumulative effects would be further minimized to the extent practicable through project-specific BMPs.

While the Proposed Action Alternative would result in an adverse effect on cultural resources from the dismantlement and disturbance of historic properties, it would not result in potentially significant cumulative impacts when combined with past, present, and reasonably foreseeable future projects. Projects provided in **Table 4.3-1** occurring outside Fort Greely (Richardson Highway Improvements, Richardson Highway PEL Study) would have no potential to affect cultural resources on the installation. Impacts on cultural resources outside Fort Greely would also be unlikely to result from the projects provided in **Table 4.3-1** because these projects would primarily occur on previously disturbed land. Further, ongoing and future projects occurring on Fort Greely, including the Ground-Based Midcourse Defense Expanded Capability and various small maintenance and operations projects (e.g., the roof replacement at Building 102 and Building 100, demolition of GCI building, installation of FE6 fencing around fuel tanks at 10 buildings, installation of a building sign at Building 661, and installation of a perimeter fence gate) would adhere to the requirements of NHPA Section 106 and applicable BMPs to avoid, minimize, or mitigate adverse effects on historic properties. These projects would also adhere to applicable policies in the USAG Alaska INRMP in the event of unanticipated discoveries of archaeological materials or human remains. Execution of an MOA between USACE, the Alaska SHPO, and consulting parties would ensure that the Proposed Action's potential project-specific and cumulative adverse impacts on cultural resources and historic properties (when considered with other projects potentially affecting those resources) would remain less than significant.

The Proposed Action would result in beneficial cumulative effects on health and safety, when taken into consideration with the effects of other past, present, and future actions in the ROI. Decommissioning the SM-1A facility, in conjunction with roadway improvements to the Richardson Highway, would contribute to safer conditions in the ROI. Other projects or activities in the vicinity of the SM-1A site would have reduced safety concerns in the long-term because radioactive and nonradioactive wastes would be removed. Removal of radioactive waste and nonradioactive regulated solid waste would preclude the potential for accidental spills and releases.

Based on the assessed potential incremental impacts of the Proposed Action Alternative and the anticipated effects of the present and reasonably foreseeable future activities considered in this cumulative analysis, there would be no significant adverse cumulative impacts from the Proposed Action Alternative. Adverse cumulative effects would be short-term and less than significant; long-term beneficial cumulative impacts would occur as well.

5.0 Conclusions and Other Related Disclosures

This EA evaluates the potential environmental impacts of the proposed decommissioning and dismantlement of the deactivated SM-1A Nuclear Power Plant. The Proposed Action includes site preparation; removal of facility components, on-site structures, radioactive waste and non-radioactive regulated solid waste; waste transport and disposal; site restoration; termination of the U.S. Army-issued SM-1A decommissioning permit; and release of the SM-1A site for unrestricted use. This EA evaluates impacts from both the Proposed Action Alternative and the No Action Alternative. This analysis finds that the Proposed Action would have no significant adverse impacts on the environment—either individually or cumulatively—if applicable regulatory and permitting requirements, BMPs, and minimization measures are adhered to.

The Proposed Action would demolish key elements of the NRHP-eligible SM-1A Nuclear Power Plant and would remove contributing resources from the NRHP-eligible Fort Greely Historic District, resulting in an adverse effect on historic properties under NHPA Section 106. In consultation with the Alaska SHPO and other participating consulting parties, USACE will develop an MOA with stipulations to resolve adverse effects on historic properties. Once executed, the MOA would resolve the adverse effect consistent with 36 CFR 800.6(c), such that project impacts would remain less than significant.

USACE would comply with all applicable federal, state, and local regulatory and permitting requirements. Adverse impacts on resources analyzed in this EA would not meet the conditions requiring preparation of an EIS under 32 CFR 651.41. The Army has determined that the Proposed Action is not an action normally requiring preparation of an EIS as defined under 32 CFR 651.42. Therefore, a FNSI is the appropriate decision document for the Proposed Action.

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7.0 Preparers

A list of the individuals that contributed to the preparation and review of the EA is provided in **Table 7-1**.

Table 7-1: List of Preparers

Name	Role
U.S. Army Corps of Engineers—Baltimore District	
Brenda M. Barber	Program Manager/Contracting Officer's Representative
Jeffrey Hillebrand	Project Manager
Brian Hearty	National Program Manager, USACE Deactivated Nuclear Power Plant Program
Paula Beck	Contracting Officer
Laura Wade	Contracting Officer
Leigha Arnold	Contract Specialist
Mark Cap	Contract Specialist
Dave Watters	Radiation Safety Officer
Jeff Helmick	Alternate Radiation Safety Officer
Genet Tulu	Industrial Hygienist
Griffin Roblyer	Environmental Engineer
Kim Berg	Environmental Engineer
Kiera Hearn	Chemist
CJ Ditsious	Chemist
Christopher Fincham	Public Affairs Specialist
Jeff Lorenz	Counsel
Michael Shields	Counsel
Heather Cisar	NEPA Specialist
Liz Shipley	NEPA Specialist
Michael Schuster	NEPA Specialist
Eva Falls	NHPA Section 106 Specialist
Douglas McWilliams	Real Estate Specialist
AECOM-Tidewater Joint Venture	
Russell Kiesling	Project Director
Jennifer E. Warf	Quality Assurance / Quality Control Reviewer
Elizabeth Bella	Deputy Project Manager / NEPA Lead
Tara Bellion	Deputy NEPA Lead
Craig Carver	Senior NEPA Specialist
Charlene Wu	NEPA Specialist
Kevin Taylor	Nuclear Engineer / Health Physicist

Table 7-1: List of Preparers

Name	Role
Dan Delaney	Subject Matter Expert—Water Resources, Radiological and Occupational Health and Safety
Jessica Evans	Subject Matter Expert—Utilities, Transportation and Traffic, Socioeconomics/Environmental Justice
Andrew Fisher	Subject Matter Expert—Biological Resources
Arika Mercer	Administrative Record, References, Public Involvement
Allison Payne	Subject Matter Expert—Soils, Nonradiological Hazardous Materials and Nonhazardous Solid Waste, Public Involvement
Caitlin Shaw	Subject Matter Expert—Air Quality
Patience Stuart	Subject Matter Expert—Cultural Resources

8.0 Distribution and Review of the Draft EA

The 30-day Draft EA public review and comment period began on 26 February 2021 and ended on 28 March 2021. This section summarizes public notification and distribution of the Draft EA, in-person and virtual public meetings that were conducted during the 30-day review period, and comments received on the Draft EA.

8.1 Distribution of the Draft EA

Notification letters announcing the availability of the Draft EA and Draft FNSI for public review and comment were sent to the agencies, individuals, and organizations provided in **Table A-1**. A representative copy of the notification letter is provided in **Appendix A**. Printed copies of the Draft EA were sent to stakeholders that requested a copy of the document and to all tribal entities.

8.2 Public Notice

Consistent with NEPA and 32 CFR 989, which require public review of an EA before approval of the FNSI and implementation of the proposed action, a NOA was published in the following local newspapers announcing the availability of the Draft EA and Draft FNSI:

- Anchorage Daily News
- Fairbanks Daily News-Miner
- Delta Wind (Delta Junction local newspaper)
- The Alaska Post (Fort Wainwright newspaper)

Affidavits of publication and/or copies of the NOA as it appeared in each newspaper are provided in **Appendix A**.

As indicated in the NOA, print and/or electronic copies of the Draft EA and Draft FNSI were made available for public review at the following local libraries:

- Delta Community Library, 2291 Deborah Street, Delta Junction, AK 99737
- Noel Wien Public Library, 1215 Cowles Street, Fairbanks, AK 99701
- Z. J. Loussac Library, 3600 Denali Street, Anchorage, AK 99503
- Fort Wainwright Library, 3700 Santiago Ave., Fort Wainwright, AK 99703

The NOA provided information on how to request a copy of the Draft EA and Draft FNSI, as well as instructions on how to submit comments.

The 30-day public comment period and availability of the Draft EA and Draft FNSI for public review was also announced on USACE and Fort Greely social media accounts, as well as the USACE project website.

8.3 Public Meetings

Two in-person public meetings were held during the 30-day Draft EA public review and comment period to provide members of the public with information about the Proposed Action and an opportunity to comment (**Table 8.3-1**). The in-person meetings were livestreamed and subsequently made available on YouTube; a question and answer chat box was available to participants during the livestreaming. Meeting details were announced in the NOA and the notification letters sent to the stakeholders in **Table A-1**. The format for each in-person meeting was the same and included an open house / poster session followed by a formal presentation given by USACE then an audience question and answer session.

At each in-person meeting, USACE staff were available during the open house / poster session and immediately following the presentation to informally discuss the project and answer questions from meeting attendees. Individuals attending the meetings were also given an opportunity to submit written comments. While the public could ask questions, these were not considered formal comments on the Draft EA as USACE provided direction on how to submit comments via comment form at the meeting, by email, or by U.S. postal mail. A copy of the presentation and posters is provided in **Appendix A**.

A public meeting was also conducted in a virtual/online format in accordance with the *Interim Army Procedures for NEPA* dated 15 June 2020. The virtual public meeting was open concurrently with the comment period. An image showing the layout of the virtual public meeting room is provided in **Appendix A**. The posters were the same as those presented during the in-person public meetings.

Table 8.3-1: Draft EA Public Meeting Information

Date	Location	Time
March 9, 2021	Westmark Fairbanks Hotel and Conference Center 813 Noble Street Fairbanks, Alaska 99701 Recording available at: https://youtu.be/BRQPuLfonPM	5:00 p.m. to 9:00 p.m.
March 11, 2021	Delta Junction Community Center 2287 Deborah Street Delta Junction, Alaska 99731 Recording available at: https://youtu.be/tX3PJLLzDo4	5:00 p.m. to 9:00 p.m.

8.4 Draft EA Comments

Public and agency comments received during the 30-day Draft EA public review period, along with USACE's responses, are provided in **Table 8-4-1**. None of the comments required substantial revision of the Final EA, USACE's Proposed Action, or the impact analysis. Comments requiring minor revisions to the Final EA were addressed accordingly.

Table 8.4-1: Draft EA Comment Summary

Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
1	Audrey Murphy	Section 2.2, Proposed Action	What benefit to mankind results from taking any radioactive material from safe and secure storage in Alaska to safe and secure storage in Texas?	Comment noted. Disposal of debris from SM-1A in a safe and secure facility will prevent inadvertent exposure to the public and allow for long-term monitoring. <i>No change was made to the Final EA to address this comment.</i>
2	Audrey Murphy	Section 1.3, Purpose and Need; Need	The purported NEED for the chosen Proposed Action to be completed within 60 years is a general timeline that was adopted a lifetime ago and should be evaluated for specific situations, given the anticipated expenses involved.	Comment noted. As stated in the Draft Environmental Assessment (EA), decommissioning and dismantlement of SM-1A is required within 60 years (by 2032) of permanent cessation of operations in accordance with current U.S. Nuclear Regulatory Commission (USNRC) regulation 10 Code of Federal Regulations (CFR) 50.82(a)(3) and Army Regulation (AR) 50-7, <i>Army Reactor Program</i> (17 November 2016), which establishes the Army's intent to follow USNRC guidelines. <i>No change was made to the Final EA to address this comment.</i>
3	Audrey Murphy	General	The deactivation of the SM-1A Power Plant, after it ceased operation in 1972 and the subsequent passage of time since then, has effectively made the [physical] remains safe, if not disturbed. This is evidenced by the Army transferring ownership of Bldg. 606 to Doyon, Ft. Greely's Utility Contractor.	Comment noted. In its current condition, SM-1A does not support the Army's mission in Alaska or Fort Greely. Decommissioning and dismantlement of SM-1A within 60 years (by 2032) of permanent cessation of operations is required in accordance with current USNRC regulation 10 CFR 50.82(a)(3) and AR 50-7 (17 November 2016), which establishes the Army's intent to follow USNRC guidelines. Also, ownership of the SM-1A encased components and materials was not transferred to the UP Contractor and remains under Government ownership, as noted in Table 1.2-1 . <i>No change was made to the Final EA to address this comment.</i>
4	Audrey Murphy	General	A Cost/Benefit analysis of the proposed action as opposed to the No-Action alternative should be useful to the decision-makers.	Comment noted. As specified under National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508), a monetary cost-benefit

Table 8.4-1: Draft EA Comment Summary

Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
				analysis is not required as part of the EA and is outside the scope of the NEPA process. <i>No change was made to the Final EA to address this comment.</i>
5	Audrey Murphy	Section 3.11, Safety & Health	Be prepared to handle an accidental release of rad waste. Expect surprises, like finding "gel" that didn't consolidate into a gel, or finding radioactive liquid. Also, bring your own [calibrated] rad. detectors as Fort Greely may not be prepared to furnish any.	Comment noted. As stated in Section 3.11 of the Draft EA, the U.S. Army Corps of Engineers (USACE) is committed to creating a safe working environment to ensure that potential risks to the health and safety of the public, workers, Fort Greely personnel, and on-post residents are eliminated or minimized to the greatest extent practicable throughout the duration of the Proposed Action. <i>No change was made to the Final EA to address this comment.</i>
6	Audrey Murphy	Section 3.11, Safety & Health	The emergency response team at Fort Greely (the Fire Department) is subject to constant personnel rotation. Training for the Fire Department may not extend to handling radioactive materials. Consider having someone proficient in rad. waste handling to liaison with the Fire Department during demo and transfer of rad. waste. Finally, the standing Vapor Container with its ancillary structures could serve as a good example of how to safely handle a nuclear plant once deactivated.	Comment noted. As stated in Section 3.11.3.2 of the Draft EA, USACE and the decommissioning contractor would coordinate with on-or off-post fire and emergency services or other relevant organizations to identify and prevent or minimize potential risks prior to performing particularly hazardous tasks or operations. Decommissioning activities involving the use and handling of radioactive materials would be conducted in a controlled manner to minimize and keep exposures to radiation as low as reasonably achievable (ALARA). Potential risks to workers would be minimized by the implementation of a Radiation Safety Program, an associated Radiation Protection Plan, and applicable best management practices (BMPs). USACE will provide project-specific training to on- and off-post first responders as necessary during the Proposed Action. <i>No change was made to the Final EA to address this comment.</i>
7	State of Alaska, ADEC, SPAR Division,	Section 3.10, Waste; petroleum-	There are three active contaminated sites within the SM1A project footprint, as documented in the DEC Contaminated Sites Program Database. These sites	Comment noted. USACE will coordinate with Fort Greely and the State of Alaska as applicable regarding these sites during implementation of

Table 8.4-1: Draft EA Comment Summary

Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
	Contaminated Sites Program	contaminated soils	<p>are: (1) Fort Greely SMDC Nuclear Reactor SM1A (ADEC File Number: 141.38.035, Hazard ID: 1706), (2) Fort Greely SMDC Building 606 PP (ADEC File Number: 141.38.012, Hazard ID: 1711), Doyon Utilities at Fort Greely Building 606 USTs 1 and 2 (ADEC File Number: 141.26.020, Hazard ID: 27219).</p> <p>Recommendation: With the SM1A project area being within the boundaries of contaminated sites, work plans must be provided to the Contaminated Sites project manager for review and approval under 18 AAC 75.360 prior to work starting. Please also ensure that this environmental work is completed by a Qualified Environmental Professional (QEP) and Qualified Sampler in accordance with 18 AAC 75.333. At the completion of the environmental work, please provide the Contaminated Sites project manager with a report for review and approval per 18 AAC 75.380.</p>	the Proposed Action. <i>No change was made to the Final EA to address this comment.</i>
8	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Table ES-1 (Waste)	<p>This table notes that the project will "Prepare and adhere to a Hazardous Material Abatement Plan in accordance with EM 385-1-1, Safety and Health Requirements to establish procedures for the management and disposition of non-radioactive regulated solid waste."</p> <p>Recommendation: Since both hazardous and non-hazardous solid wastes are regulated materials, here and throughout this document, references to regulated solid waste should be modified as appropriate, to specify "regulated hazardous solid waste" or "regulated non-hazardous solid waste." Thus, descriptions of the Hazardous Material Abatement Plan should specify that the plan is specific to "the management and disposition of non-radioactive regulated hazardous solid waste."</p>	Comment noted. The terminology used to describe waste that would be generated by the Proposed Action is applicable in the context of the discussion presented in the Draft EA and is used consistently throughout the document. Also see Section 2.2 and Table 2.2-2 of the Draft EA. USACE and/or its decommissioning contractor will use appropriate terminology as applicable during the preparation of additional plans and documents that will be required prior to or during implementation of the Proposed Action. <i>No change was made to the Final EA to address this comment.</i>

Table 8.4-1: Draft EA Comment Summary

Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
9	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Table ES-1 (Waste)	<p>This table notes that the project will "Implement a Waste Management and Disposal Plan that would establish procedures and requirements for the safe management, handling, storage, and transportation of waste to optimize safety and prevent or minimize risks to the extent possible."</p> <p>Recommendation: In order to evaluate options for handling and disposal, the Waste Management and Disposal Plan must be provided to the ADEC Solid Waste Program for review and approval. The Plan needs to include specific details on proposed characterization efforts for all waste materials to ensure characterization will meet Solid Waste Program requirements for handling and disposal of any waste destined for disposal in Alaska. The ADEC Solid Waste Program previously provided comments pertaining to specific wastes and is including those comments (see general comments below regarding PCB, paint and LBP wastes). Also, please ensure that descriptions of the Waste Management and Disposal Plan, both here and elsewhere in this document, specify that the plan applies to "safe management, handling, storage, transportation, and disposal" of solid wastes. Please clarify as well whether this plan applies to all regulated solid wastes (radioactive and non-radioactive, hazardous and non-hazardous) or just to regulated non-hazardous solid wastes.</p>	<p>Comment noted. USACE will continue to coordinate with federal, state, and local agencies as applicable during the Proposed Action. <i>No change was made to the Final EA to address this comment.</i></p>

Table 8.4-1: Draft EA Comment Summary

Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
10	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Section 3.10, Waste; PCB and paint wastes	<p>In-state disposal limits for PCB wastes (painted construction debris) with or without paint removal.</p> <p>Recommendation: Please note the following requirements regarding PCB wastes: With paint removal. No landfills in Alaska that will accept PCBs at or above a concentration of 1.0 mg/kg. If paint is removed from a non-porous material (metal), it must be demonstrated that the material has been decontaminated in accordance with the applicable decontamination standard under 40 C.F.R. § 761.79. If documentation that this standard has been met is provided to ADEC, material would be acceptable for disposal in Alaska. Porous surfaces from which paint has been removed are subject to sampling and analysis to demonstrate that residual PCBs are below 1.0 mg/kg. ADEC recommends following the guidance: https://www.epa.gov/pcbs/standard-operating-procedure-sampling-porous-surfaces-polychlorinated-biphenyls-pcbs1. ADEC will require that any sampling and analysis be conducted according to written plans approved by ADEC. This plan approval expectation applies to all subsequent references to sampling and analysis. Concrete, even if unpainted, should not be assumed to be PCB-free. Without paint removal. Paint or other coatings must be directly sampled via chip or scrape samples (not wipe samples) to demonstrate that the paint contains less than 1.0 mg/kg PCBs. As noted above, the particulars of such sampling must be documented in a written sampling and analysis plan for review and approval by ADEC.</p>	<p>Comment noted. USACE is aware of the regulatory requirements applicable to the disposal of waste and debris containing polychlorinated biphenyls (PCBs) and will manage and dispose of such waste accordingly. USACE will coordinate the disposal of waste containing PCBs with the State of Alaska, receiving disposal facilities, and/or other agencies/ organizations as applicable during the Proposed Action. <i>No change was made to the Final EA to address this comment.</i></p>

Table 8.4-1: Draft EA Comment Summary

Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
11	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Section 3.10, Waste; PCB wastes	<p>In-state disposal limits for PCB wastes (concrete impacted by PCB oil leaks).</p> <p>Recommendation: No PCB liquids may be disposed in Alaska. Concrete impacted by PCB oil must be sampled to demonstrate that residual concentrations are less than 1.0 mg/kg. ADEC recommends conducting sampling and analysis following the guidance cited above.</p>	<p>Comment noted. USACE is aware of the regulatory requirements applicable to the disposal of waste and debris containing PCBs and will manage and dispose of such waste accordingly. USACE will coordinate the disposal of waste containing PCBs with the State of Alaska, receiving disposal facilities, and/or other agencies/organizations as applicable during the Proposed Action. <i>No change was made to the Final EA to address this comment.</i></p>
12	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Section 3.10, Waste; LBP waste	<p>In-state disposal limits for lead-based paint wastes (painted construction debris) with or without paint removal. See attachment "lead-based-paint-disposal.pdf"</p>	<p>Comment noted. USACE is aware of the regulatory requirements applicable to the disposal of waste and debris containing lead-based paint (LBP) and will manage and dispose of such waste accordingly. A copy of the LBP disposal fact sheet is provided in Appendix A of the Final EA (see section titled "Draft EA Public Comments Received"). USACE will coordinate the disposal of waste containing LBP with the State of Alaska, receiving disposal facilities, and/or other agencies/ organizations as applicable during the Proposed Action. <i>No change was made to the Final EA to address this comment.</i></p>
13	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	General; demolition debris with PCBs	<p>In-state disposal and recycle of non-hazardous and non-radioactive demolition debris (steel, concrete, siding, roofing materials, etc.).</p> <p>Recommendation: Materials with PCB concentrations at or above 1.0 mg/kg are currently not accepted for disposal in Alaska. The Corps should ensure that an appropriate plan is in place to screen recyclable materials for the presence of PCBs. For example, flaking paint containing PCBs at or above 1 mg/kg could present challenges for recycling of such materials.</p>	<p>Comment noted. USACE is aware of the regulatory requirements applicable to the disposal / recycling of waste and debris containing PCBs and will manage and dispose/recycle such waste accordingly. USACE will coordinate the disposal/recycling of waste containing PCBs with the State of Alaska, receiving disposal / recycling facilities, and/or other agencies/ organizations as applicable during the Proposed Action. <i>No change was made to the Final EA to address this comment.</i></p>

Table 8.4-1: Draft EA Comment Summary

Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
			<p>ADEC recommends that a written disposal/recycling plan be developed to ensure that these concerns are appropriately addressed, and that the ADEC in-state solid waste disposal limit of 1.0 mg/kg is satisfied. For example, such a plan might include provisions that would allow only well-adhered paint to be recycled to minimize the possibility of flaking during transport. This plan should also ensure that appropriate procedures are in place to ensure that such materials are appropriately managed when recycled.</p>	
14	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Section 1.9, Regulatory Framework; applicable regulations	<p>[Draft EA Section] 1.9 Regulatory Framework Recommendation: Please include State of Alaska Solid Waste Regulations (18 AAC 60) in this listing.</p>	<p><i>The Final EA was revised to include this regulatory reference in the bulleted list in Section 1.9.</i></p>
15	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Section 2.2, Description of the Proposed Action; waste	<p>This page notes that "As shown in Table 2.2-2, it is anticipated that approximately half of the waste generated during the Proposed Action would be characterized as construction and demolition (C&D) waste. C&D waste is not radiologically contaminated and does not contain nonradioactive regulated solid waste such as lead or polychlorinated biphenyls (PCBs). Therefore, this waste can be recycled or disposed of in typical municipal solid waste (MSW) or C&D waste landfills."</p> <p>Recommendation: ADEC will require all characterization information be provided to document classification of this waste as C&D. Any plan for characterizing material needs to be submitted for review and approval prior to sampling. This ensures that data will be adequate for purposes of any in state disposal. Any free release criteria being set to determine if C&D must be managed as radioactive or nonradioactive needs to be submitted to ADEC for review and approval.</p>	<p>Comment noted. USACE will continue to coordinate with the State of Alaska during the Proposed Action. The requested information will be provided to ADEC following the selection of the SM-1A decommissioning contractor and award of the decommissioning contract. <i>No change was made to the Final EA to address this comment.</i></p>

Table 8.4-1: Draft EA Comment Summary

Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
16	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Section 2.2, Description of the Proposed Action; Material Categorization, Survey, and Release Plan	<p>This page notes that "A Material Categorization, Survey, and Release Plan would be developed to establish the framework for releasing structures and M&E as non-radiologically impacted waste."</p> <p>Recommendation: The Material Categorization, Survey, and Release Plan needs to be provided to the ADEC Solid Waste Program for review and approval. This needs to include specific details on proposed characterization efforts and criteria for free release for all waste materials to ensure characterization will meet Solid Waste Program Requirements for disposal of any waste in the State of Alaska.</p>	See response to Comment 15 .
17	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Section ES.8, Environmental Impact Minimization; Table ES-1 (Waste)	<p>This table note that the project would "Implement a Waste Management and Disposal Plan that would establish procedures and requirements for the safe management, handling, storage, and transportation of waste to optimize safety and prevent or minimize risks to the extent possible."</p> <p>Recommendation: In order to evaluate options for handling and disposal, the Waste Management and Disposal Plan must be provided to the ADEC Solid Waste Program for review and approval. The Plan needs to include specific details on proposed characterization efforts for all waste materials to ensure characterization will meet Solid Waste Program requirements for handling and disposal of any waste destined for disposal in Alaska. The ADEC Solid Waste Program previously provided comments pertaining to specific wastes and is including those comments (see attachment "lead-based-paint-disposal.pdf"). Also, please ensure that descriptions of the Waste Management and Disposal Plan, both here and elsewhere in this document, specify that the plan applies to "safe management, handling, storage, transportation, and disposal" of solid wastes.</p>	<p>Comment noted. USACE will continue to coordinate with the State of Alaska during the Proposed Action. The requested information will be provided to ADEC following the selection of the SM-1A decommissioning contractor and award of the decommissioning contract. A copy of the LBP disposal fact sheet is provided in Appendix A of the Final EA (see section titled "Draft EA Public Comments Received").</p> <p><i>The Final EA was revised per response to Comment 9.</i></p>

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Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
			Please clarify as well whether this plan applies to all regulated solid wastes (radioactive and non-radioactive, hazardous and non-hazardous) or just to regulated non-hazardous solid wastes.	
18	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Table 3.10-1, Regulations and Guidance Applicable to Waste; applicable regulations	This table discusses "Regulations and Guidance Applicable to Waste". Recommendation: Please add the State of Alaska Radiation Protection (18 AAC 85) regulations to this listing.	Comment noted. USACE will adhere to all applicable federal requirements pertaining to the management, transport, and disposal of radioactive waste associated with the Proposed Action. <i>No change was made to the Final EA to address this comment.</i>
19	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Table 3.10-1, Regulations and Guidance Applicable to Waste	This table notes that under "Procedures to exclude receipt of hazardous waste" that 18 AAC 60.240 prohibits landfills from accepting PCB waste as defined in 40 C.F.R. 761.3. Recommendation: For characterization purposes associated with in-state disposal, a limit of 1 ppm PCBs applies. This is because wastes with PCB concentrations >1 ppm are currently not accepted at any landfill in Alaska.	<i>The 18 Alaska Administrative Code (AAC) 60.240 entry in Table 3.10-1 of the Final EA was revised to note that wastes with PCB concentrations >1 ppm are currently not accepted at any landfill in Alaska.</i>
20	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Section 3.10.2.1, Non-Radioactive Regulated Materials and Solid Waste; ACM disposal	This page notes that "The disposal of ACM in Alaska is regulated by ADEC. Facilities being considered by USACE for the disposal of non-radioactive ACM generated by the Proposed Action include: <ul style="list-style-type: none"> • Fort Greely Landfill No. 8 • Delta Junction Landfill, approximately 9.4 miles north of Fort Greely" Recommendation: ADEC is unaware of a permitted landfill named "No. 8" at Fort Greely. Please confirm that this landfill is a permitted landfill under ADEC. Additionally, the Delta Junction Landfill is only permitted to accept limited amounts of non-Regulated Asbestos Containing Material [Non-RACM].	USACE is aware of the differences in disposal requirements for regulated asbestos-containing material (RACM) and Non-RACM. The discussion of ACM presented in the Draft EA is simplified to address a general audience; hence the use of "...certain types of non-radioactive ACM..." in Section 3.10.2.1 of the Draft EA. USACE and the decommissioning contractor will manage and dispose of each type of ACM accordingly and in coordination with the State of Alaska, Fort Greely, potential disposal facilities, and/or other regulatory agencies as applicable. <i>References to "Fort Greely Landfill No. 8" were revised to "Fort Greely C&D [construction and demolition] Landfill" in the Final EA. The distance to the Delta Junction Landfill was revised in the</i>

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Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
			<p>As such, waste material classified as Regulated Asbestos Containing Material [RACM] is not permitted for disposal at this facility. Please revise to specify the type of Asbestos Containing Material that may be considered for disposal at the Delta Junction Landfill. Also, please confirm and correct the location of the Delta Junction Landfill as this landfill is located south of the main entrance to Fort Greely.</p>	<p><i>Final EA to “approximately 4.4 miles (in a direct line) southwest of the SM-1A site. A map showing the locations of the Fort Greely C&D Landfill and the Delta Junction Landfill was added as Figure 3.10-1 in the Final EA. A map showing the locations of temporary waste staging areas on Fort Greely and on-post waste transportation routes was added to the Final EA as Figure 2.2-1.</i></p>
21	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Section 3.10.2.1, Non-Radioactive Regulated Materials and Solid Waste; ADEC oversight of petroleum-contaminated soils	<p>This page notes that "Treatment and/or disposal of petroleum-contaminated soils is regulated by the ADEC Solid Waste Program. The remediation of petroleum-contaminated sites is managed by the ADEC Contaminated Sites Program."</p> <p>Recommendation: The ADEC Solid Waste Program regulates disposal of polluted soil only when it is considered for acceptance at a landfill. The ADEC Contaminated Sites Program regulates all other treatment and management of contaminated soil as well as any work that occurs in a known contaminated site. As such, additional clarification is needed in this section.</p>	<p>Comment noted. USACE will continue to coordinate with the State of Alaska and other federal, state, and local agencies as applicable during the Proposed Action.</p>
22	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Section 3.10.2.2, Non-Hazardous Solid Waste; non-hazardous solid waste	<p>Non-hazardous solid wastes include (USEPA 2014):</p> <ul style="list-style-type: none"> • Garbage (e.g., milk cartons and coffee grounds) • Refuse (e.g., metal scrap, wall board, and empty containers) • Other discarded materials, including solid, semisolid, liquid, or contained gaseous materials resulting from industrial, commercial, and similar activities. <p>Recommendation: Please note that State of Alaska regulations do not include liquids as solid waste.</p>	<p><i>The third bullet in Section 3.10.2.2 was revised in the Final EA to the following: "Other discarded materials resulting from industrial, commercial, and similar activities"</i></p>

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Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
23	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Section 3.10.2.2, Non-Hazardous Solid Waste; MSW / C&D disposal	<p>This page notes that "MSW and C&D waste generated on Fort Greely can be disposed of at the following on-and off-post facilities:</p> <ul style="list-style-type: none"> Fort Greely Inert Waste Landfill: This 4.5-acre landfill is on Fort Greely (Landfill Road) and is permitted for the disposal of most C&D, inert materials, and non-regulated ACM (ADEC 2020a) City of Delta Junction Landfill: This landfill is in the City of Delta Junction and accepts C&D waste, such as wood, sheet rock, metal, and glass materials, and requires an application process. The 93-acre landfill is authorized to dispose of an annual average of less than 20 tons per day of domestic and commercial refuse, and also allows disposal of non-hazardous sewage sludge (State of Alaska Department of Environmental Conservation 2019). Fairbanks North Star Borough Solid Waste Facility: This landfill is on the south side of Fairbanks and accepts C&D wastes and MSW, as well as recycling. Full capacity of the MSW disposal area and the C&D disposal area is anticipated to be met in 2054 and 2023, respectively (Fairbanks North Star Borough DPW 2020). Other permitted off-post disposal facilities in areas near Fort Greely may also be considered for disposal or recycling of MSW and C&D waste generated during the Proposed Action. <p>Recommendation: Although likely, disposal or recycling of C&D waste at these facilities, or other permitted facilities near Fort Greely, will require coordination with the ADEC Solid Waste Program for waste characterization efforts [...]</p>	<p>USACE will continue to coordinate with the State of Alaska regarding the disposal of waste associated with the Proposed Action.</p> <p><i>Text referenced in the reviewer's comment was revised in Section 3.10.2.2 of the Final EA to the following: "MSW [municipal solid waste] and C&D waste generated on Fort Greely can be disposed of at the following on-and off-post facilities, as applicable," "Delta Junction Landfill (Figure 3.10-1): This landfill is in the city of Delta Junction and accepts MSW as well as C&D waste such as wood, sheet rock, metal, and glass materials. An application process is required..."</i></p>

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Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
			<p>Also, since the Fort Greely Inert Waste Landfill cannot accept MSW, the first part of this statement needs to be revised. Additionally, given that the City of Delta Junction Landfill accepts both MSW and C&D wastes, MSW should also be listed as an acceptable waste for this facility.</p>	
24	State of Alaska, ADEC, SPAR Division, Contaminated Sites Program	Section 3.10.2.1, Non-Radioactive Regulated Materials and Solid Waste; ADEC Solid Waste Program oversight	<p>The last paragraph in this section notes that "Treatment and/or disposal of petroleum-contaminated soils is regulated by the ADEC Solid Waste Program." This statement is partly correct and needs to be revised. Under the department regulations 18 AAC 75.325(i)(1), "A responsible person shall obtain approval before disposing of soil or groundwater from a site that is subject to the site cleanup rules." This means that there is a two step process involving two programs within ADEC.</p> <p>Recommendation: This sentence should be revised to read "Treatment and/or disposal of petroleum-contaminated soils is regulated by ADEC Contaminated Sites Program and Solid Waste Program." There are three known contaminated sites present at the SM-1A Nuclear Reactor project location, and any contaminated media excavated for transport and disposal will require completion of ADEC's "Contaminated Media Transport and Treatment or Disposal Authorization Form" (January 2020). The Contaminated Sites Program project manager will review and approve of the transport, treatment and/or disposal of the media. Any media going to a landfill within Alaska will require additional approval by the destination landfill and the ADEC Solid Waste Program.</p>	<p>Comment noted. USACE will coordinate with Fort Greely and the State of Alaska as applicable regarding these sites during implementation of the Proposed Action. <i>No change was made to the Final EA to address this comment.</i></p>
25	State of Alaska, ADEC, Environmental Health Division,	Section 3.10.3.2, Proposed Action Alternative; waste	<p>All waste would be segregated and characterized at the point of removal or excavation. Following characterization, radioactive waste and non-radioactive regulated solid waste would be immediately packaged on the SM-1A site (i.e.,</p>	<p>Comment noted. This text is describing the waste segregation / characterization process generally and is not intended to convey the precise sequence of activities. Waste characterization and segregation will be conducted during the</p>

Table 8.4-1: Draft EA Comment Summary

Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
	Solid Waste Program	segregation / characterization	<p>would not be stockpiled) and temporarily staged in accordance with applicable regulations at one or more areas on Fort Greely until ready for transport to the contiguous 48 states for disposal. Nonradioactive solid waste would be loaded into typical dump trucks or in end-dump roll-off containers, covered, and transported directly to on-post or off-post landfills or recycling facilities.</p> <p>Recommendation: Characterization should be completed prior to removal or excavation to allow for proper segregation. This is also crucial for proper demolition, handling, and storage of wastes that contain any sources of contamination. As worded, it is unclear if all wastes will be properly characterized prior to demolition. Please provide additional clarification.</p>	<p>Proposed Action in accordance with the WMDP and/or other plans and procedures that will be prepared by USACE and the decommissioning contractor in coordination with the State of Alaska. <i>No change was made to the Final EA to address this comment.</i></p>
26	State of Alaska, ADEC, Environmental Health Division, Solid Waste Program	Section 3.10.3.2, Proposed Action Alternative; petroleum-contaminated soils	<p>This page notes that "Excavated soils determined to be contaminated with petroleum residues only (i.e., not radiologically contaminated) would be segregated, and USACE would coordinate with Fort Greely regarding their treatment and/or disposal."</p> <p>Recommendation: The ADEC Solid Waste Program regulates disposal of polluted soil only when it is considered for acceptance at a landfill. The ADEC Contaminated Sites Program regulates all other treatment and management of contaminated soil as well as any work that occurs in a known contaminated site. As such, additional clarification is needed in this section.</p>	<p><i>The text referenced in the reviewer's comment was revised in the third paragraph of Section 3.10.3.2 of the Final EA to the following:</i></p> <p><i>"Excavated soils determined to be contaminated with petroleum residues only (i.e., not radiologically contaminated) would be segregated, and USACE would coordinate with Fort Greely and the State of Alaska regarding their treatment and/or disposal."</i></p>
27	State of Alaska, ADNR, Statewide Abatement of Impaired Land	Section 3.10.2.1, Non-Radioactive Regulated Materials and Solid Waste; petroleum-contaminated soils	<p>Paragraph describing: "Some soils on the SM-1A site are contaminated with petroleum residues from accidental spills that have previously occurred on the site (not connected to SM-1A's operation). These spills were unrelated to the reactor's operation."</p>	<p>Comment noted. USACE will coordinate with Fort Greely and the State of Alaska as applicable regarding these sites during implementation of the Proposed Action. Also see response to Comment 8. <i>No change was made to the Final EA to address this comment.</i></p>

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Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
			<p>Recommendation: Although these soils are not connected to the operation, a plan for unanticipated contamination/contaminants should be developed listing the appropriate DEC contacts. In order for the site to be unrestricted use, these possible petroleum residues will need to be addressed either within this project or a different clean-up project. See DEC memo here for more information: https://dec.alaska.gov/media/10799/utility-right-of-way-tech-memo-sept-2018.pdf</p>	
28	State of Alaska, DMLW SAIL	Section 8; Table 8-1, Distribution of the Draft Environmental Assessment	Patty Burns' title needs to be updated [to] "Statewide Abatement of Impaired Land (SAIL) Section Chief, Division of Mining, Land, and Water."	<i>The individual's title was updated per the reviewer's comment (note that Table 8-1 in the Draft EA is now Table A-1 in Appendix A of the Final EA).</i>
29	USEPA	Abstract; unrestricted use / radioactivity dose rate criteria	<p>Unrestricted Use: The DEA notes that part of the project purpose is to release the SM-1A site for unrestricted use in accordance with U.S. Nuclear Regulatory Commission (USNRC) radiological dose criteria established in 10 Code of Federal Regulations (CFR) 20.1402, Radiological criteria for unrestricted use and adopted by the Army.</p> <p>Recommendation: The SM-1A was decommissioned in 1972 and has been maintained in SAFSTOR condition since that time. EPA recommends that the EA include analysis of the referenced 1970's radioactivity dose rate criteria required for unrestricted use, and if these criteria are still current.</p>	Comment noted. The requested analysis is outside the scope of the EA. As stated in the Draft EA, it is USACE's intent to release the SM-1A site for unrestricted use in accordance with USNRC radiological dose criteria established in 10 CFR 20.1402, <i>Radiological criteria for unrestricted use</i> , which are the current criteria adopted by the Army. <i>No change was made to the Final EA to address this comment.</i>
30	USEPA	Section 2.2, Description of the Proposed Action; radioactive waste classes (A, B, C)	Radioactive Waste: The DEA discloses that based on the low levels of residual radioactivity at SM-1A, it is anticipated that radioactive waste to be generated during the Proposed Action would be classified as either Class A, Class B, or Class C low-level radioactive waste, in accordance with 10 CFR 61.55.	<i>Table 2.2-3 was added to the Final EA summarizing low-level radioactive waste (LLRW) classifications as defined in 10 CFR 61.55.</i>

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			<p>Recommendation: EPA recommends the EA explain the difference between the radioactive waste classes to better inform the reader of associated radioactivity risks.</p>	
31	USEPA	Section 1.2.1, SM-1A Location and Setting; radioactive waste shielding / transport	<p>Radioactive Waste: The DEA states that radioactive materials and residual radioactive contamination remaining at SM-1A are present in the Vapor Container (e.g., reactor equipment such as the Reactor Pressure Vessel [RPV], steam generator, pumps), the spent fuel pit, waste tanks pit, Demineralizer Room, concrete foundation slabs of Buildings 606 North and J-5, and soils underlying and adjacent to those buildings. The DEA discloses that the RPV is the most radioactive item remaining at SM-1A.</p> <p>Recommendation: EPA recommends the EA describe radiation shielding, what is necessary to provide radiation shielding and explain the dose rate requirements. The description and explanation should include the potential consequences should the custom-fabricated container fail.</p>	<p>As stated in Section 3.7.3 of the Draft EA, the transportation of radioactive waste generated by the Proposed Action would occur in a manner consistent with that analyzed by USNRC in the <i>Generic Environmental Impact Statement (GEIS) on Decommissioning of Nuclear Facilities, Supplement 1</i> (NUREG-0586) and <i>Final Environmental Statement on the Transportation of Radioactive Material by Air and Other Modes</i> (NUREG-0170). These documents determined, respectively, that most potential environmental impacts from the decommissioning of nuclear facilities are small, and that risks to workers and the general public from exposure to radioactive material during transport (including normal and accident conditions) are low when packaged in accordance with applicable regulatory requirements. The relevant analyses and conclusions of these documents are incorporated in the Draft EA by reference (see Draft EA Section 1.8). <i>No change was made to the Final EA to address these comments.</i></p>
32	USEPA	Section 3.7.3.2, Proposed Action Alternative - Fort Greely and Regional Transportation Networks; radioactive waste shielding / transport	<p>Radioactive Waste: The DEA also indicates that the RPV would require shipment in a custom-fabricated container in accordance with 10 CFR 71 to provide the necessary radiation shielding and meet applicable external dose rate requirements.</p> <p>Recommendation: EPA recommends the EA describe radiation shielding, what is necessary to provide radiation shielding and explain the dose rate requirements. The description and explanation should include the potential consequences should the custom-fabricated container fail.</p>	<p>See response to Comment 31.</p>

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Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
33	USEPA	Section 3.3.2.3, Groundwater; groundwater / groundwater wells	<p>Groundwater: The DEA states that three deactivated wells at Fort Greely are associated with the former operation of SM-1A. Supply Wells No. 11 and No. 12 provided cooling water for the reactor when it was operational. The DEA discloses that treated primary coolant water from SM-1A that met radiological release criteria was discharged to Recharge Well No. 13. (also referred to as the “dry well”).</p> <p>Recommendation: EPA recommends the EA disclose groundwater radioactivity level if that occurred. EPA further recommends that the EA:</p> <ul style="list-style-type: none"> • Disclose and explain any data on waters discharged into the wells, including measurements such as daily flow rates and acceptance criteria. • Summarize and explain data on how much groundwater was pumped during operations and what the radioactivity was when it was pumped. • Analyze and discuss whether groundwater radioactivity is a problem now and any potential consequences. Explain any changes in radioactivity levels may be different now, than during operations. • Disclose any uncontrolled releases and potential for a radioactive plume to be moving through the river. 	<p>Comment noted. The analysis of treated cooling water that was released from SM-1A during its operation is outside the scope of the EA. USACE has determined through previous studies that residual radioactivity exceeding applicable regulatory criteria is not a concern in or around Well No. 13, in groundwater underlying SM-1A and Fort Greely, or in surface waters adjacent to or downstream of Fort Greely. As stated in the Draft EA, USACE intends to decommission Well Nos. 11, 12, and 13 in accordance with applicable ADEC regulations and requirements set forth in 18 AAC 80.015(e). <i>No change was made to the Final EA to address this comment.</i></p>
34	USEPA	Section 3.3.3.2, Proposed Action Alternative [Environmental Consequences]; groundwater wells / impacts	<p>Groundwater:</p> <p>The DEA states that the Proposed Action Alternative would not involve installing new groundwater withdrawal wells or the injection of wastewater to groundwater wells.</p> <p>Recommendation: Inactive wells associated with the former operation of SM-1A (Supply Wells No. 11 and 12, and Recharge Well No. 13) would be decommissioned in accordance with applicable</p>	<p>Comment noted. The Draft EA text cited in the reviewer's comment (“...the Proposed Action Alternative would not involve installing new groundwater withdrawal wells or the injection of wastewater to groundwater wells...”) provides the basis for the conclusion that there would be no adverse short-term impacts on groundwater. Long-term impacts would be beneficial because the decommissioned wells would no longer</p>

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			<p>Alaska Department of Environmental Conservation regulations and requirements set forth in 18 Alaska Administrative Code ((AAC) 80.015(e) after associated pumps, pipes, and concrete structures are removed, characterized, and disposed of according to state and federal regulations). The DEA concludes that, “there would be no adverse short-term impacts on groundwater.” Therefore, EPA recommends including the analysis of potential short-term, long-term and cumulative impacts to groundwater from the project to support statements made in the EA or disclose why the analysis is not included.</p>	<p>require management by Fort Greely or USACE. Cumulative effects on groundwater are not specifically addressed in Section 4 of the Draft EA because the Proposed Action would not contribute to adverse short-term or long-term impacts on groundwater at or near Fort Greely. <i>No change was made to the Final EA to address this comment.</i></p>
35	USEPA	Section 3.6, Air Quality; NESHAP	<p>Air Quality: The DEA states, “Through the National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61), the CAA dictates specific regulatory limits for source categories that emit radionuclides.</p> <p>Recommendation: It is anticipated that potential emissions of radionuclides during the Proposed Action would remain well below applicable National Emission Standards for Hazardous Air Pollutant thresholds specified in the CAA.” If this project is not licensed by the Nuclear Regulatory Commission, regulated under 40 CFR 191, subpart B (disposal of spent nuclear fuel, high-level and transuranic radioactive wastes) then the National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61, subpart I should apply. It is noted in the DEA section 3.11 that the levels of radioactive contamination are low. However, as part of the EA “Proposed Action,” the removal activities (demolishing nuclear facilities) will potentially create radioactive airborne contamination. As noted in 40 CFR Part 61, subpart I, Paragraph 103 (a), compliance is determined with the use of EPA computer code COMPLY or alternative requirements of appendix E.</p>	<p>Comment noted. An official regulatory review to determine applicable requirements regarding National Emission Standards for Hazardous Air Pollutants (NESHAP) associated with the Proposed Action would be conducted following selection of the decommissioning contractor and award of the decommissioning contract. Also see EA Section 3.6.1.1. <i>No change was made to the Final EA to address this comment.</i></p>

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			EPA recommends that this information be added in the EA or explanation of why it is omitted.	
36	USEPA	Section 3.6, Air Quality; NAAQS / AAAQS	<p>The DEA discusses why lead and ammonia are not considered and does not address why the rest of the NAAQS/AAAQS are not quantified as part of this assessment.</p> <p>Recommendation: EPA recommends:</p> <ul style="list-style-type: none"> • Including a brief description of the sources of emissions of each pollutant be included in the EA to support the basis for only assessing particulate matter (PM). For example, the DEA indicates that there are no nearby airfields where lead is emitted, therefore no lead emissions are calculated. • Use of our EJSCREEN tool to learn more about lead and other environmental hazards in the project area. (EJSCREEN: Environmental Justice Screening and Mapping Tool US EPA) • Discussing asbestos control measures that will be implemented during the Project implementation. This information is absent in the DEA. • Including in the EA the following additional information to improve the environmental analysis of this section: <ul style="list-style-type: none"> ○ A map depicting the nearest nonattainment area (Fairbanks, AK) and the distance from Fort Greeley to Fairbanks. ○ Potential impacts the Project may have on the Fairbanks nonattainment area. EPA appreciates the discussion within the DEA of how Fairbanks emissions impact air quality at Fort Greeley. ○ Data on current ambient air quality levels for the NAAQS/AAAQS to support the basis for only analyzing PM. The DEA states that only PM was analyzed. 	<p>Comment noted. As stated in Section 3.6.1.1 of the Draft EA, Fort Greeley is in a region designated by USEPA as unclassifiable and/or in attainment for all criteria pollutants regulated by the NAAQS. Emissions from the Proposed Action would not substantively contribute to the degradation of local or regional air quality given its relatively small scale and temporary duration. Therefore, other criteria pollutants regulated under the NAAQS/ AAAQS are not addressed because a General Conformity Applicability Analysis of potential emissions from the Proposed Action is not required under the Clean Air Act (CAA) General Conformity regulations. Lead and ammonia are specifically addressed to indicate that the Proposed Action would have no potential to substantially contribute to emissions of those substances and dismiss further discussion of them in the air quality analysis. Fugitive dust is the primary pollutant addressed in the air quality analysis given SM-1A's location in a setting that experiences strong winds and is influenced by fugitive emissions from nearby wildfires.</p> <p>It is noted in the Draft EA that Fairbanks is nearly 100 miles northwest of Fort Greeley and that emissions from the Proposed Action would have no potential to alter the attainment status of the air quality region containing Fort Greeley.</p> <p><i>No change was made to the Final EA to address this comment.</i></p>

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Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
37	USEPA	Section 3.6.3.2, Proposed Action Alternative [Environmental Consequences]; fugitive dust	<p>Air Quality: Section 3.6.3.2 of the DEA reiterates the Emissions Inventory for fugitive dust emission results included in Appendix B.</p> <p>Recommendation: EPA recommends the following related to fugitive dust to improve the EA:</p> <ul style="list-style-type: none"> • An explanation of why calculations are limited too: fugitive dust emissions area and combustion emissions from the additional equipment that will be used. • Include a list of anticipated hours of operation of equipment. EPA recommends the list indicate the type of equipment, model year of equipment/engine tier, hours of use and other relevant information to calculate expected emissions generated by the Project. Providing the list of equipment may help support the basis for the position provided in the DEA that the largest source of emissions is fugitive dust. The information will also provide context around the 100 tons per year emissions threshold cited in the DEA. 	<p>Comment noted. See response to Comment 36. <i>No change was made to the Final EA to address this comment.</i></p>
38	USEPA	Section 3.6.4, Air Quality BMPs; fugitive dust	<p>Additional EPA recommended Best Management Practices for inclusion in the EA:</p> <ul style="list-style-type: none"> • Develop a fugitive dust control plan for this site. This plan will indicate under what conditions to spray water, how often to spray, and roles and responsibilities. • Implement anti-idling requirements for diesel vehicles. • Regarding diesel equipment, require use of Tier 3 or Tier 4 (where available) engines for the work. This will reduce NOx and PM combustion emissions, which could further support the basis for excluding the quantification of combustion emissions. 	<p>Table ES-1, Table 2.3-1, and Section 3.6.4 of the Final EA were revised to note that a fugitive dust control plan would be implemented during the Proposed Action to control and minimize fugitive dust emissions.</p>

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39	USEPA	Appendix B, Air Quality; air quality analysis	<p>While there is not a lot of explanatory text, it appears the authors used EPA’s AP-42 emission factors, combined with site-specific data, to calculate potential PM emissions. EPA recommends the EA include documentation on the 50% control efficiency when spraying with water. The DEA suggests that a fugitive dust control plan will be developed and implemented for this site.</p> <p>Recommendation: As previously noted, EPA recommends the plan indicate under what conditions to spray water, and roles and responsibilities.</p>	Comment noted. See response to Comment 38 .
40	USEPA	General; Section 3.7, Transportation; waste transportation	<p>The DEA discloses that radioactive waste destined for out-of-state disposal would be transported on a routine schedule (e.g., twice a week) to a rail yard in Fairbanks for transfer to trains for transit to the Port of Alaska or the Port of Whittier. The DEA further states that, “waste containers destined for out-of-state disposal will be transported on a routine schedule (e.g., twice a week) to a rail yard in Fairbanks for transfer to trains for transit to the Port of Alaska or the Port of Whittier (USACE 2020a).”</p> <p>Recommendation: During the Project webinar held January 28-29, 2021, it was made clear that the details of the radioactive waste transportation were yet to be determined. EPA recommends the EA include additional detail regarding the planned radioactive waste transport via trucks, trains and vessels destined for out of state and explain the potential safety concerns, associated risks, and any added applicable mitigation efforts while in transit.</p>	Comment noted. As stated in the Draft EA, waste transportation modes will follow established routes and adhere to applicable regulatory requirements to ensure impacts remain less-than-significant. Specific routes are not known at the current stage of planning and will be determined following selection of the decommissioning contractor and award of the decommissioning contract. USACE will coordinate with the State of Alaska and other regulatory agencies as applicable regarding waste transportation during the Proposed Action. <i>No change was made to the Final EA to address this comment.</i>

Table 8.4-1: Draft EA Comment Summary

Comment No.	Commenter Name / Agency / Organization	Section/Topic	Comment	USACE Response
41	USEPA	Section 3.10, Waste; radioactive waste mitigation	<p>The DEA states that, “the development and implementation of formal mitigation measures would not be required because potential adverse impacts from the Proposed Action would be less- than-significant.” A reader could reasonably conclude that there is a level of risk associated with the presence of radioactivity or radioactive waste.</p> <p>Recommendation: To support the statement made in the DEA, EPA recommends the EA include a definition of what is meant by “less-than-significant” in terms of radioactivity and the management of radioactive waste, and why a mitigation plan is not warranted.</p>	<p>Comment noted. Significance thresholds are defined for each resource analyzed in the EA, including radioactive waste (see Table 3.10-3). The conclusion of less-than-significant adverse impacts from the Proposed Action is based on the comparison of potential impacts to the significance thresholds as presented in the Draft EA. <i>No change was made to the Final EA to address this comment.</i></p>

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Appendices

Appendix A—Interagency/Intergovernmental Coordination for Environmental Planning

Copies of relevant stakeholder correspondence, including stakeholder and tribal outreach letters; agency responses; correspondence with the SHPO; Draft EA distribution list; public meeting materials; and public comments with responses are provided in this appendix.

1. Environmental Assessment Scoping Correspondence
2. NHPA Section 106 Consultation
3. Distribution List
4. Public Meeting Materials
5. Draft EA Public Comments Received

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Environmental Assessment Scoping Correspondence

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MD 21201



CENAB-ENE-C

July 17, 2020

USACE Baltimore District

Shawn Baker
Director of Public Works
USAG-AK FGA
P.O. Box 31269
Fort Greely, AK 99731

SUBJECT: Request for Input on the Proposal to Decommission and Dismantle the Deactivated SM-1A Nuclear Reactor Facility at Army Garrison Alaska Fort Greely, Delta Junction, Alaska

Dear Sir:

The United States Army Corps of Engineers (USACE) is seeking your input on a new proposed action. Our team has started the initial planning for the decommissioning and dismantling of the deactivated SM-1A nuclear reactor at Fort Greely, Alaska. The facility was deactivated in 1972 and partially decommissioned, with its reactor components encased in concrete and in safe storage since the early 1973. USACE requests your input on this Proposed Action as part of the National Environmental Policy Act (NEPA) process, which we are conducting in accordance with the NEPA of 1969 (42 United States Code [USC] 4321 et seq.), Council on Environmental Quality (CEQ) Regulations Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508), and 32 CFR Part 651 (Environmental Analysis of Army Actions, Final Rule).

We are seeking feedback from elected officials, regulatory agencies, and other stakeholders to provide input on the Proposed Action, potential alternatives, relevant issues, and environmental resource areas of concern. Your input will help inform and shape the environmental impact analysis that will be presented in a Draft Environmental Assessment (EA). A stakeholder list is attached. If you know of any other stakeholders, not included on that list, who would be interested in providing input on the Proposed Action, please let us know so we may include them.

The purpose of the Proposed Action is to safely remove, transport, and dispose of all materials and equipment, structures, and residual contamination associated with the facility. We will release the SM-1A site for unrestricted use in accordance with the radiological dose criteria established by the NRC at 10 CFR 20.1402 and adopted by the Army. The need for the Proposed Action is to complete the final decommissioning of SM-1A within 60 years of its final shutdown in accordance with the Army's Deactivated Nuclear Power Plant Program and NRC regulations adopted by the Army Reactor Office in Army Regulation 50-7. A figure highlighting the Proposed Action is attached to this letter as an attachment.

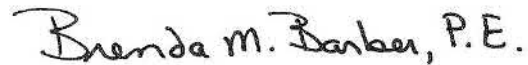
Please provide input by August 21, 2020 so that we may incorporate your input early and allow the NEPA process to proceed efficiently. USACE will conduct public outreach and take formal public comment after we prepare and publish the Draft EA. Please send your written comments or questions to my attention at:

U.S. Army Corps of Engineers, Baltimore District
2 Hopkins Plaza (09-A-10 (Cube))
Baltimore, Maryland 21201
Brenda.M.Barber@usace.army.mil

USACE would like to thank those Stakeholders that were able to attend our pre-Technical Project Planning meetings, held on June 11th and 12th, 2020. For those who were unable to attend, additional information, including transcripts and a recording of the meetings, is available online at: <https://www.nab.usace.army.mil/SM-1A>.

We were hoping to be able to host on-site TPP meetings later this summer, but the COVID-19 situation has not improved enough to do so at this time. This would have involved personnel from across Alaska and the Lower 48 - including Fort Greely staff, State regulators, the Army Reactor Office, and other key stakeholders - traveling and meeting together which may pose unnecessary health risks to the installation staff and local community, so we have made the decision to postpone the TPP at this time. We will be hosting one on one meetings with regulators to plan for additional sampling efforts at the site. We hope to host the on-site TPP early next year. We will be setting up the focused regulatory calls for the first two weeks of August.

Sincerely,



Brenda M. Barber, P.E.
Program Manager

Attachments: Proposed Action Figure; Stakeholder List



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MD 21201

June 23, 2020

USACE-Baltimore District

Edith Baller, President
Chickaloon Moose Creek Native Association, Inc.
PO Box 875046
Wasilla, AK 99687

Dear Ms. Edith Baller:

In accordance with Section 161 of Public Law 108-199, Section 518 of Public Law 108-447 and E.O. 19175, I am writing to inform you that the U.S. Army Corps of Engineers (USACE) is in the early stages of developing a plan for the decommissioning and dismantling of the deactivated SM-1A nuclear reactor at Fort Greely, Alaska. Current information about the proposed action can be found on our website at the following link and is also summarized below. <http://www.nab.usace.army.mil/SM-1A/>.

The Corps' expert radiological team, based in the Baltimore District, is working closely with the USACE, Alaska District and U.S. Army Garrison, Alaska to plan the decommissioning of the SM-1A nuclear reactor at Fort Greely. SM-1A was partially decommissioned and placed in safe storage in the early 1970s. Its reactor components are currently entombed in concrete and the site has been subject to regular inspection and monitoring by USACE. The Proposed Action would remove radioactive and non-radioactive materials from SM-1A, dismantle facility structures, and release the property for unrestricted use.

The USACE is developing a draft Environmental Assessment (EA) to address alternatives for decommissioning the SM-1A reactor. Although in the preliminary stages of development, I would like to invite you to review the information on the proposed action and evaluate whether you believe there may be potential for this action to affect corporate lands, waters, or other natural resources. This invitation is made pursuant to USACE's policy for government-to-government consultation with American Indian and Alaska Native tribes.

If you believe that corporate lands or resources may be affected by this activity and wish to initiate consultation please contact the Project Manager listed below. Additionally, the Baltimore District is initiating consultation under Section 106 of the National Historic Preservation Act (NHPA). If you are interested in consulting on the Section 106 process, please notify the Project Manager, as well.

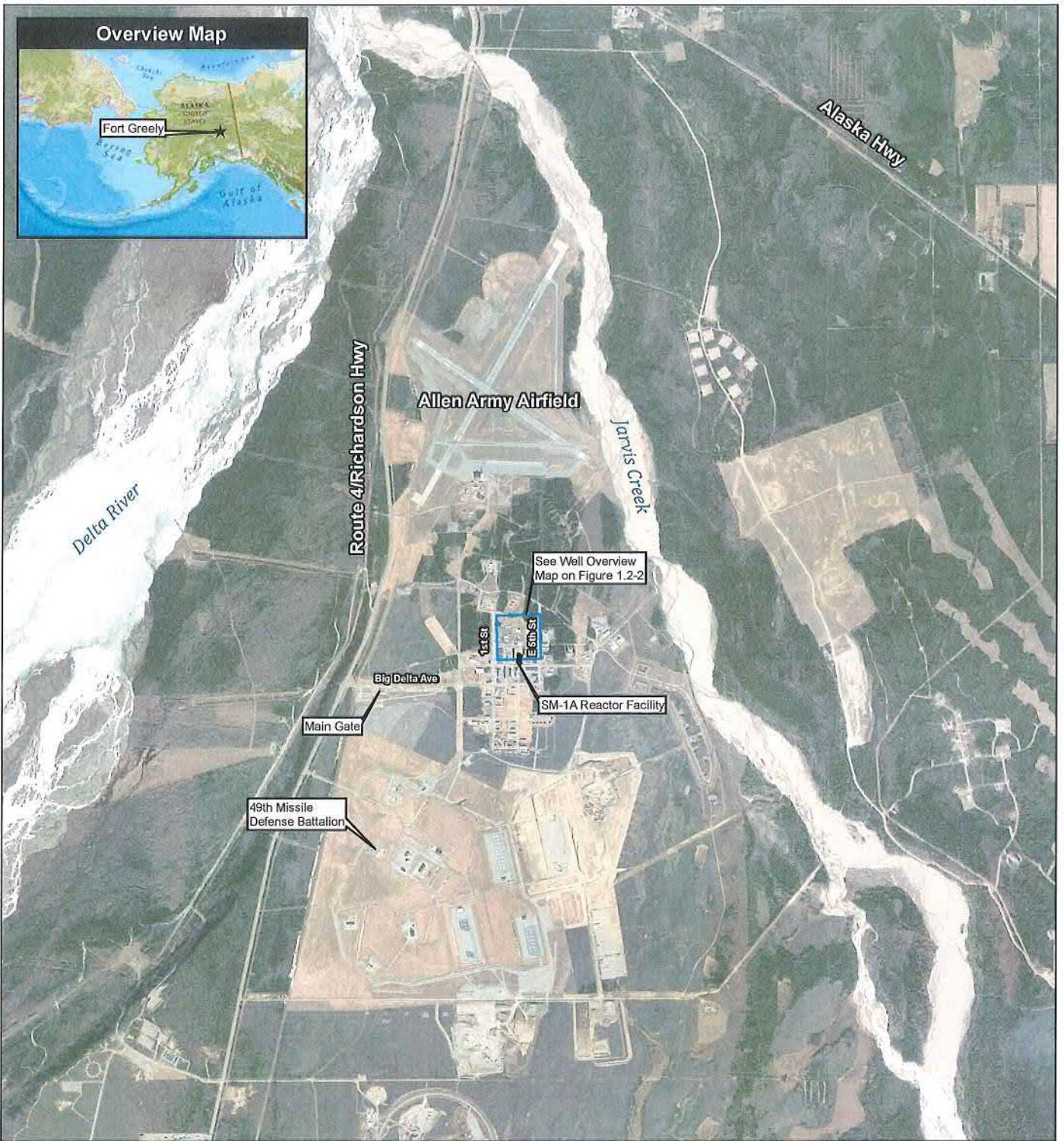
Given the current COVID-19 pandemic circumstances, the Corps is exploring virtual options for public engagement and can share those details once finalized. We are also happy to include you on our stakeholder list to receive future updates. The Corps team is committed to providing timely information about this project to all stakeholders and has a stakeholder email list for distributing periodic project updates.

We look forward to continued engagement with your offices for this project. Elizabeth Cook cc'd, is the Native Liaison for U.S. Army Garrison Alaska (Forts Wainwright and Greely) and can assist with any follow-up questions you may have about the SM-1A reactor or the decommissioning project. She can be reached by e-mail at elizabeth.a.cook80.civ@mail.mil or by phone at 907-361-3002. You may also contact the Project Manager, Brenda Barber, by phone at 410-962-0030 or via email at Brenda.M.Barber@usace.army.mil



Very respectfully,

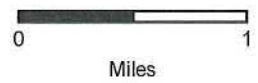
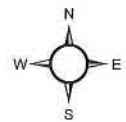
A handwritten signature in black ink, appearing to read 'John T. Litz', with a long horizontal flourish extending to the right.

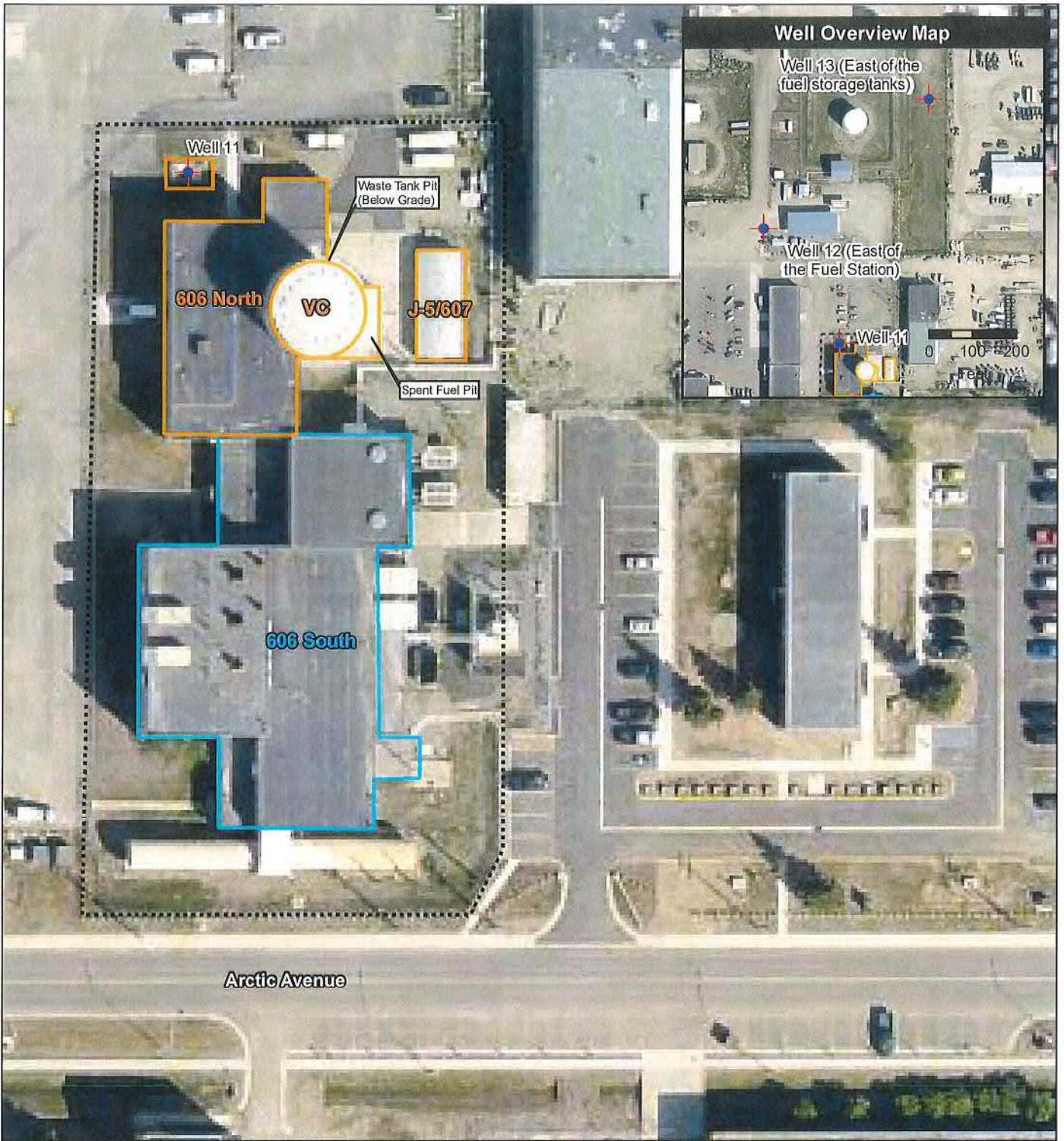
John T. Litz
Colonel, U.S. Army
Commander and District Engineer



LEGEND

-  SM-1A Reactor Facility
-  Map Inset






LEGEND

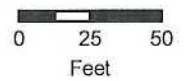
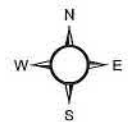
 Well

SM-1A Reactor Facility

 606 North

 606 South

 Site Perimeter Fenceline





THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

Department of Natural Resources

DIVISION OF MINING, LAND & WATER
Statewide Abatement of Impaired Land Section
Statewide Abandoned & Derelict Vessel Program

P. O. Box 111020
Juneau, Alaska 99811-1020
Main: 907.465.3400
TTY: 711 or 800-770-8973
Fax: 907.500.9011

Brenda Barber
U.S. Army Corps of Engineers, Baltimore District
2 Hopkins Plaza (09-A-10 (Cube))
Baltimore, Maryland 21201
Brenda.M.Barber@usace.army.mil

August 17, 2020

SUBJECT: Input on the Proposal to Decommission and Dismantle the Deactivated SM-1A Nuclear Reactor Facility at Army Garrison Alaska Fort Greely, Delta Junction, Alaska

Dear Brenda M. Barber, P.E.:

On behalf of Alaska Department of Natural Resources, Division of Mining, Land & Water and the Statewide Abatement of Impaired Land (SAIL) section we would like to include the following comments regarding the SM-1A Facility.

- ADNR SAIL section will request, and review reports related to Decommission and Dismantlement of SM-1A facility, due to the reactor, pipelines, and other related areas being state-selected lands.
- Proposal plan should include procedures for unanticipated contamination.

Thank you for the opportunity to comment.

Alyssa Millard

Alyssa Millard, Natural Resource Specialist
Statewide Abatement of Impaired Land (SAIL) Section
Alaska Department of Natural Resources,
Division of Mining, Land and Water
907-451-2739

Cc
Christy Colles, ADNR
Jeanne Proulx, ADNR
Adrienne Stolpe, ADNR
Lacy Hamner, ADNR
Patty Burns, ADNR



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

Department of Environmental
Conservation

SPILL PREVENTION & RESPONSE
Contaminated Sites Program

610 University Avenue
Fairbanks, Alaska 99709
Main: 907.451.2143
Fax: 907.451.2155
www.dec.alaska.gov

File: 141.38.100
141.38.035
141.38.012
141.26.020

August 20, 2020

via Electronic Delivery Only

U.S. Army Corps of Engineers, Baltimore District
ATTN: Brenda Barber, P.E.
2 Hopkins Plaza (09-A-10 (Cube))
Baltimore, Maryland 21201

RE: ADEC Contaminated Sites Comments on the Proposal to Decommission and Dismantle the Deactivated SM-1A Nuclear Reactor Facility at Army Garrison Alaska Fort Greely, Delta Junction, Alaska

Dear Ms. Barber:

The Alaska Department of Environmental Conservation (ADEC) received a request for input on the Proposal to Decommission and Dismantle the Deactivated SM-1A Nuclear Reactor Facility at Army Garrison Alaska Fort Greely, Delta Junction, Alaska. The ADEC Contaminated Sites Program (CSP) has the following comments in response to the July 17, 2020 input request letter;

1. There are already three active sites entered into the CSP Database. The sites are; Fort Greely SMDC Nuclear Reactor SM1A (ADEC File Number: 141.38.035, Hazard ID: 1706), Fort Greely SMDC Bldg. 606 PP (ADEC File Number: 141.38.012, Hazard ID: 1711), Doyon Utilities at Fort Greely Bldg 606 USTs 1 & 2 (ADEC File Number: 141.26.020, Hazard ID:27219). With the three sites already in the CS Database, please ensure all site characterization and cleanup work is conducted under the following regulations; *18 AAC 75 Oil and Other Hazardous Substances Pollution Control* (as amended through October 27, 2018) and *18 AAC 78 Underground Storage Tanks* (amended as of September 27, 2018)
2. It would be helpful if the U.S. Corp of Engineers (USACE) and the Army could determine and identify the best way to manage radioactive soil mixed with other contaminants (for example, petroleum mixed with radioactive material). It is uncertain at this time what soil treatment options for radioactive material there are within the State of Alaska.
3. The ADEC CSP would like to be included in any work plan or report reviews for field sampling work.

The ADEC CSP appreciates the opportunity to be able to provide input on this Fort Greely SM-1A project. If there are any questions, please contact me by phone at (907) 451-2182, or by email at erica.blake@alaska.gov.

Sincerely,

Erica Blake
Environmental Program Specialist

cc (via email): Ronald Crofford, Chief, DPW Environmental Division FTGLY
Leopold Palmer, FTGLY ENVR Compliance Branch Chief
Neil Lehner, ADEC Solid Waste Program
Craig Ziolkowski, ADEC Prevention, Preparedness and Response Program



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10**

1200 Sixth Avenue, Suite 155
Seattle, WA 98101-3188

REGIONAL
ADMINISTRATOR'S
DIVISION

Brenda Barber
U.S. Army Corps of Engineers, Baltimore District
2 Hopkins Plaza (09-A-10 (Cube))
Baltimore, Maryland 21201

Dear Ms. Barber:

The U.S. Environmental Protection Agency has reviewed the U.S. Army Corps of Engineers July 22, 2020, *Request for Input on the Proposal to Decommission and Dismantle the Deactivated SM-1A Nuclear Reactor Facility at Army Garrison Alaska Fort Greely, Delta Junction, Alaska* (EPA Project Number 20-0040-USACE) which initiates USACE's issuance of an Environmental Assessment. The EPA comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR 1500-1508) and Section 309 of the Clean Air Act.

This request describes the Proposed Action, which would safely remove, transport, and dispose of all materials and equipment, structures, and residual contamination associated with the Deactivated SM-1A Nuclear Reactor Facility at Fort Greely, Alaska. USACE proposes to be able to release the SM-1A site for unrestricted use in accordance with the radiological dose criteria established by the Nuclear Regulatory Commission at 10 CFR 20.1402 and adopted by the Army. USACE proposes to complete the final decommissioning of SM-1A within 60 years of its final shutdown in accordance with the Army's Deactivated Nuclear Power Plant Program and NRC regulations adopted by the Army Reactor Office in Army Regulation 50-7.

We appreciate the opportunity to review the Notice and provide scoping comments for the environmental review. We offer our assistance on this project as a participating agency. If you have questions concerning our comments, please contact the assigned NEPA Reviewers, Lauren Boldrick at (907) 271-5097 or boldrick.lauren@epa.gov or Betsy McCracken at (907) 271-1206 or mccracken.betsy@epa.gov.

Sincerely,

Andrew J. Baca
Director

EPA Scoping Comments on the proposed Decommissioning and Dismantling of the Deactivated SM-1A Nuclear Reactor Facility

Alternatives Criteria Development

The EA should identify specific criteria that would be used to (1) develop a range of reasonable alternatives, (2) eliminate alternatives considered, and (3) select the agency preferred alternative. Criteria that should be considered are the conservation of important aquatic and terrestrial habitats, maintaining wildlife and fish passage, economics, and public safety. The alternatives criteria should also incorporate substantive issues identified during the public scoping process and tribal consultation. The EA should discuss the rationale and basis for how these criteria were developed.

Range of Reasonable Alternatives

The EA should include a range of reasonable alternatives that meet the stated purpose and need for the project and that are responsive to the issues identified during the scoping process and through tribal consultation. It may be useful to analyze different decommissioning strategies or explain to the public and the decision-maker why certain strategies are not feasible for the Deactivated SM-1A Nuclear Reactor Facility. The Council on Environmental Quality (CEQ) recommends that all reasonable alternatives be considered, even if some of them could be outside the capability or the jurisdiction of the agency preparing the EA for the proposed action.

The environmental impacts of the proposal and alternatives should be presented in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision-maker and the public. The potential impacts of each alternative should be quantified to the greatest extent possible. It would also be useful to list each alternative action's impacts and corresponding mitigation measures. EPA encourages selection of feasible alternatives that will minimize environmental degradation.

Alternatives Analysis

EPA recommends that tables, maps, figures, charts, photos, etc., be used as much as possible and wherever appropriate to present and display information and specific features of alternatives so that the various alternatives can be clearly understood. We believe that an alternatives matrix table that summarizes major features and significant environmental impacts of alternatives should be provided to facilitate understanding of the alternatives, particularly distinctions between alternatives, and to provide a comparative evaluation of alternatives in a manner that sharply defines issues for the decision-maker and the public to make in regard to a reasoned choice among alternatives.

Endangered Species

The proposed project may impact protected species listed under the Endangered Species Act (ESA), their habitats, as well as state sensitive species. Evaluation of the proposal should identify the endangered, threatened, and candidate species under ESA and other sensitive species within the project corridor and surrounding areas. The EA should describe the critical habitat for the species; identify any

impacts the project will have on the species and their critical habitats; and how the proposed project will meet all requirements under ESA, including consultation with the U.S. Fish and Wildlife Service (FWS). The EA may need to include a Biological Opinion or Letter of Concurrence with FWS to document the agency's concurrence with your assessment.

Land Use

Land use impacts would include, but not be limited to, disturbance of existing land uses within decommissioning and dismantling work areas. The EA should document all land cover and uses within the project corridor, impacts by the project to the land cover and uses, and mitigation measures that would be implemented to reduce the impacts.

While the long-term restoration of the facility may be beneficial, the EA should also describe the potential short-term detrimental impacts that may occur during the project. The primary impact of decommissioning and dismantling activities on open land use types would be the removal of trees, shrubs, and other vegetation. Although these can be regenerated or replanted, their re-establishment can take up to 20 years or more, making the impacts of the proposed activities to these resources long term and in some cases permanent.

Mitigation Measures to Reduce Emissions During Construction

Mitigation measures are a foundational aspect of NEPA, which encourage the analysis of methods which help to avoid, minimize, rectify, reduce, or compensate for potential impacts. As the proposed project describes decommissioning and dismantling construction activities, EPA recommends analysis of whether these mitigation measures may encourage appropriate environmental protection. These recommendations include:

- Properly maintaining construction equipment.
- Evaluating the use of available alternative engines and diesel fuels:
 - Engines using fuel cell technology
 - Electric engines
 - Engines using liquefied or compressed natural gas
 - Diesel engines that meet the proposed EPA 2007 regulation of 0.01 g/bhp-hr (grams per brake horsepower hour)
 - Diesel engines outfitted with catalyzed diesel particulate filters and fueled with low sulfur (less than 15 ppm sulfur) fuel
 - Diesel engines fueled with biodiesel (diesel generated from plants rather than petroleum)
 - Fueling on-site equipment, e.g., mining equipment, with lower sulfur highway diesel instead of off-road diesel fuel
- Reducing construction-related traffic trips and unnecessary idling of equipment.
- Using newer, “cleaner” construction equipment.
- Installing control equipment on diesel construction equipment (particulate filters/traps (DPTs), oxidizing soot filter, oxidation catalysts, and other appropriate control devices to the greatest extent that is technically feasible.) A particulate filter (“P-trap” or oxidizing soot filter) may control approximately 80% of diesel PM emissions. An oxidation catalyst reduces PM emissions by only 20%, but can reduce CO emissions by 40%, and hydrocarbon emissions by 50%. Different control devices may be used simultaneously.
- Rerouting the diesel truck traffic away from communities and schools.

- Adopting a Construction Emissions Mitigation Plan (CEMP). A CEMP would help to ensure that the procedures for implementing all proposed mitigation measures are sufficiently defined to ensure a reduction in the environmental impact from diesel PM and NOx due to the project's construction. CEMP inclusions:
 - All construction-related engines are tuned to the engine manufacturer's specifications in accordance with the timeframe recommended by the engine manufacturer; not idle for more than 5 minutes; not tampered with in order to increase engine horsepower; include particulate traps, oxidation catalysts and other suitable control devices on all construction equipment used at the construction site; and use diesel fuel having a sulfur content of 15 ppm or less, or other suitable alternative diesel fuel. Minimize construction-related traffic trips through appropriate policies and implementation measures.
 - Implement an adaptive mitigation measure program over the project's construction phase.

Environmental Justice

EPA has developed a website with considerations and key references for environmental justice and the NEPA.¹ We encourage your use of this website and note Section VIII Disproportionately High and Adverse Impacts in the March 2016 Report of the Federal Interagency Working Group on Environmental Justice and NEPA Committee, "Promising Practices for EJ Methodologies in NEPA Reviews."² We further highlight use of the following conditions³ to help in the consideration of whether impacts to minority and low-income populations would be disproportionate and adverse.

- Exposure
 - exposure by minority populations and low-income populations to an environmental hazard that appreciably exceeds or is likely to appreciably exceed the risk or rate to the appropriate comparison group
- Human health or environmental impact
 - to minority populations and low-income populations is above generally accepted norms⁴
 - to minority populations and low-income populations exceeds or is likely to appreciably exceed the impact to an appropriate comparison group
 - predominantly borne by minority populations or low-income populations
 - occurs in minority populations and low-income populations affected by cumulative or multiple adverse exposures from environmental hazards
 - to minority populations and low-income populations is significant and adverse.

Community Involvement

EPA encourages you to ensure that your agency has a responsive and transparent community involvement process. We have found that when you are inclusive, meaning that you identify, invite, and include all interested stakeholders, you promote higher trust in the decision-making process. We encourage you to anticipate and respond to the community's concerns, fears, and points of confusion by being readily available, accessible, and quick to respond in your communications. We recommend promoting open and frequent two-way communication and practicing active listening with the community during public meetings and/or consultations. We find that the community is more engaged in

¹ Accessed online 6/24/19 at: <https://www.epa.gov/environmentaljustice/environmental-justice-and-national-environmental-policy-act>

² Accessed online 6/21/19 at: https://www.epa.gov/sites/production/files/2016-08/documents/nepa_promising_practices_document_2016.pdf

³ Quoted from p. 45-46 of the Promising Practices report. Accessed online 6/24/19 at: https://www.epa.gov/sites/production/files/2016-08/documents/nepa_promising_practices_document_2016.pdf

⁴ 'Generally accepted norms' is used in "Appendix A, Text of Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, Annotated with Proposed Guidance on Terms" which is attached to CEQ's Environmental Justice Guidance Under the National Environmental Policy Act (1997).

the process when government officials empathize with community members and other stakeholders by treating them with courtesy and respect when they discuss their issues with the project. We encourage you to tailor community involvement approaches and activities to meet community needs by speaking plainly and not using excessive technical jargon.

Source Water Protection Areas for Drinking Water

Public drinking water supplies and/or their source areas often exist on lands under federal management. The 1996 amendments to the Safe Drinking Water Act (SDWA) require federal agencies that manage lands that serve as drinking water sources to protect these source water areas. Source Water is untreated water from streams, rivers, lakes, springs, and aquifers that is used as a supply of drinking water. Source Water Areas are the sources of drinking water delineated and mapped by the states for each federally-regulated public water system.

State agencies have been delegated responsibility to conduct source water assessments and provide a database of information about the watersheds and aquifers that supply public water systems. We recommend that USACE contact the state agency (Department of Environmental Quality or Department of Human Health Services) responsible for developing and maintaining this database to help identify source water protection areas within or downstream of the project area. Databases may contain GIS and Access information of the watersheds and aquifer recharge areas, the most sensitive zones within those areas, and the numbers and types of potential contaminant sources identified for each system.

The EA should assess and address whether the decommissioning and dismantling of the Deactivated SM-1A Nuclear Reactor Facility will impact local drinking water sources. EPA anticipates that local stakeholders and community members may have concerns on the unlikely but concerning potential of radioactive waste or spent fuel reaching their water resources. As previously stated, we encourage you to have empathetic and clear conversations about the protective measures your agency will take while undergoing the decommissioning process. Therefore, EPA recommends that the draft EA:

- Identify all federally-regulated source water protection areas and state-regulated source water protection areas, if the state agency maintains that list, within or downstream of the project area.
- Identify all activities that could potentially affect source water areas.
- Identify all potential contaminants that may result from the proposed project.
- Identify all measures that would be taken to protect the source water protection areas in the draft EA.

Water Quality

Water quality degradation is one of EPA's primary concerns. Section 303(d) of the Clean Water Act (CWA) requires the State of Alaska to identify waterbodies that do not meet water quality standards and to develop water quality restoration plans to meet established water quality criteria and associated beneficial uses. Several such waterbodies may be present in the project area depending on the alignments and alternatives being analyzed. The EA should disclose which waters may be impacted, the nature of potential impacts, and specific pollutants likely to impact those waters. It should also report those waterbodies potentially affected by the project that are listed on the State's most current EPA-approved 303(d) lists. The EA should describe existing restoration and enhancement efforts for those waters, how the project will coordinate with on-going protection efforts, and any mitigation measures that will be implemented to avoid further degradation of water quality within impaired waters. Antidegradation provisions of the CWA apply to those waterbodies where water quality standards are

currently being met. This provision prohibits degrading the water quality unless an analysis shows that important economic and social development necessitates some degradation of water quality. The EA evaluation should determine how the antidegradation provisions would be met.

Transportation

The EA should address issues that fall under the Resource Conservation and Recovery Act regarding the potential residual radiological waste impacts from transportation including: possible exposures of transport workers and the general public along the proposed transportation routes, and radiation exposure to these groups that may occur through accidents along transportation corridors. Non-radiological impacts that the EA should discuss include traffic density, weight of the loaded truck or railcar, heat from the fuel cask, and transportation accidents. Your analysis should discuss transportation to greenfield sites, with close would require closer scrutiny since the proposed modes and routes may have not been addressed before. Transportation requirements may result in the need to modify/improve or expand existing highway, rail, barge, and intermodal facilities (if more than one mode is used to reach a given site). Impacts from these related activities should be addressed in the EA as well, in terms of both their construction and operation.

Disposal of Materials

Since purpose of the Proposed Action is to safely remove, transport, and dispose of all materials and equipment, structures, and residual contamination associated with the facility, we recommend detailed and non-technical discussion of how this process will proceed for the awareness of the public and the decision-maker. Clear and concise language will allow the public to understand how the appropriate precautions and methods for the facility, with its reactor components encased in concrete and in safe storage since the early 1973, to reasonably be allowed for unrestricted use in accordance with the radiological dose criteria established by the NRC at 10 CFR 20.1402 and adopted by the Army.

When considering waste disposal options, it should be disclosed in the EA how the preferred option is suitable for the specific site materials depending on the wastefrom, volume, and radioactivity of the waste. This may be an appropriate consideration when developing the alternatives analysis so the public and decision-maker may better understand USACE's decision-making process and the potential environmental impacts. If USACE anticipates that the residual contaminated material will be dealt with by appropriate shallow disposal techniques or deep geological disposal methods, EPA recommends that appropriate geological information to assure the public of the safety and practicability of this decision.

From: [Barber, Brenda M CIV USARMY CENAB \(USA\)](#)
To: [Taylor, Kevin \(Greenville\)](#); [Kiesling, Russell](#); [Taskovic, Aleksandra](#); [Bella, Elizabeth](#)
Cc: [Hillebrand, Jeffrey T CIV USARMY CENAB \(USA\)](#); [Watters, David J CIV USARMY CENAB \(US\)](#)
Subject: [EXTERNAL] FW: Request for Input on the Proposal to Decommission and Dismantle the Deactivated SM-1A Nuclear Reactor Facility at Army Garrison Alaska Fort Greely, Delta Junction, Alaska
Date: Friday, August 21, 2020 3:44:17 AM

Hi Team
See below input on SM-1A.

Very Respectfully,

Brenda M. Barber, P.E.
U.S. Army Corps of Engineers - Baltimore District
Program Manager - Environmental and Munitions Design Center
ATTN: CENAB-ENE-C
2 Hopkins Plaza
09-A-10 (Cube)
Baltimore, MD 21201
410-962-0030 (desk)
443-253-3048 (cell)

-----Original Message-----

From: Lemanski, Mateusz J LT [<mailto:Mateusz.J.Lemanski@uscg.mil>]
Sent: Thursday, August 20, 2020 7:10 PM
To: Barber, Brenda M CIV USARMY CENAB (USA) <Brenda.M.Barber@usace.army.mil>
Subject: Request for Input on the Proposal to Decommission and Dismantle the Deactivated SM-1A Nuclear Reactor Facility at Army Garrison Alaska Fort Greely, Delta Junction, Alaska

Good afternoon Ms. Barber,

Thank you for reaching out and seeking our input on this project.
At this early stage of the project I do not see any concerns, or need for input.
Naturally I am interested in reviewing the finalized Environmental Assessment.

I am looking forward to our further cooperation.

Very Respectfully,
LT Matt Lemanski
Waterways Management Division Chief
U.S. Coast Guard Sector Anchorage
Office: (907) 428-4189

-----Original Message-----

From: Hillebrand, Jeffrey T CIV USARMY CENAB (USA)
<Jeffrey.Hillebrand@usace.army.mil>
Sent: Wednesday, July 22, 2020 6:17 AM

To: Sector Anchorage Command Center <SectorAnchorage@uscg.mil>
Cc: Barber, Brenda M CIV USARMY CENAB (USA) <>
Subject: Request for Input on the Proposal to Decommission and Dismantle the Deactivated SM-1A Nuclear Reactor Facility at Army Garrison Alaska Fort Greely, Delta Junction, Alaska

Dear Sir,

Please see attached memo documenting our approach for the above mentioned project. We are in the early planning phases for this project and would your input. We can provide additional details as needed to facilitate your input.

Please provide any initial feedback by August 21, 2020 to Ms. Brenda Barber as indicated in the attached letter (also cc'd on this email). We hope to foster a collaborative relationship with all stakeholders as we progress with our planning and our future project implementation.

We look forward to hearing from you.

Very Respectfully,

Jeffrey Hillebrand
U.S. Army Corps of Engineers - Baltimore District Project Manager -
Environmental and Munitions Design Center
2 Hopkins Plaza
09-A-09 (Cube)
Baltimore, MD 21201
Office: (410) 962-1132
Work cell: (410) 598-1500

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NHPA Section 106 Consultation

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MD 21201

June 23, 2020

USACE-Baltimore District

Edith Baller, President
Chickaloon Moose Creek Native Association, Inc.
PO Box 875046
Wasilla, AK 99687

Dear Ms. Edith Baller:

In accordance with Section 161 of Public Law 108-199, Section 518 of Public Law 108-447 and E.O. 19175, I am writing to inform you that the U.S. Army Corps of Engineers (USACE) is in the early stages of developing a plan for the decommissioning and dismantling of the deactivated SM-1A nuclear reactor at Fort Greely, Alaska. Current information about the proposed action can be found on our website at the following link and is also summarized below. <http://www.nab.usace.army.mil/SM-1A/>.

The Corps' expert radiological team, based in the Baltimore District, is working closely with the USACE, Alaska District and U.S. Army Garrison, Alaska to plan the decommissioning of the SM-1A nuclear reactor at Fort Greely. SM-1A was partially decommissioned and placed in safe storage in the early 1970s. Its reactor components are currently entombed in concrete and the site has been subject to regular inspection and monitoring by USACE. The Proposed Action would remove radioactive and non-radioactive materials from SM-1A, dismantle facility structures, and release the property for unrestricted use.

The USACE is developing a draft Environmental Assessment (EA) to address alternatives for decommissioning the SM-1A reactor. Although in the preliminary stages of development, I would like to invite you to review the information on the proposed action and evaluate whether you believe there may be potential for this action to affect corporate lands, waters, or other natural resources. This invitation is made pursuant to USACE's policy for government-to-government consultation with American Indian and Alaska Native tribes.

If you believe that corporate lands or resources may be affected by this activity and wish to initiate consultation please contact the Project Manager listed below. Additionally, the Baltimore District is initiating consultation under Section 106 of the National Historic Preservation Act (NHPA). If you are interested in consulting on the Section 106 process, please notify the Project Manager, as well.

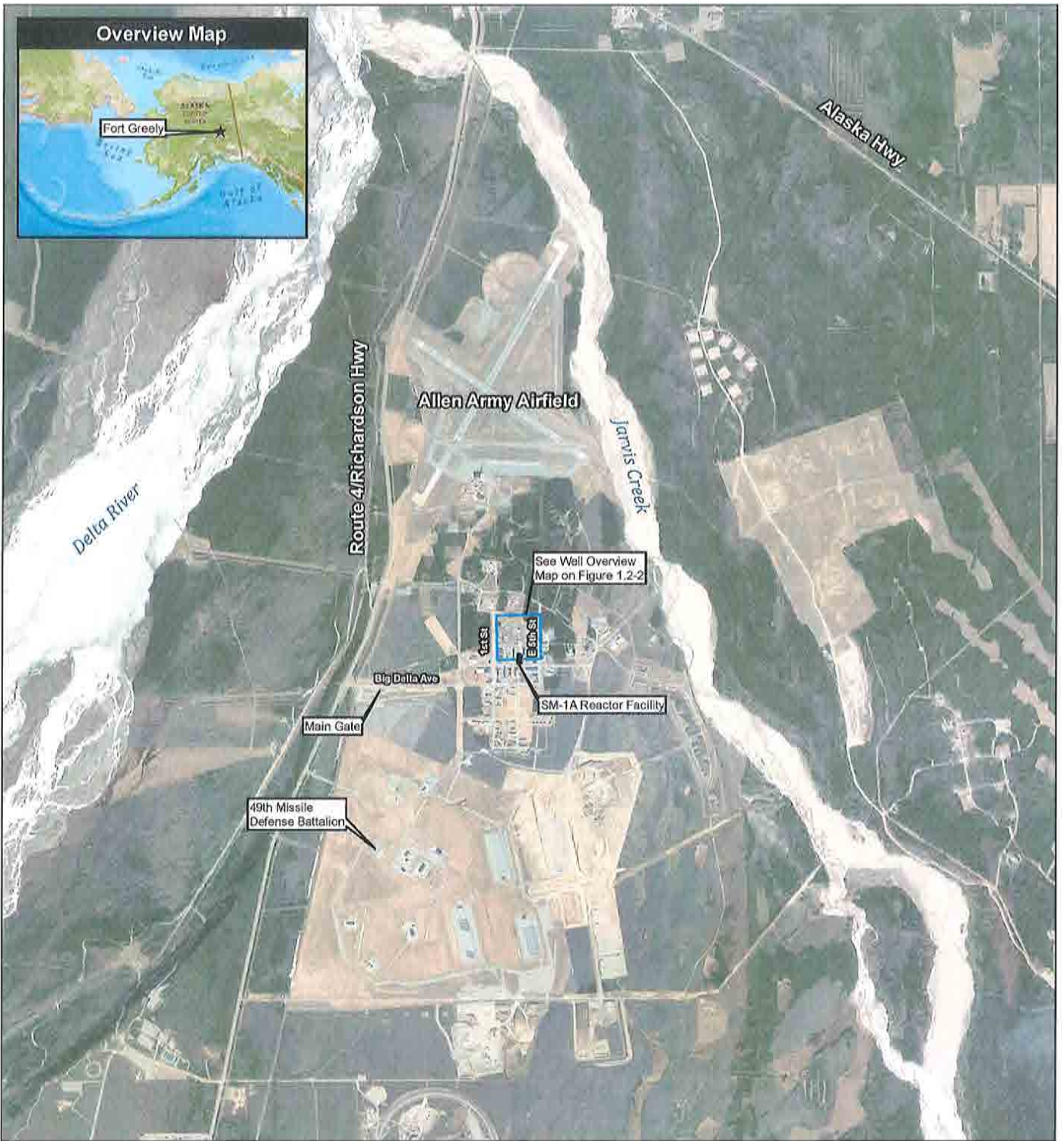
Given the current COVID-19 pandemic circumstances, the Corps is exploring virtual options for public engagement and can share those details once finalized. We are also happy to include you on our stakeholder list to receive future updates. The Corps team is committed to providing timely information about this project to all stakeholders and has a stakeholder email list for distributing periodic project updates.

We look forward to continued engagement with your offices for this project. Elizabeth Cook cc'd, is the Native Liaison for U.S. Army Garrison Alaska (Forts Wainwright and Greely) and can assist with any follow-up questions you may have about the SM-1A reactor or the decommissioning project. She can be reached by e-mail at elizabeth.a.cook80.civ@mail.mil or by phone at 907-361-3002. You may also contact the Project Manager, Brenda Barber, by phone at 410-962-0030 or via email at Brenda.M.Barber@usace.army.mil



Very respectfully,

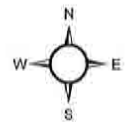
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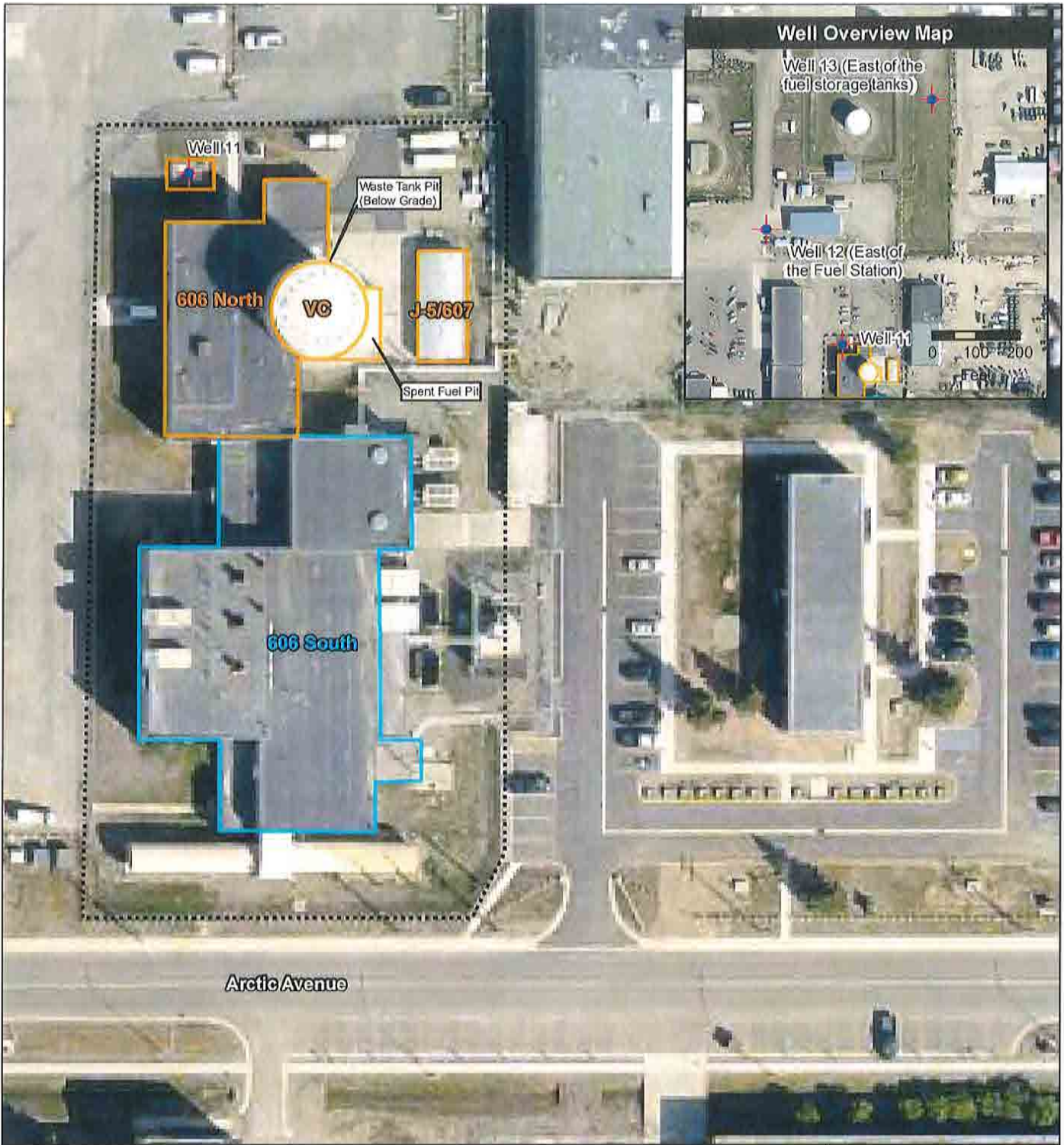
John T. Litz
Colonel, U.S. Army
Commander and District Engineer



LEGEND

-  SM-1A Reactor Facility
-  Map Inset





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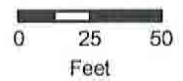
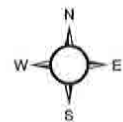
Well

SM-1A Reactor Facility

606 North

606 South

Site Perimeter Fenceline





DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MD 21201

June 23, 2020

USACE-Baltimore District

President Eileen Ewan
Gulkana Village
PO Box 254
Gulkana, AK 99586-0254

Dear President Eileen Ewan:

Respecting your tribal sovereignty and in recognition of our government-to-government relationship, the U.S. Army Corps of Engineers (Corps) invites you to consult on a new proposed action that is in its early planning stages, the decommissioning and dismantling of the deactivated SM-1A nuclear reactor at Fort Greely, Alaska. The Corps recognizes the importance of a government-to-government relationship and views Tribal coordination as a unique and necessary process for strengthening communication between the Corps and the Tribes.

The Corps' expert radiological team, based in the Baltimore District, is working closely with the U.S. Army Corps of Engineers, Alaska District and U.S. Army Garrison, Alaska to plan the decommissioning of the SM-1A nuclear reactor at Fort Greely. SM-1A was partially decommissioned and placed in safe storage in the early 1970s. Its reactor components are currently entombed in concrete. Safety is the Corps' number one priority. The safety and health of the community and workers on site are paramount. Proven controls and precautions would be used to address safety and other engineering details during all stages of the proposed SM-1A efforts. The Baltimore District radiological team safely completed the decommissioning of one of the Army's few other deactivated nuclear reactors in Galveston, Texas in 2019, using these same proven controls and precautions.

While the SM-1A decommissioning effort is still in the early stages of planning, the Baltimore District is starting outreach associated with the preparation of a draft Environmental Assessment under the National Environmental Policy Act (NEPA) and is initiating consultation under Section 106 of the National Historic Preservation Act (NHPA). Given the current COVID-19 pandemic circumstances, the Corps is exploring virtual options for public engagement and can share those details once finalized. Your input will provide meaningful data that will inform both the NEPA and NHPA processes.

Please refer to the attached fact sheet (Enclosure 1) and project website for additional project details - <http://www.nab.usace.army.mil/SM-1A/>. If you feel that this project in any way affects your government's tribal rights or resources, please reach out

to us so that we may address your concerns. The Corps team is committed to providing timely information about this project to all stakeholders and has a stakeholder email list for distributing periodic project updates. We will add your tribal POC's email address to this list to receive future updates. Due to the current COVID-19 pandemic situation, the Baltimore District project team has no immediate plans to hold in-person meetings in Alaska. In the meantime, we are happy to meet virtually should you have any questions or be interested in discussing the project further.

We look forward to continued engagement with your offices for this project. Elizabeth Cook cc'd, is the Native Liaison for U.S. Army Garrison Alaska (Forts Wainwright and Greely) and can assist with any follow-up questions you may have about the SM-1A reactor or the decommissioning project. She can be reached by e-mail at elizabeth.a.cook80.civ@mail.mil or by phone at 907-361-3002. You may also contact the Project Manager, Brenda Barber, by phone at 410-962-0030 or via email at Brenda.M.Barber@usace.army.mil

Very respectfully,



A handwritten signature in black ink, appearing to read "John T. Litz", with a long horizontal stroke extending to the right.

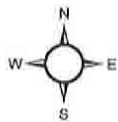
John T. Litz
Colonel, U.S. Army
Commander and District Engineer

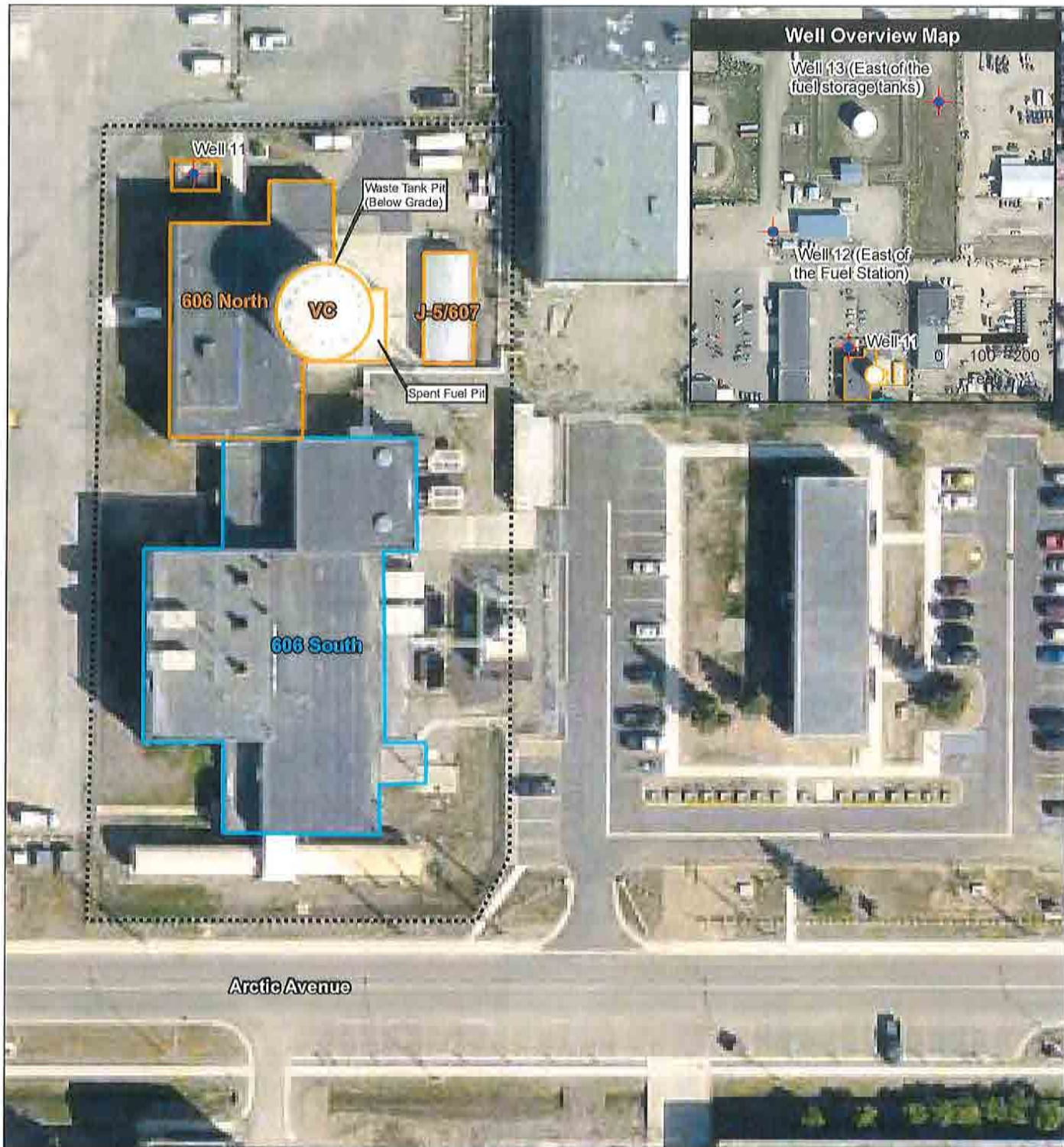
Enclosure



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-  SM-1A Reactor Facility
-  Map Inset







LEGEND

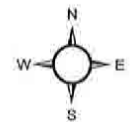
 Well

SM-1A Reactor Facility

 606 North

 606 South

 Site Perimeter Fenceline





DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201-2930

December 18, 2020

Ms. Karen Jensen
Director of Libraries
University of Alaska Fairbanks Rasmuson Library
Alaska, Polar Regions Collections & Archives
1732 Tanana Loop
Fairbanks, AK 99775

SUBJECT: Initiation of Section 106 Consultation and Invitation to be a Consulting Party for the Proposed SM-1A Reactor Facility Decommissioning and Dismantlement, United States Army Garrison Alaska Fort Greely, Alaska

Ms. Jensen:

The United States Army Corps of Engineers (USACE) proposes to decommission and dismantle the Stationary Medium Power Model 1A Deactivated Nuclear Power Plant (SM-1A) at United States (U.S.) Army Garrison Alaska Fort Greely, Alaska. The proposed decommissioning and dismantlement is a federal “undertaking,” as defined in Section 106 of the National Historic Preservation Act of 1966 (54 U.S. Code Section 300101 et seq.), and its implementing regulations, 36 Code of Federal Regulations (CFR) Part 800 (Section 106). Army Regulation (AR) 50-7, *Army Reactor Program* designates USACE as the lead Army component and single point of contact at Headquarters, Department of the Army for nuclear reactor decommissioning to ensure compliance with environmental requirements for decommissioning Army nuclear reactors. In accordance with 36 CFR 800.2(a)(2), the Department of the Army and Fort Greely have designated USACE as lead federal agency for purposes of Section 106 compliance.

In accordance with Section 106, USACE has initiated consultation for the undertaking with the Alaska Office of History and Archaeology (SHPO) by letter dated June 19, 2020 and received SHPO’s concurrence on the Area of Potential Effects (APE) on July 16, 2020. USACE has submitted a cultural resource technical report to SHPO concurrent with this letter. Attachment A provides a more comprehensive description of the proposed undertaking and the APE. USACE has determined that the SM-1A Reactor Facility is individually eligible for the National Register of Historic Places and that the proposed undertaking will have an adverse effect on historic properties.

USACE has identified consulting parties that may have a potential interest in the proposed undertaking and its effects on historic properties, in accordance with Section 106 and the National Environmental Policy Act (NEPA). As specified in 36 CFR Part 800, these consulting parties include other federal, state, regional, or local agencies; federally recognized Alaska Native tribes; historical groups that may have responsibilities for historic properties; and specialized groups and organizations that may have a scientific or historical interest in SM-1A.

USACE extends an invitation to your group to participate as a consulting party during the Section 106 process for the *SM-1A Nuclear Reactor Facility Decommissioning and Dismantlement* project. Please notify USACE within 30 days of receipt of this letter if you are interested in participating in consultation as the project moves forward, or if you have any questions or concerns about the project's effects on historic properties. Pursuant to 36 CFR Part 800.11(e) through (g), views of the public will be included in documentation of the project's effects on historic properties.

Please respond to my attention at the mailing address on the above letterhead or via email at Brenda.M.Barber@usace.army.mil.

Sincerely,

Brenda M. Barber, P.E.
U.S. Army Corps of Engineers - Baltimore District
Program Manager - Environmental and Munitions Design Center

Attachment A: SM-1A Reactor Decommissioning and Dismantlement Project Description and Area of Potential Effects

Attachment A: SM-1A Reactor Decommissioning and Dismantlement Project Description and Area of Potential Effects

Project Description

The United States Army Corps of Engineers (USACE), Baltimore District proposes to decommission and dismantle the Stationary Medium Power Model 1A Deactivated Nuclear Power Plant (SM-1A) at United States Army Garrison (USAG) Alaska Fort Greely (Fort Greely) and release the property for unrestricted use (Project). SM-1A was deactivated in 1972 and has been maintained in a safe storage (SAFSTOR) condition since that time. The decommissioning of a nuclear reactor is required within 60 years of permanent cessation of operations in accordance with United States (U.S.) Nuclear Regulatory Commission regulation at 10 Code of Federal Regulations (CFR) 50.82(a)(3), which is adopted by the Army's Deactivated Nuclear Power Plant Program in Army Regulation (AR) 50-7, *Army Reactor Program* (17 November 2016). Therefore, the decommissioning of SM-1A must be completed by 2032. In its current condition, SM-1A does not support the Army's mission in Alaska or at Fort Greely.

The Project is subject to Section 106 of the National Historic Preservation Act (NHPA) (54 U.S. Code 300101 et seq.) as implemented in 36 CFR 800 (Section 106). In accordance with 36 CFR 800.2(a)(2), the Department of the Army and Fort Greely have designated USACE as lead federal agency for purposes of Section 106.

SM-1A is on an approximately 1.5-acre fenced site in the central portion of Fort Greely, which covers approximately 6,840 acres near Delta Junction, Alaska approximately 100 miles southeast of Fairbanks. The site is along the northern side of Arctic Avenue between First Street and East Fifth Street. The deactivated reactor and associated systems are primarily in the Vapor Container (VC) adjacent to Building 606 North. Building 606 North and Building 606 South also contain critical infrastructure associated with Fort Greely's existing utility systems. Building J-5 (also known as Building 607), immediately east of the VC, is used for parts and materials storage.

SM-1A was built between 1958 and 1962 and operated from 1962 to 1972. Its primary mission was to supply electrical power and heating steam for on-post buildings and facilities at Fort Greely. SM-1A was also used as an in-service test facility to understand how the equipment would function in an arctic environment. USACE maintenance of SM-1A in its current SAFSTOR condition includes routine monitoring and inspection.

Buildings 606 North, 606 South, and J-5 are owned and occupied by Doyon Utilities, LLC, Fort Greely's utility privatization (UP) contractor. The UP contractor operates and maintains Fort Greely's utility systems under the terms of a 50-year UP contract that was issued by the Defense Logistics Agency in 2007. USACE controls access to structures and equipment associated with SM-1A with assistance from the UP contractor. Fort Greely owns the land underlying the facilities associated with SM-1A.

The Project will complete the decommissioning and dismantlement of SM-1A in accordance with an Army Reactor Office-approved Decommissioning Plan, terminate the U.S. Army Nuclear and Countering Weapons of Mass Destruction Agency-issued SM-1A decommissioning permit, and release the SM-1A site for unrestricted use in accordance with Nuclear Regulatory Commission regulations established at 10 CFR 20.1402, Radiological Criteria for Unrestricted Use and adopted

by the Army. Implementation of the Project will occur over approximately 7 years beginning in 2022 and ending in 2028.

The Project will be implemented primarily in a 1.5-acre fenced area that includes Building 606 North, the VC, Building J-5, and a paved parking area immediately north of Building 606 North. The Project also includes the removal of elements outside the fenced area.

The major phases of the Project are summarized in Table 1 and include:

1. Mobilization and Site Preparation, and Establishment of Exterior Controlled Area Boundary and Radiological Control Points
2. Building J-5 Disposition
3. Building 606 North Disposition
4. Other Exterior System Removals, Remediation, and Final Status Surveys
5. Demobilization

These phases are listed in the probable sequence that they will occur, although some variability in this sequence is anticipated due scheduling considerations, construction seasons, permitting, and the availability of personnel and specialized equipment.

The Project also includes the construction of a 1,000-square foot permanent addition to the southeast corner of Building 606 South to provide storage, office, and workspace for Fort Greely's UP contractor. The UP contractor's operations will be relocated to Building 606 South for the duration of the Project. An approximately-1,500-square-foot temporary work facility will be constructed near the southwest corner of Building 606 to support the UP contractor's operations.

All waste generated during the Project will be initially transported from the SM-1A site by trucks. Non-radioactive and non-hazardous waste will be recycled to the extent possible or disposed of at one or more on-post or off-post municipal waste and/or construction/demolition debris landfills. There are no permitted hazardous or radiological waste disposal facilities in Alaska (ADEC 2020). Therefore, all radioactive waste and non-radioactive hazardous waste (e.g., asbestos-containing material, lead-based paint, and polychlorinated biphenyls) generated by the Project will be transported to permitted facilities in the contiguous 48 states for disposal. Initial shipments of waste from the SM-1A site are expected to begin in the summer of 2023.

Site restoration activities under the Project will begin once achievement of the release criteria has been confirmed by an independent verification contractor (e.g., Oak Ridge Institute for Science and Education). The SM-1A site will be considered suitable for release for unrestricted use once it is determined that the average member of a critical group will not receive a total effective dose equivalent in excess of 25 millirems per year above background levels from residual radioactivity on the site, in accordance with radiological dose criteria at 10 CFR 20.1402.

Table 1: Project Action Summary

Project Action Phase	Description
<p>1. Mobilization and Site Preparation, and Establishment of Exterior Controlled Area Boundary and Radiological Control Points</p>	<p>Activities during this phase will include:</p> <ul style="list-style-type: none"> • Establishing an approximately 1,500-square-foot temporary work facility and 1,000-square-foot permanent addition to the southwest and southeast sides of Building 606 South, respectively, and relocating UP contractor operations (including personnel, materials, and equipment) from Building 606 North to those areas; • Relocating overhead power lines and aboveground fuel lines, as necessary, prior to heavy equipment mobilization; • Removing existing areas of vegetation in the SM-1A site consisting of small areas of grass and two trees on the southwest corner of the building; • Installing new fencing to separate the project area from Building 606 South (the fencing will include vehicle and pedestrian access control points, and could be extended further to the north to enclose additional laydown areas or waste storage locations); • Establishing radiological and security controls; • Establishing temporary or modified facilities and work support areas; • Disconnecting existing electrical power service to Buildings 606 North and J-5 and installing temporary power connections to those buildings; • Disconnecting and/or relocating existing aboveground or underground utility lines, and/or installing temporary utility service lines, as necessary; • Upgrading or reconfiguring the site’s existing perimeter security fence and access control points, as necessary; and • Mobilization of personnel and equipment to the SM-1A site.
<p>2. Building J-5 Disposition</p>	<p>Building J-5 will be demolished early in the Project to provide additional operating space on the east side of the SM-1A site. Dismantlement will include removal non-radiological M&E, the concrete floor slab, and any underlying soils impacted by radioactive or non-radioactive constituents to meet unrestricted use standards. FSSs will be conducted as necessary to ensure that residual radioactivity meets unrestricted release criteria, and the disturbed area will be subsequently backfilled with clean fill soils.</p> <p>Following the completion of these activities, this area will be used for additional workspace for the dismantlement of Building 606 North, the VC, and associated structures.</p>

Table 1: Project Action Summary

Project Action Phase	Description
<p>3. Building 606 North Disposition</p>	<p>As necessary, radiological release surveys and abatement of non-radiological hazardous waste will be conducted in Buildings 606 North (Table 1.2-1). Non-radiological hazardous waste from SM-1A may include:</p> <ul style="list-style-type: none"> • LBP; • ACM; • PCBs in paints, oils, and other materials; and • Other hazardous materials and universal waste, such as lead pipes and solder, fluorescent tubes and bulbs, and mercury switches and thermostats. <p>Non-radiological M&E and hazardous materials will be removed from unrestricted areas of Building 606 North first. Unrestricted areas are those areas outside the VC, spent fuel pit, waste tanks pit, and the Demineralizer Room. This will be followed by removal of M&E and radiologically impacted hazardous materials from, and the dismantlement of aboveground and underground structures and equipment comprising, the Demineralizer Room, spent fuel pit, VC, and waste tanks pit.</p> <p>Due to the harsh weather conditions at Fort Greely, portions of Building 606 North will be used for project support activities, material storage, material decontamination, or controlled access to radiological areas as long as reasonably possible. After indoor areas are no longer needed, hazardous and radioactive materials are removed, and painted surfaces are decontaminated to address PCB and lead paints, Building 606 North will be demolished. FSSs of the walls, ceilings, floors, structural members, remaining M&E, and other remaining components will be performed as necessary to allow for the unrestricted release of building materials prior to demolition. The dismantlement of Building 606 North will include the removal of subsurface components such as foundation slabs, footings, and underlying and/or adjacent soils. Excavated areas of the SM-1A site will be backfilled with clean fill soils, then graded and compacted to achieve positive drainage, to support release of the site for unrestricted future use.</p> <p>Non-radiological hazardous waste and waste containing low levels of radiological contamination will be packaged (i.e., containerized) in accordance with applicable USDOT, USEPA, and/or NRC requirements and transported by licensed contractors for disposal at permitted facilities in the contiguous 48 states (there are no permitted hazardous or radioactive waste disposal facilities in Alaska).</p>

Table 1: Project Action Summary

Project Action Phase	Description
4. Other Exterior System Removals, Remediation, and Final Status Surveys	Supply Well No. 11, Supply Well No. 12, and Recharge Well No. 13 will be abandoned in place and sealed in accordance with ADEC drinking water regulations set forth in 18 Alaska Administrative Code (AAC) 80.015(e) after associated pumps, pipes, and concrete structures are removed, characterized, and disposed of according to state and federal regulations. An approximately 400-foot-long concrete utilidor connecting Building 606 North with the wells described above, and an approximately 40-foot remnant pipe segment (from the waste tanks pit to the perimeter fence) associated with SM-1A’s original liquid radioactive waste discharge system, which was deactivated in 1968, will be excavated and removed. The concrete utilidor and 40-foot remnant pipe segment are approximately 3 feet and less than 6 feet bgs, respectively. All excavations will be backfilled with clean fill soils meeting applicable Fort Greely requirements. FSSs will be conducted as necessary to ensure that residual radioactivity meets unrestricted release criteria.
5. Demobilization	Temporary structures or infrastructure components used to support the prior phases of the Project will be dismantled and removed from the site. Historical markers or displays describing SM-1A may be installed during this phase in accordance with the outcome of the Section 106 consultation process. Following demobilization, no remnants of SM-1A will remain on the site.

Notes:

AAC = Alaska Administrative Code
 ACM = asbestos-containing material
 ADEC = Alaska Department of Environmental Conservation
 bgs = below ground surface
 FSS = Final Status Survey
 LBP = lead-based paint

M&E = materials and equipment
 PCB = polychlorinated biphenyl
 UP = utility privatization
 USDOT = U.S. Department of Transportation
 USEPA = U.S. Environmental Protection Agency
 VC = Vapor Container

Area of Potential Effects

The Area of Potential Effects (APE) is established as the geographic area or areas in which an undertaking may directly or indirectly cause changes in the character or use of historic properties. The potential effects to historic properties from the project include the demolition of buildings and structures, excavation in previously disturbed soils, changes to the setting, and noise and vibration from construction vehicles.

Taking these potential effects into account, the project APE is defined as the SM-1A Reactor Facility, consisting of the fenced site that includes Building 606 North, Building 606 South, Building J-5/607, Supply Well #11, and a portion of the former wastewater pipeline, as well as Supply Well #12 and Recharge Well #13 and associated pipeline outside the fence, and an 8-foot wide by 6-foot deep excavation area encompassing the concrete utility corridor that runs from Building 606 North to Supply Wells #11 and #12 (Figure 3). Direct and/or indirect project effects are not expected to extend beyond the fenced-in portions of the site, the utility corridor, and the two wells and associated pipeline outside the fence.

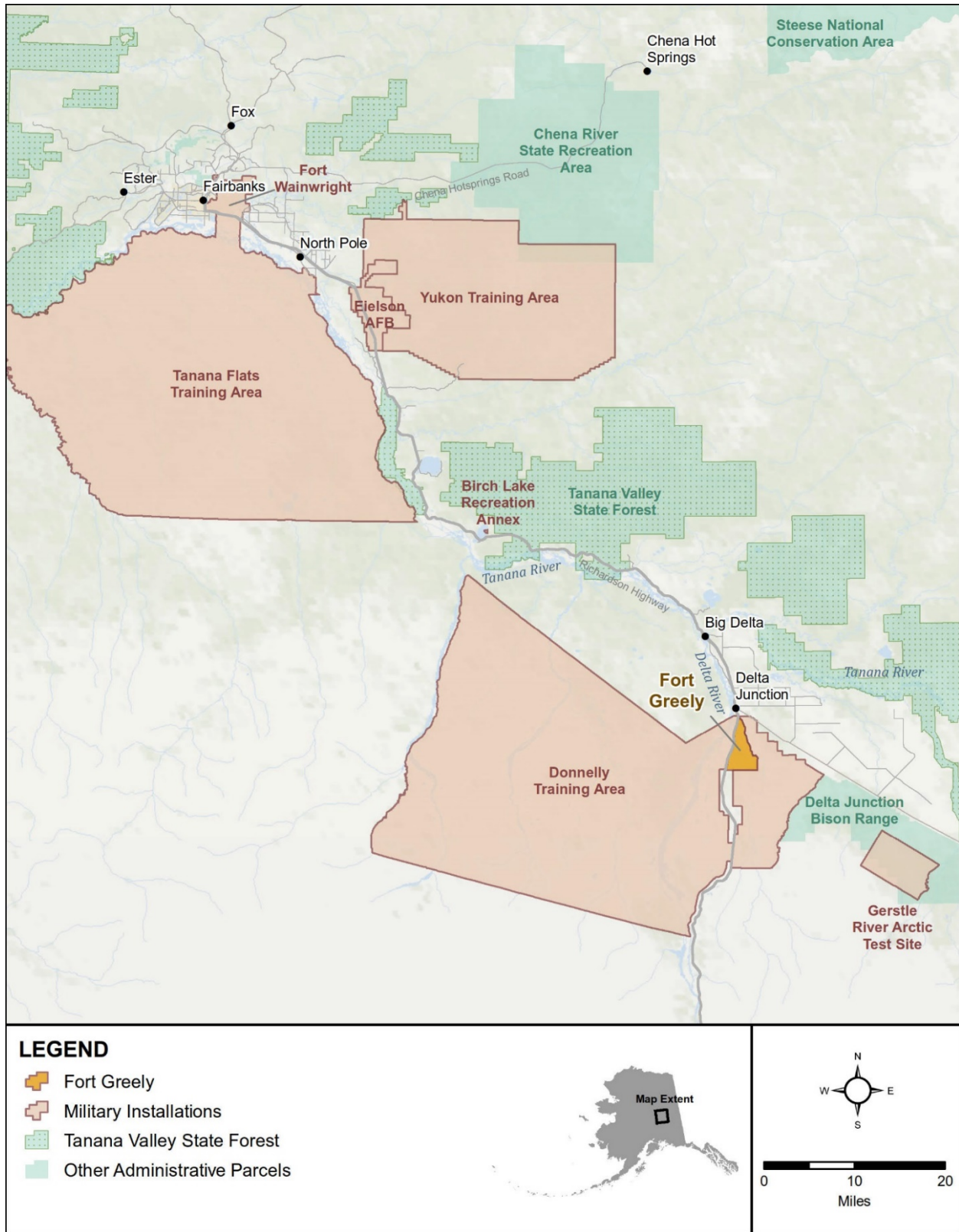


Figure 1: Location of Fort Greely



Figure 2: Location of SM-1A Reactor Facility

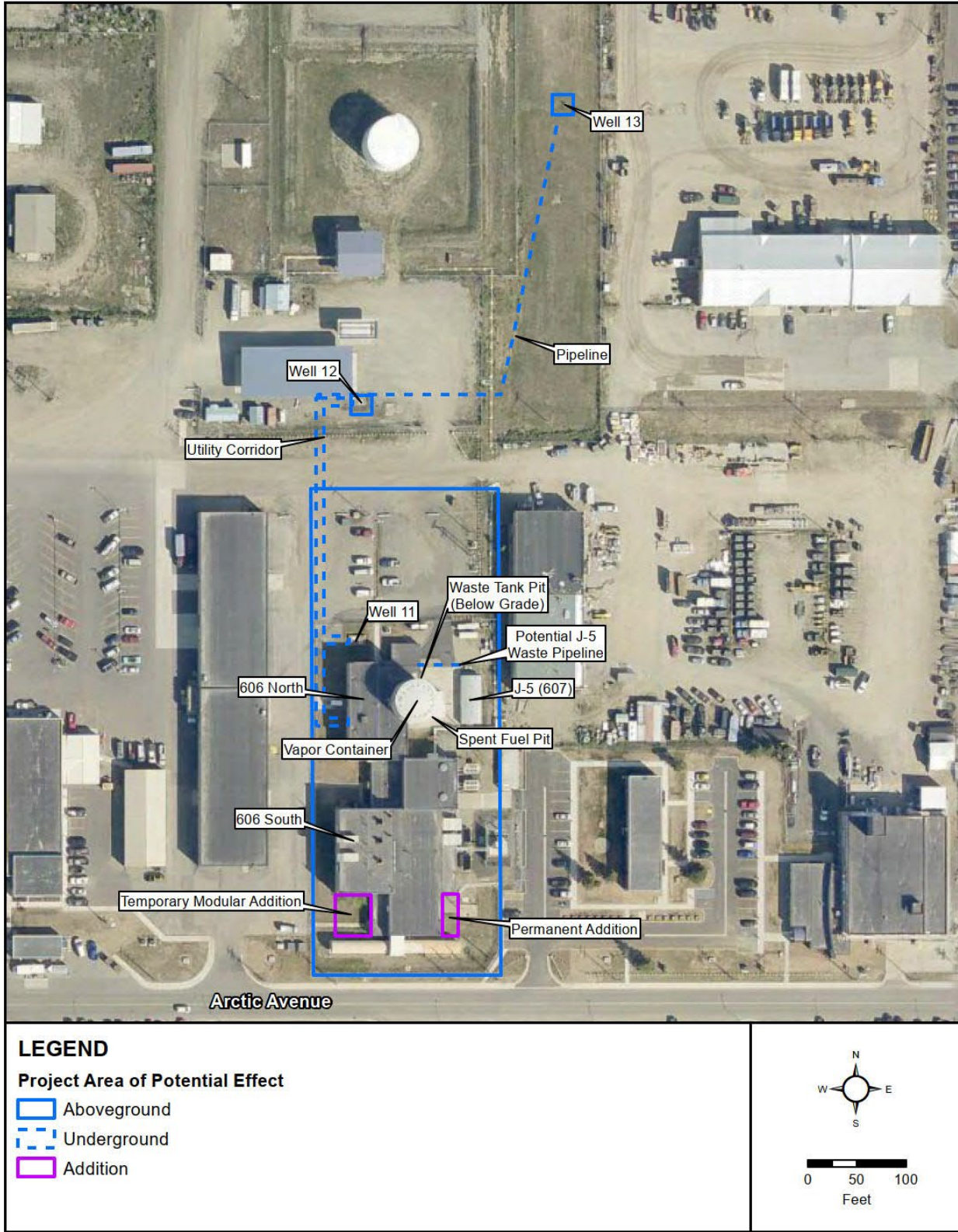


Figure 3: Project Area of Potential Effects



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

Department of Natural Resources

DIVISION OF PARKS AND OUTDOOR RECREATION
Office of History & Archaeology

550 West 7th Avenue, Suite 1310
Anchorage, AK 99501-3561
907-269-8700

<http://dnr.alaska.gov/parks/oha>

January 22, 2021

File No.: 3130-1R COE-E / 2020-00760

Brenda Barber
U.S. Army Corps of Engineers – Baltimore District
2 Hopkins Plaza
Baltimore, MD 21201-2930
Brenda.M.Barber@usace.army.mil

Subject: Decommission and Dismantle the Deactivated SM-1A Nuclear Reactor Facility at U.S. Army Garrison Alaska Fort Greely, Alaska

Dear Ms. Barber:

The Alaska State Historic Preservation Office (AK SHPO) received your correspondence (dated December 18, 2020) regarding the subject project and report titled *SM-1A Reactor Decommissioning and Dismantlement Cultural Resources Technical Report, Fort Greely, Alaska* on December 21, 2020. Our office has reviewed the referenced undertaking under Section 106 of the National Historic Preservation Act.

We concur that the SM-1A Reactor Facility continues to contribute to the Fort Greely New Post Historic District (XMH-01275)/Fort Greely Cold War Historic District (XMH-00845) [Cold War HD]. We also concur that the facility is eligible for listing in the National Register of Historic Places (NRHP) under Criterion A with national significance for its association with the USACE's prototype nuclear power program during the Cold War era.

While our office concurs that the SM-1A Reactor Facility is an historic property, we noted that the resources that comprise the property are inconsistent between the descriptive narrative and the NRHP evaluation. The narrative described the facility to include: Building 606 (North and South, XMH-00670), J-5 Storage Building (Building 607, XMH-00671), Supply Wells #11 and #12, Recharge Well #13, the Utility Corridor, and Former Wastewater Pipeline. However, the facility was later defined in the NRHP evaluation to only include the resources within the property fence: Building 606 (North and South, XMH-00670), J-5 Storage Building (Building 607, XMH-00671), and Supply Well #11. Our office believes that the SM-1A Reactor Facility should include all of the properties that were necessary for the facility's function and should not be defined by contemporary property boundary of the Central Heating and Power Plant Facility. We strongly recommend that the SM-1A Reactor Facility receive an AHRS number to include a description of the resources that comprise the facility for management purposes.

Our office also agrees that the period of significance should include the expansion of the 1955 Central Heating and Power Plant facility to accommodate the use of a nuclear power source through the end of the test in 1972. Thus, we recommend that the period of significance for the SM-1A Reactor Facility be 1958-1972 to acknowledge the period of design and construction that led to criticality of the reactor in 1962.

As the proposed project will dismantle the SM-1A Reactor Facility, we concur that a finding of Adverse Effect is appropriate for the proposed undertaking. We also concur that following the demolition of Building 606 North and construction of two additions, that the remaining portion of Building 606 South (XMH-00670) will no longer retain sufficient integrity to contribute to the Cold War HD.

We look forward to working with your office and consulting parties to resolve the adverse effect through the development of a Memorandum of Agreement (MOA). In discussion with others in the office, potential mitigation could include the development of exhibits incorporating the commemorative plaques and time capsules, the development of other written or visual public interpretation product(s) that could be incorporated into the library system, and/or interviews with individuals who worked at the SM-1A Reactor Facility. Please note that the agency official shall notify the Advisory Council of the adverse effect finding (36 CFR 800.6[a][1]).

Thank you for the opportunity to comment. Please contact Sarah Meitl at sarah.meitl@alaska.gov if you have any questions or if we can be of further assistance.

Sincerely,



Judith E. Bittner
State Historic Preservation Officer

JEB:sjm

Project name:
Fort Greely SM-1A Decommissioning

To:
Brenda M. Barber, P.E.
U.S. Army Corps of Engineers Baltimore District
ATTN: CENAB-ENE-C
2 Hopkins Plaza
Baltimore, MD 21201

From:
Patience Stuart

Date:
June 3, 2020

Memo

Subject: Area of Potential Effects for the Fort Greely Deactivated SM-1A Nuclear Reactor Facility Decommissioning and Dismantlement Project, Delta Junction, Alaska

Introduction and Purpose

The U.S. Army Corps of Engineers (USACE) proposes to decommission and dismantle the deactivated Stationary Medium Power Model 1A (SM-1A) Nuclear Power Plant (SM-1A Reactor Facility) at United States Army Garrison Alaska, Fort Greely (Fort Greely) in the Southeast Fairbanks Census Area near Delta Junction, Alaska. The proposed decommissioning project (Project) is subject to Section 106 of the National Historic Preservation Act (54 United States Code (U.S.C.) § 300101 et seq.) as implemented in 36 Code of Federal Regulations (C.F.R.) Part 800. The USACE is the lead federal agency. The purpose of this memo is to establish the Project's Area of Potential Effect (APE).

Brief History and Description

Located in the central portion of Fort Greely's New Post along Arctic Avenue between First Street and East Fifth Street, the SM-1A Reactor Facility was a single-loop 20.2 megawatt-thermal pressurized water reactor that generated electrical power and produced steam to heat on-post facilities. Construction of SM-1A at Fort Greely began in 1958 and was completed in 1962. The reactor operated from 1962 to 1972 as part of the Army Reactor Program and was deactivated from 1972 to 1973 as part of the Army Deactivated Nuclear Power Plant Program.

To operate the facility, groundwater was drawn from one of two supply wells (Well No. 11 and Well No. 12) to cool and condense exhaust steam from the reactor's turbine, with the condensate being returned to the steam generator. Steam lines provided low-pressure steam used for heating the post, and the condensate was returned to the steam generator. The post laundry facility, formerly located in Building 675, reportedly received steam directly from the SM-1A Reactor Facility's secondary system.

Cooling water was originally discharged to Jarvis Creek via an approximately one-mile, one-inch diameter steel discharge line that ran to a dilution station (Well No. 14) and then through a 0.25-mile, 12-inch diameter steel pipe. This discharge structure was deactivated in 1968, and treated cooling water was then discharged to Recharge Well No. 13 (also referred to as the "dry well") from the facility's Radioactive Waste Discharge System (RWDS), a skid-mounted distillation system.

Fort Greely's sludge drying beds at its sewage treatment plant and a landfill (Landfill No. 7) active during the 1970s may also have been associated with radioactive materials that could have been disposed there during decommissioning or that contained sludge from the SM-1A Facility.

Following deactivation in 1973, the SM-1A reactor facility was placed in a safe storage (SAFSTOR) configuration that allows radioactivity to decay before dismantlement and decontamination. The deactivation consisted of removing the nuclear fuel,

minor decontamination, shipment of necessary radioactive waste, encasing other onsite radioactive materials in a sand/grout mixture, sealing the reactor vessel, and installing appropriate warning signs and monitoring devices. The vapor container was partially filled with a grout/sand mixture, and the hatch was sealed. The liquid radioactive waste discharge lines outside the SM-1A Reactor Facility fence line, which ran about 1 mile to a dilution station at Jarvis Creek, the dilution station, and 1,700 cubic feet of contaminated soil and concrete rubble were removed between 1997 and 1999 and documented in a Record of Decision (ROD) issued by USACE in 2009 (USAG Alaska 2009). Building 670 was used to temporarily store drummed waste soil generated during a 1991 remediation project inside the SM-1A Reactor Facility fence line.

Since its placement in SAFSTOR, the SM-1A Reactor Facility has been subject to regular inspection and monitoring by USACE in accordance with AR 50-7 and the SM-1A Reactor Possession Permit Number SM1A-1-19 and previous permits. Building 606 has remained occupied by government personnel and/or contractors operating Fort Greely's conventional steam and power plant.

The SM-1A Reactor Facility is a fenced, approximately 1.5-acre site that contains the reactor building (Building 606 North), a storage building used during facility operations (Building J-5/607), the spent fuel pit, and the vapor containment structure adjacent to 606 North. Well No. 11 is northwest of Building 606 North and within the existing perimeter fence. Supply well No. 12 is located outside the perimeter fence to the north. The south end of Building 606 (Building 606 South) is also within the fenced site and contains facilities operated by Fort Greely's on-site utility contractor, Doyon Utilities, LLC (Doyon). On 28 September 2007, the utility systems and infrastructure on Fort Greely were privatized through the award by Defense Logistics Agency to Doyon Utilities, LLC in a 50 year Contract No. #SP0600-07-C-8261 (the "UP Contract").

Doyon owns Building 606 (North and South) and Building J-5/607 and operates the installation's central heat and power plant, the heat distribution system and utilidors, the electrical distribution system, the water distribution system and treatment, and the wastewater distribution system and treatment plant. The United States Department of the Army manages the land underlying Building 606 and Building J-5/607. Doyon uses Building 606 North primarily for office and storage space, but the building also contains key infrastructure needed to operate the utilities systems, including electrical switchgear, battery charging stations, water softening systems, and backup treated water for the boilers. This infrastructure is original to the operations of the SM-1A Reactor Facility.

Project Description

USACE maintains the SM-1A Reactor Facility in accordance with Army Regulation (AR) 50-7 and the current Reactor Possession Permit No. SM1A-1-19 issued by the United States Army Nuclear and Countering Weapons of Mass Destruction Agency (USANCA). Under the USACE's Deactivated Nuclear Power Plant Program, decommissioning a nuclear reactor is required within 60 years of its final shutdown to comply with AR 50-7. The deactivated and defueled SM-1A Reactor Facility has been in a SAFSTOR condition and subject to regular inspection and monitoring for 48 years. The Project would accomplish this objective by decommissioning the SM-1A Reactor Facility to a standard that allows for release of the site for unrestricted use and terminate the USANCA Decommissioning Permit for SM-1A.

The Project would remove, transport, and dispose of all materials and equipment, structures, and residual contamination; and abandon all wells associated with the SM-1A Reactor Facility in compliance with Alaska Department of Environmental Conservation (ADEC) Drinking Water Regulations (18 Alaska Administrative Code [AAC] 80.015e). Facility structures would be dismantled, including Building 606 North, which contains the vapor container, spent fuel pit, waste tank pit, and upper and lower levels of the reactor operations area. In addition, Building J-5/607 would be demolished.

Recharge and supply wells, impacted soils, and underground utilities would be removed and/or abandoned in place. Well #11 (inside the facility fence) would be abandoned in place, but the structure and some subsurface casing would be removed. The above ground structural components of the Wells #12 and #13 (outside the facility fence) would be removed with the casing left in place and abandoned. The main waste pipeline outside the fence was removed in the 1990s. A small run of this 12-inch diameter steel pipe inside the fence would be removed. The parking lot immediately north of Building 606 North, and one or more areas yet to be determined would be used as temporary lay-down staging areas.

Aside from Wells #12 and #13, the Project would not affect other structures previously associated with the SM-1A Reactor Facility that are outside of the facility fence, including Building 670, Building 675, Landfill #7, or the sludge drying areas. These structures would be addressed in the Project's decommissioning plan, but no further action would occur.

Once dismantled, materials and waste would be segregated and/or prepared onsite for transport to an appropriate permitted disposal or recycling facility. The decommissioning of the SM-1A Reactor Facility would reduce residual radioactivity to levels

that allow USACE to release the site for unrestricted use as defined in 10 C.F.R. Part 20.1402, *Radiological Criteria for License Termination* and allow USACE to restore the site to support the mission of Fort Greely's on-site utility contractor, Doyon.

During the decommissioning, Doyon would continue to occupy Building 606 South. The Project requires the reconfiguring of utility corridors and building modifications to maintain utility services and workspaces during Project activities. A permanent addition would be constructed at the southeast corner of Building 606 South after demolition of an existing non-structural shelter is removed; temporary modular trailers would be added to the southwest corner of the building to house Doyon's administrative needs during the project implementation. Utilities would be reconfigured from Building 606 North to Building 606 South to ensure no disruptions to the installation's utility services.

Following the dismantlement of the SM-1A Reactor Facility, a new addition would be built at the north end of Building 606 in the approximate footprint of the prior space so that Doyon can re-occupy the space and continue to implement the supply of Fort Greely's utility operations.

Area of Potential Effect

The APE is established as the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties. The potential effects to historic properties from the Project include the demolition of buildings and structures, limited excavation in previously disturbed soils, changes to the setting, and noise and vibration from construction vehicles. Taking these potential effects into account, the Project APE is defined as the SM-1A Reactor Facility, containing the fenced site that includes Building 606 North, Building 606 South, Building J-5/607, Supply Well #11, and a portion of the former wastewater pipeline, as well as Supply Well #12 and Recharge Well #13 outside the fence. The APE does not include facility components not affected by the Project, including Building 675, Building 670, Landfill #7 and sludge drying areas (Table 1, Figures 1-4) (USACE 2008). Direct and/or indirect Project effects are not expected to extend beyond the fenced-in portions of the site and the two wells located outside the fence.

Based on a review of the Alaska Office of History and Archaeology's Alaska Heritage Resources Survey (AHRs) and USAG Alaska's Integrated Cultural Resources Management Plan (ICRMP), the APE is within the Fort Greely New Post Historic District (AHRs XMH-1275) and the Fort Greely Cold War Historic District (AHRs XMH-845) (AHRs 2020; USAG Alaska 2020). Research indicates that, although two AHRs site numbers exist, XMH-1275 and XMH-845 refer to the same historic district and geographic boundary. The Fort Greely New Post/Cold War Historic District was inventoried from 1997 to 2000 as part of a proposed realignment of Fort Greely, the results of which were included in a Memorandum of Agreement (MOA) signed in 2000 by the Army and SHPO and was determined eligible for the NRHP in 2000 under Criterion A with a period of significance of 1946-1989 (AHRs 2020). The district contains 23 contributing buildings and three non-contributing buildings; three additional buildings have been demolished (USAG Alaska 2020; AHRs 2006). Building 606 (AHRs XMH-670) was determined eligible for the NRHP as a contributing resource to the historic district. The J-5 Storage Building/Building 607 (AHRs XMH-671) was determined not eligible for the NRHP and is non-contributing to the historic district (AHRs 2020).

Following the determination of an APE for the Project, further analysis will occur to assess the NRHP-eligibility of the SM-1A Reactor Facility (individually and as a contributing resource to the historic district), as well as Project effects to historic properties. The analysis will not include consideration of stipulations recorded in the 2000 MOA, based on communication from the Army stating that this agreement is now considered null and void.

Table 1. SM-1A Reactor Facility Components

SM-1A Reactor Facility Component	Inside fenced site	Outside fenced site	Project Actions	In APE
Building 606 North (primary SM-1A Reactor Facility building, includes vapor container, spent fuel pit, waste tank pit, and upper and lower levels of the reactor operations area) (AHRs XMH-670)	X		Demolish	Yes
Building 606 South (steam power plant) (AHRs XMH-670)	X		Modify for continued use during decommissioning; demolish small addition at southeast corner; re-route utilities from Building 606 North.	Yes

SM-1A Reactor Facility Component	Inside fenced site	Outside fenced site	Project Actions	In APE
Building J-5/607 (storage) (AHRS XMH-671)	X		Demolish	Yes
Cooling Water Supply Well #11	X		Close and abandon in place; remove well structure and some subsurface casing	Yes
Cooling Water Supply Well #12		X	Close and abandon in place; remove well structure	Yes
Recharge Well #13 (received wastewater during facility operation)		X	Close and abandon in place; remove well structure	Yes
Pipeline to Jarvis Creek/Dilution Station at Jarvis Creek (received wastewater; removed and remediated in mid 1990s)	X	X	Remove within fence site; previously removed outside fence site as part of BRAC (USACE 2009).	Yes
Building 675, (Former Post Laundry temporarily received steam-powered directly from Building 606; currently a warehouse) (AHRS XMH-711)		X	Address in Decommissioning Plan; no further action	No
Landfills and sludge drying beds (may have been associated waste during SM-1A Reactor Facility operations in 1970s)		X	Address in Decommissioning Plan; no further action	No
Building 670 (stored waste soil during remediation efforts in 1991) (AHRS XMH-710)		X	Address in Decommissioning Plan; no further action	No

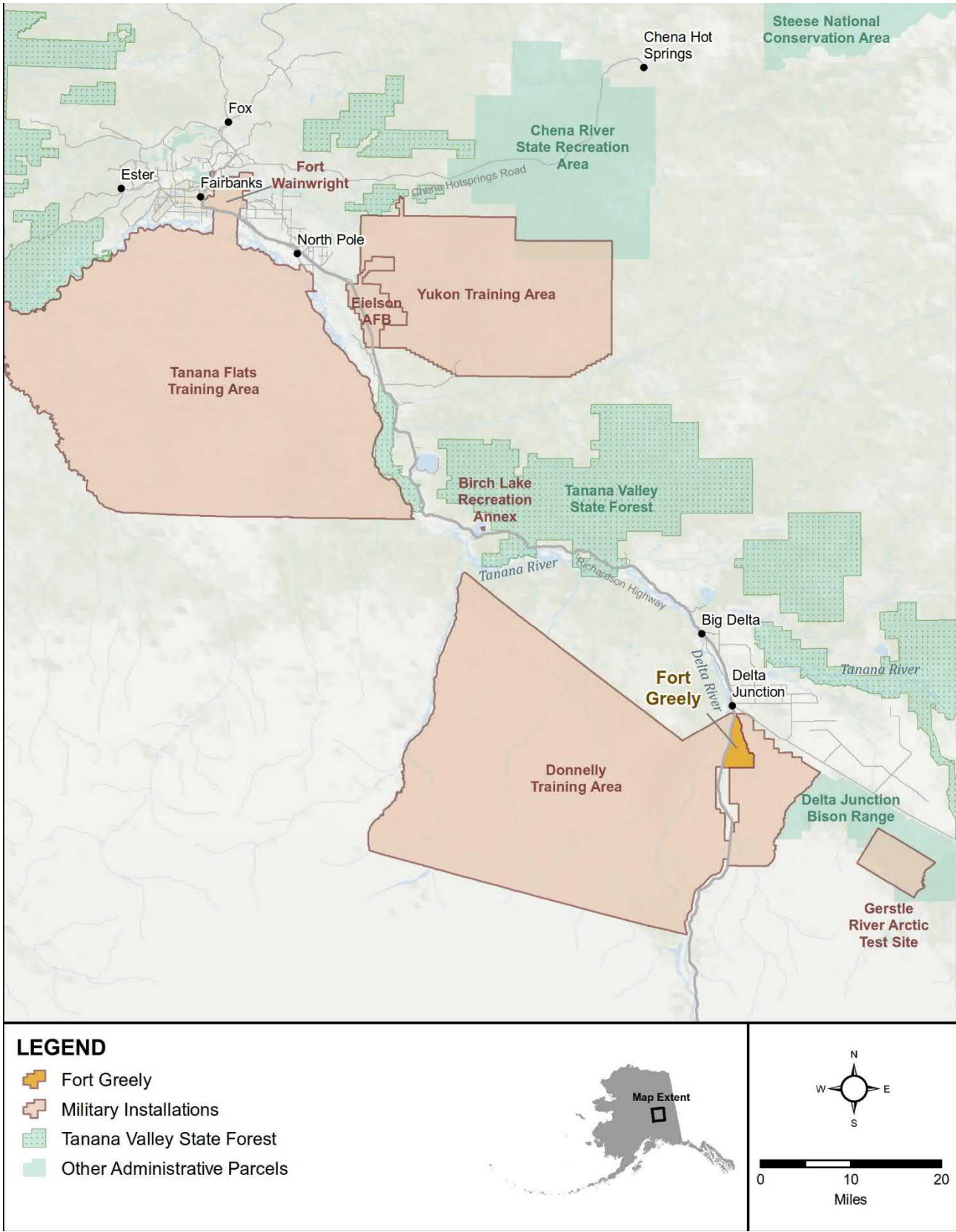


Figure 1. Location of Fort Greely

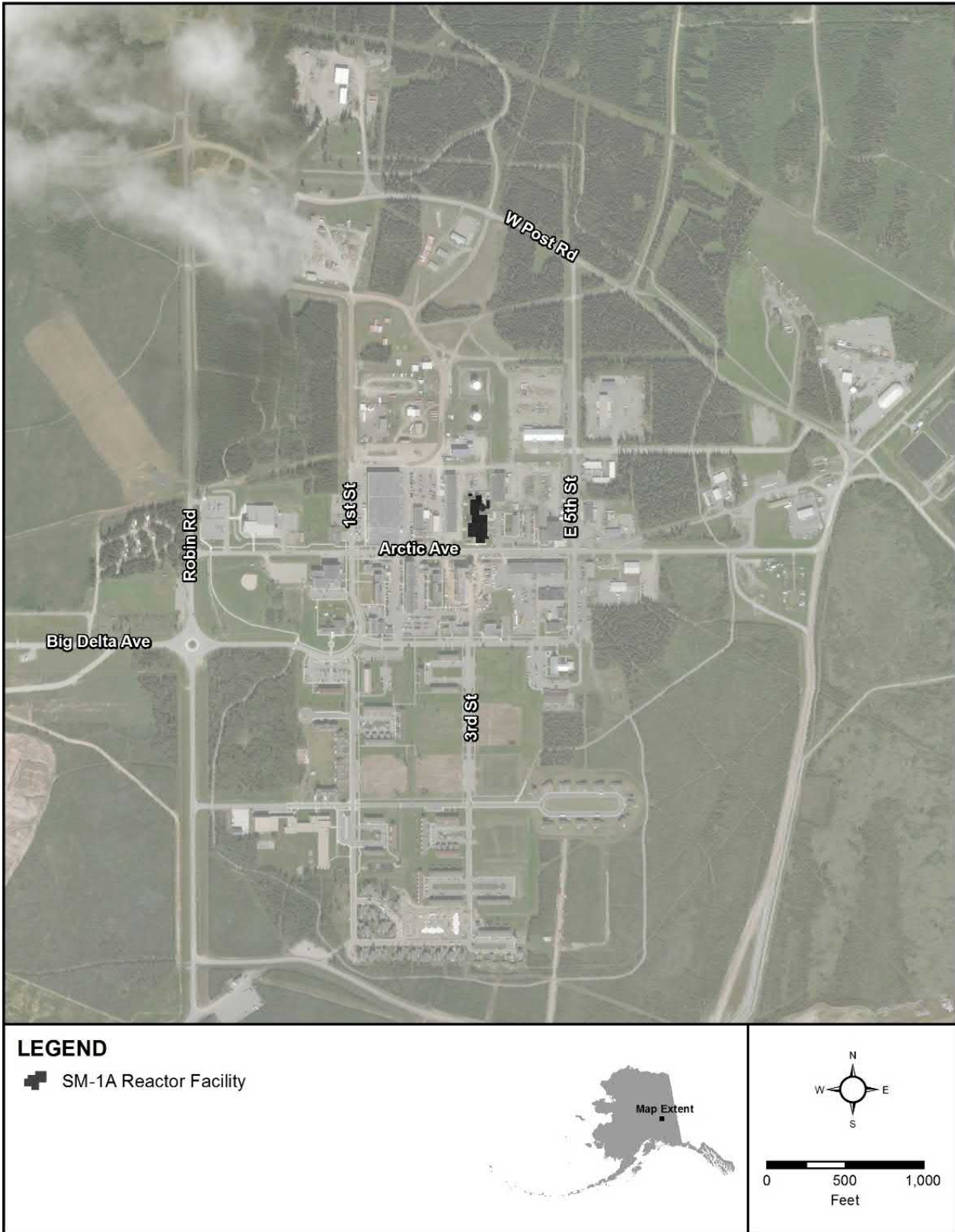
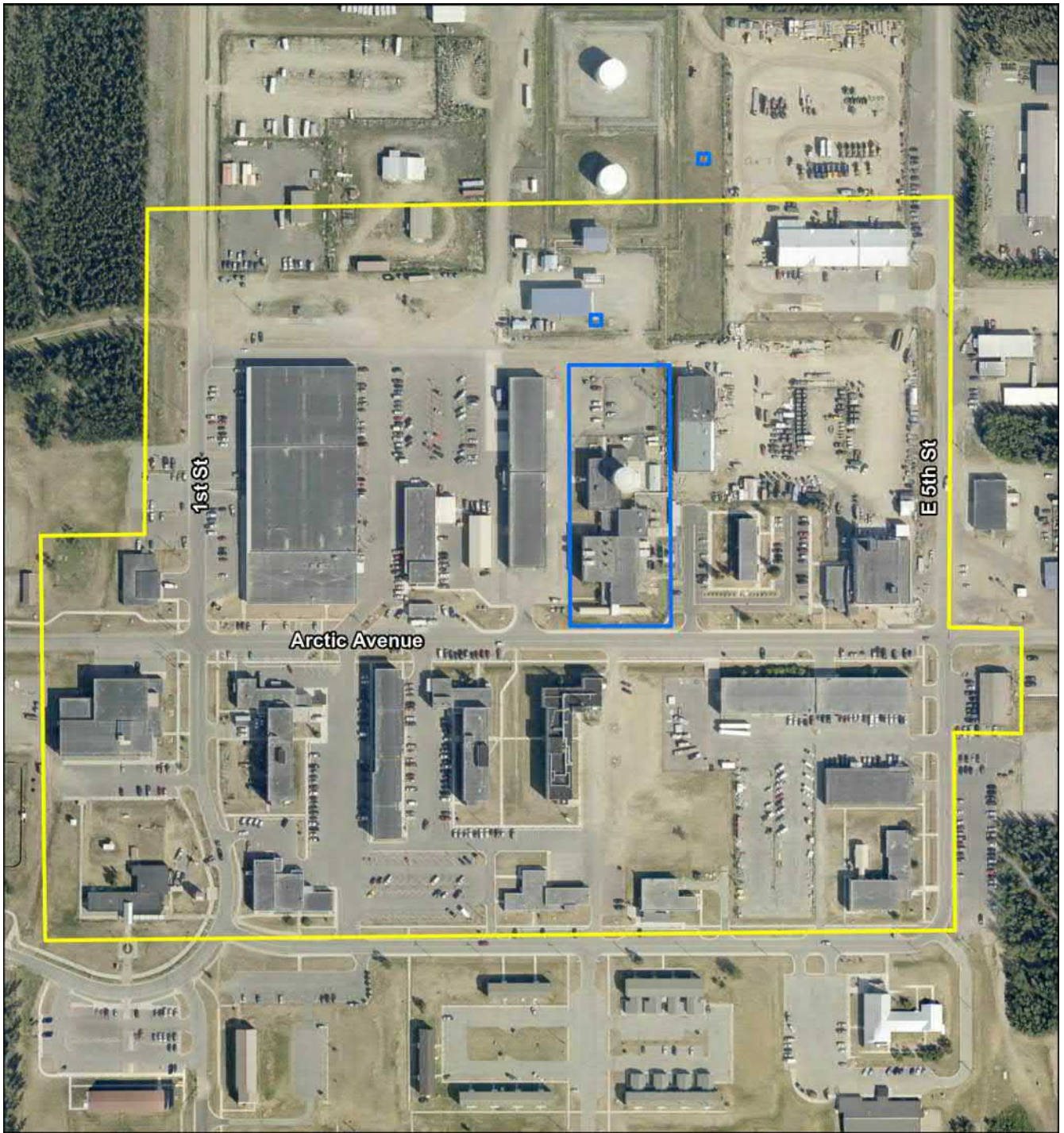




Figure 2. Location of SM-1A Reactor Facility



Figure 3. Project Area of Potential Effects



LEGEND

-  Project Area of Potential Effect
-  Fort Greely Historic District

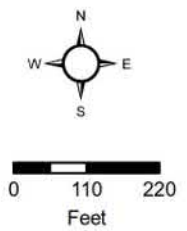


Figure 4. Project Area of Potential Effects within Fort Greely Historic District (district boundaries from AHRs XMH-1275).

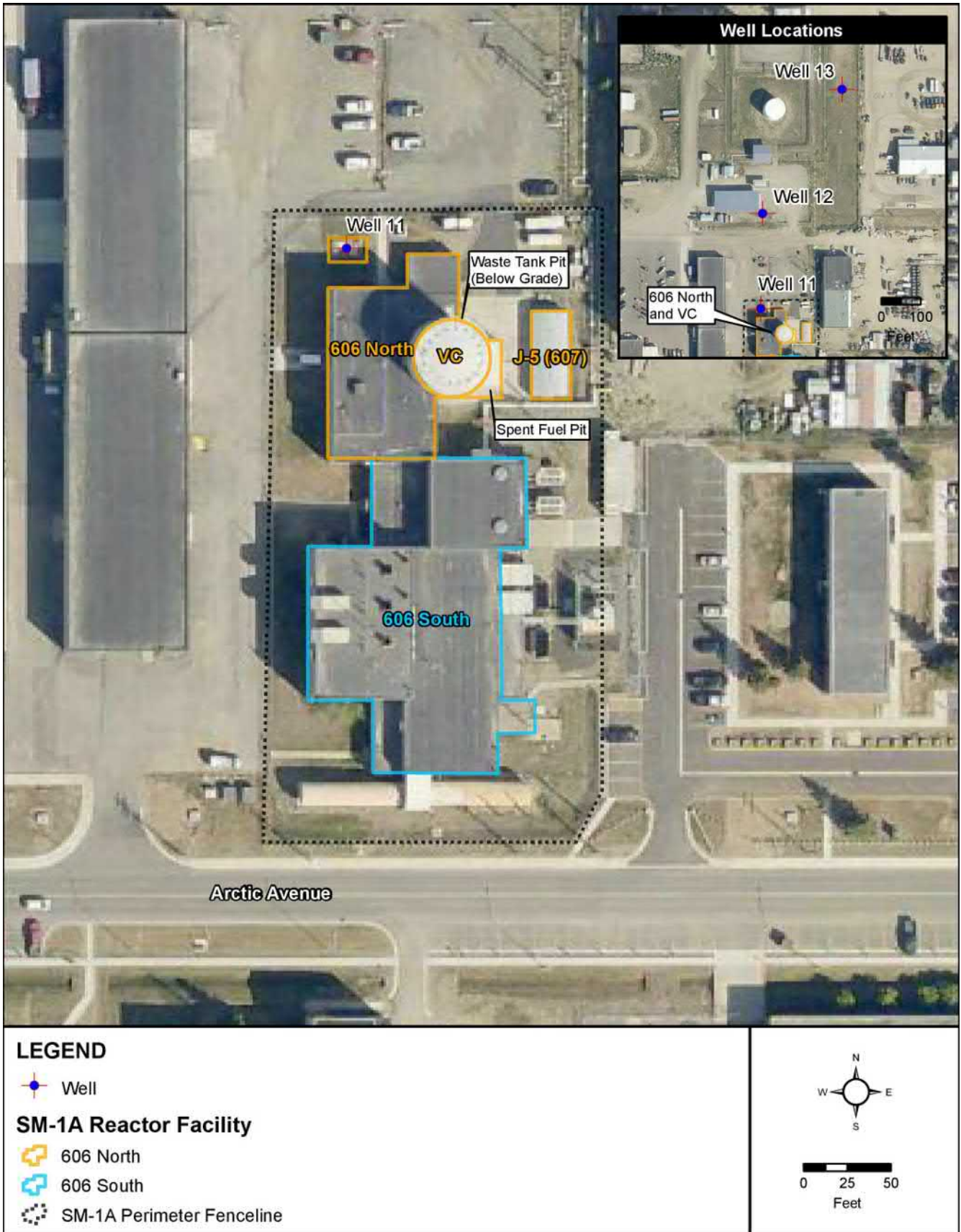


Figure 5. SM-1A Reactor Facility Components within Project APE

References

- AHRS (Alaska Heritage Resources Survey). 2020. Online site forms for XMH-670, XMH-671, XMH-710, XMH-711, XMH-1275.
- USACE. 2008. Final Historical Site Assessment (Phase I) for all Hazards Assessment of the SM-1A Deactivated Nuclear Power Plant at Fort Greely, Alaska. Prepared for U.S. Army Corps of Engineers. May.
- USACE. 2020. SM-1A Nuclear Power Plant Overview. Available at: <https://www.nab.usace.army.mil/SM-1A/> (accessed June 1, 2020).
- U.S. Army Garrison Alaska. 2009. Final Record of Decision, Nine Installation Restoration Program Sites, Fort Greely, Alaska. Available at: <https://dec.alaska.gov/spar/csp/sites/fort-greely/> (accessed June 1, 2020).
- U.S. Army Garrison Alaska. 2020. Integrated Cultural Resources Management Plan for U.S. Army Garrison Alaska, 2020-2025.



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201-2930

CENAB-ENE-C

June 19, 2020

Ms. Sarah Meitl
Review and Compliance Coordinator
Alaska State Historic Preservation Office/Office of History and Archaeology
550 West Seventh Avenue, Suite 1310
Anchorage, AK 99501-3561

SUBJECT: Request to Initiate Consultation and Determine the Area of Potential Effect for the Proposal to Decommission and Dismantle the Deactivated SM-1A Nuclear Reactor Facility at U.S. Army Garrison Alaska, Fort Greely, Delta Junction, Alaska

The United States Army Corps of Engineers (USACE) proposes to decommission and dismantle the Deactivated SM-1A Nuclear Reactor Facility at U. S. Army Garrison Alaska, Fort Greely, Delta Junction, Alaska. The proposed decommissioning project (Project) is subject to Section 106 of the National Historic Preservation Act (54 U.S.C. § 300101 et seq.), as implemented in 36 C.F.R. Part 800. USACE is the lead federal agency.

Consistent with 36 C.F.R. Part 800, USACE would like to initiate consultation and solicit comments from the Alaska State Historic Preservation Officer (SHPO) concerning the Project's Area of Potential Effects (APE) as determined in the attached memo.

The purpose of the Project is to safely remove, transport, and dispose of all materials and equipment, structures, and residual contamination associated with the facility. The facility operated from 1962 to 1972 before being deactivated. The undertaking is needed because in its current state, the facility does not support the Army's current and future mission at Fort Greely.

USACE welcomes your comments concerning the APE. Following consultation on the APE, USACE will submit a Cultural Resources Technical Report that will include a Determination of Eligibility for the SM-1A Reactor Facility and findings of potential Project effects to historic properties. If you have any questions or comments on the project, please contact the Project's Manager, Brenda Barber, USACE at 410-962-0030 or via email at Brenda.M.Barber@usace.army.mil.

Sincerely,

Brenda M. Barber, P.E.
U.S. Army Corps of Engineers
Program Manager

Attachment: Area of Potential Effect Memo

From: Barber, Brenda M CIV USARMY CENAB (USA) <Brenda.M.Barber@usace.army.mil>
Sent: Friday, July 17, 2020 5:40 AM
To: Bellion, Tara
Cc: Kiesling, Russell; Hillebrand, Jeffrey T CIV USARMY CENAB (USA)
Subject: [EXTERNAL] FW: Request to Initiate Consultation

Tara,
See below. Let's proceed with consultation.

Very Respectfully,

Brenda M. Barber, P.E.
U.S. Army Corps of Engineers - Baltimore District Program Manager - Environmental and Munitions Design Center
ATTN: CENAB-ENE-C
2 Hopkins Plaza
09-A-10 (Cube)
Baltimore, MD 21201
☎ 410-962-0030 (desk)
☎ 443-253-3048 (cell)

-----Original Message-----

From: Meitl, Sarah J (DNR) [<mailto:sarah.meitl@alaska.gov>]
Sent: Thursday, July 16, 2020 7:46 PM
To: Barber, Brenda M CIV USARMY CENAB (USA) <Brenda.M.Barber@usace.army.mil>
Cc: Hillebrand, Jeffrey T CIV USARMY CENAB (USA) <Jeffrey.Hillebrand@usace.army.mil>; Falls, Eva E CIV USARMY CENAB (USA) <Eva.E.Falls@usace.army.mil>; Cook, Elizabeth A CIV (USA) <elizabeth.a.cook80.civ@mail.mil>; Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>
Subject: [Non-DoD Source] RE: Request to Initiate Consultation

File No. 3130-1R COE-E / 2020-00760

Good afternoon,

The Alaska State Historic Preservation Office received your correspondence (dated June 19, 2020) on June 24, 2020. Following our review of the documentation provided in the initiation letter, we have no objections to the defined area of potential effect (APE) or level of effort proposed for identification at this time and look forward to receiving the Cultural Resources Technical Report.

Thank you for sending a Section 106 consultation initiation letter to our office. Please let me know if we can be of further assistance.

Best,
Sarah

Sarah Meitl
Review and Compliance Coordinator
Alaska State Historic Preservation Office Office of History and Archaeology

550 West 7th Avenue, Suite 1310
Anchorage, AK 99501-3561
Direct: 907-269-8720
sarah.meitl@alaska.gov
Blocked <http://dnr.alaska.gov/parks/oha>
Teleworking - Email is the best method of communication.

-----Original Message-----

From: Barber, Brenda M CIV USARMY CENAB (USA) <Brenda.M.Barber@usace.army.mil>
Sent: Friday, June 19, 2020 3:20 PM
To: Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>
Cc: Hillebrand, Jeffrey T CIV USARMY CENAB (USA) <Jeffrey.Hillebrand@usace.army.mil>; Falls, Eva E CIV USARMY CENAB (USA) <Eva.E.Falls@usace.army.mil>; Cook, Elizabeth A CIV (USA) <elizabeth.a.cook80.civ@mail.mil>
Subject: Request to Initiate Consultation
Importance: High

Hello Sarah,
Please see attached letter in which we will be requesting the start of the consultation process for the SM-1A Nuclear Reactor Facility located at U.S. Army Garrison Alaska, Fort Greely, Delta Junction. The US Army Corps of Engineering is proposing an action to decommissioning and dismantle the reactor site.

Additionally, I have included the memo regarding the Area of Potential Effect for the proposal to decommission and dismantle the site.

We welcome your input on the attached and look forward to working with you on this process.

Very Respectfully,

Brenda M. Barber, P.E.
U.S. Army Corps of Engineers - Baltimore District Project Manager - Environmental and Munitions Design Center
ATTN: CENAB-ENE-C
2 Hopkins Plaza
09-A-10 (Cube)
Baltimore, MD 21201
☎ 410-962-0030 (desk)
☎ 443-253-3048 (cell)



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201-2930

December 18, 2020

Ms. Sarah Meitl
Review and Compliance Coordinator
Alaska State Historic Preservation Office/Office of History and Archaeology
550 West Seventh Avenue, Suite 1310
Anchorage, AK 99501-3561

SUBJECT: SHPO ID NO: 2020-00760 Request for Concurrence for the Proposal to Decommission and Dismantle the Deactivated SM-1A Nuclear Reactor Facility at U.S. Army Garrison Alaska Fort Greely, Alaska

Dear Ms. Meitl:

The U.S. Army Corps of Engineers (USACE) would like to continue consultation with your office on the proposed undertaking to decommission and dismantle the Stationary Medium Power Model 1A Deactivated Nuclear Power Plant (SM-1A) at U. S. Army Garrison Alaska Fort Greely, Alaska. The proposed decommissioning project (Undertaking) is subject to Section 106 of the National Historic Preservation Act (54 U.S.C. § 300101 et seq.), as implemented in 36 C.F.R. Part 800. In accordance with 36 C.F.R. § 800.2(a)(2) the Department of the Army and Fort Greely have designated USACE as lead federal agency for purposes of Section 106.

USACE has determined the Undertaking will result in an Adverse Effect to historic properties. Consistent with 36 C.F.R. Part 800, USACE would like to solicit comments from the Alaska State Historic Preservation Officer (SHPO) concerning USACE's Determination of Eligibility for the SM-1A Reactor Facility and the Project Finding of Adverse Effect as determined in the attached cultural resources technical report. An AHRS site form update for the SM-1A Reactor Facility (AHRS XMH-670) is also included for your review and comment.

The purpose of the Undertaking is to safely remove, transport, and dispose of all materials and equipment, structures, and residual contamination associated with the facility. The facility operated from 1962 to 1972 before being deactivated. The Undertaking is needed to comply with Army Regulation 50-7 and ensure that decommissioning of SM-1A is completed within 60 years of its final deactivation.

USACE welcomes your consultation concerning the Undertaking's effects on historic properties and looks forward to working with you in the development of a Memorandum of Agreement to mitigate adverse effects to historic properties. If you have any questions or comments on the Undertaking, please contact the project's manager, Brenda Barber, USACE, at 443-253-3048 or via email at Brenda.M.Barber@usace.army.mil.

Sincerely,

Brenda M. Barber, P.E.
U.S. Army Corps of Engineers - Baltimore District
Program Manager - Environmental and Munitions Design Center

Attachments: Cultural Resources Report Cover Sheet

SM-1A Reactor Decommissioning Project Cultural Resources Technical Report

SM-1A Reactor Facility AHRS form



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

Department of Natural Resources

DIVISION OF PARKS AND OUTDOOR RECREATION
Office of History & Archaeology

550 West 7th Avenue, Suite 1310
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907-269-8700

<http://dnr.alaska.gov/parks/oha>

June 10, 2021

File No.: 3490 COE SM-1A MOA / 2020-00760

Brenda Barber
U.S. Army Corps of Engineers - Baltimore District
ATTN: CENAB-ENE-C
2 Hopkins Plaza
09-A-10 (Cube)
Baltimore, MD 21201
Brenda.M.Barber@usace.army.mil

Subject: SM-1A Memorandum of Agreement

Dear Ms. Barber:

The Alaska State Historic Preservation Office (AK SHPO) received the final Memorandum of Agreement (MOA) for the SM-1A Facility on May 17, 2021. We have reviewed the subject MOA and find it to be satisfactory.

We have signed the provided signature page for the *Memorandum of Agreement Among the U.S. Army Corps of Engineers – Baltimore District and the Alaska State Historic Preservation Officer Regarding the Decommissioning and Dismantlement of the Deactivated Stationary Medium Power Model 1A (SM-1A) Nuclear Power Plant, Fort Greely, Alaska*. We have provided a scanned signature page with this email and look forward to receiving a copy of the fully executed MOA for our records.

Our office appreciates the active consultation that went into the SM-1A MOA and we look forward to implementing the document in the future. Please contact Sarah Meitl at 269-8720 or sarah.meitl@alaska.gov if you have any questions or if we can be of further assistance.

Sincerely,

A handwritten signature in blue ink that reads "Judith E. Bittner".

Judith E. Bittner
State Historic Preservation Officer

JEB:sjm

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**MEMORANDUM OF AGREEMENT
AMONG THE U.S. ARMY CORPS OF ENGINEERS – BALTIMORE DISTRICT
AND THE ALASKA STATE HISTORIC PRESERVATION OFFICE
REGARDING THE DECOMMISSIONING AND DISMANTLEMENT OF
THE DEACTIVATED STATIONARY MEDIUM POWER MODEL 1A (SM-1A) NUCLEAR
POWER PLANT, FORT GREELY, ALASKA**

WHEREAS, the United States Army Corps of Engineers (hereinafter “USACE”) – Baltimore District is proposing to radiologically decommission and subsequently dismantle the deactivated Stationary Medium Power Model 1A Nuclear Power Plant (hereinafter “SM-1A”) Reactor Facility (hereinafter “undertaking”) at United States Army Garrison Alaska Fort Greely (hereinafter “Fort Greely”) near Delta Junction, as shown as Attachment A to this Memorandum of Agreement (hereinafter “MOA”); and

WHEREAS, Section 91(b) of the Atomic Energy Act of 1954, as amended, authorizes the Department of Defense (hereinafter “DOD”) to acquire defense utilization facilities. Section 110(b) of the Atomic Energy Act excludes DOD from licensing agreements under the act. Presidential Directive of 23 September 1961 rests responsibility for resolving health and safety problems relating to the operation of utilization facilities with the Department of Defense and requires the DOD or the appropriate Military Department to prepare, issue, and enforce safety standards, procedures or instructions applicable to the location and operation of utilization facilities. Current Army safety standards are issued in Army Regulation 50-7, Army Reactor Program. The decommissioning and dismantlement of the SM-1A will be authorized by a Decommissioning Permit issued in accordance with Army Regulation 50-7, which requires that the decommissioning result in residual radioactivity levels that allow for unrestricted use and consistent with the criteria in 10 CFR 20.1402; and

WHEREAS, although the SM-1A is on Fort Greely’s fee title land, Army Regulation 50-7 assigns USACE the responsibility to act as the lead Army component. USACE is the single point of contact at Headquarters Department of the Army for nuclear reactor decommissioning and dismantlement to ensure compliance with environmental requirements for decommissioning Army nuclear reactors; and

WHEREAS, in accordance with 36 CFR § 800.2(a)(2) USACE is designated as lead federal agency for purposes of Section 106 of the National Historic Preservation Act (36 CFR § 800); and

WHEREAS, the decommissioning and dismantlement will involve the dismantlement and disposal of the SM-1A Reactor Facility Building (also known as Building 606 North; Building 606 South is the original Central Heating and Power Plant and will remain extant), removal and dismantlement of the remaining primary and secondary reactor systems; dismantlement and disposal of an associated storage building (Building 607); the abandonment in place of three well structures (Cooling Water Supply Wells #11 and #12 and Recharge Well #13) and removal and disposal of associated pumps, pipes, and concrete structures; the removal and disposal of an underground pipeline and concrete utility corridor; the removal and disposal of contaminated soils; site restoration; and the termination of USACE’s decommissioning permit; and

WHEREAS, USACE determined that the decommissioning and dismantlement is considered an undertaking under Section 106 of the National Historic Preservation Act of 1966 (hereinafter “NHPA”), as amended, (54 United States Code [U.S.C.] § 306108) and its implementing regulations, *Protection of Historic Properties* (36 CFR §800) (hereinafter known collectively as “Section 106”) and is therefore subject to that act; and

WHEREAS, USACE has determined that the proposed decommissioning and dismantlement of buildings, removal of site infrastructure improvements, the removal of contaminated soils, and site restoration have the potential to affect historic properties (defined as listed in or eligible for listing in the National Register of Historic Places (hereinafter “NRHP”)); and

WHEREAS, USACE has initiated consultation with the Alaska Department of Natural Resources Office of History and Archaeology, which acts as the Alaska State Historic Preservation Office (hereinafter “SHPO”) pursuant to 36 CFR § 800.3(c). SHPO has assigned the consultation identification number 2020-00760 to the undertaking; and

WHEREAS, by a letter to SHPO dated June 19, 2020, USACE defined the undertaking and the area of potential effects (hereinafter “APE”), in accordance with 36 CFR § 800.4(a), with concurrence from SHPO on July 16, 2020. For effects on above-ground resources, the APE is coterminous with the 1.5-acre fenced area surrounding the SM-1A Reactor Facility and the associated infrastructure outside the fenced area (Supply Well #12, Recharge Well #13, underground pipeline, and underground utility corridor). For effects on archaeological resources, the APE is coterminous with the boundaries of ground disturbance related to decommissioning and dismantlement, site cleanup, and staging activities (Attachment B); and

WHEREAS, in 2000, the Fort Greely New Post/Cold War Historic District (Alaska Heritage Resources Survey [AHRS] XMH-01275/XMH-00845, considered herein as a single historic district) was determined eligible for the NRHP under Criterion A with a period of significance of 1946-1989 associated with the Cold War era at Fort Greely. Building 606 (AHRS XMH-00670) was determined eligible as a contributing resource to the district. Building 607 (AHRS XMH-00671) was determined not eligible as a non-contributing resource to the district; and

WHEREAS, in 2020, the SM-1A Reactor Facility (AHRS XMH-01587) was determined individually eligible for listing in the NRHP under Criterion A on the national level with a period of significance of 1958-1972 associated with USACE’s prototype nuclear reactor program during the Cold War era. The historic property boundary is conterminous with the APE; and

WHEREAS, in 2020, USACE determined, with no objection from SHPO that, due to previous ground disturbance and development activities, there was a low probability for archaeological resources in the APE, and that no field survey was required; and

WHEREAS, in accordance with 36 CFR § 800.2(c)(2) and by letters dated June 19, 2020, USACE contacted Indian Tribes including the following Alaska Native villages, regional corporations, and/or village corporations (as those terms are defined in Section 3 of the Alaska Native Claims Settlement Act (43 U.S.C. Part 1602) to participate in Section 106 as consulting parties for the above-described undertaking: Native Village of Cantwell, Chickaloon Native Village, Village of Dot Lake, Native Village

MEMORANDUM OF AGREEMENT REGARDING THE DECOMMISSIONING AND DISMANTLEMENT OF THE STATIONARY
MEDIUM POWER MODEL 1A DEACTIVATED NUCLEAR POWER PLANT (SM-1A), FORT GREELY, ALASKA

of Eklutna, Gulkana Village, Healy Lake Village, Knik Tribe, Nenana Native Association, Northway Village, Native Village of Tanacross, Native Village of Tetlin, Cook Inlet Region, Inc., Ahtna, Inc., Chickaloon Moose Creek Native Association, Inc., Doyon, Ltd, Eklutna, Inc., Tana Chiefs Conference, Toghoththele Corporation; and

WHEREAS, USACE has responded to all requests received from the above-referenced Indian Tribes to learn more about the project and none of the Indian Tribes has expressed concerns regarding potential effects to known historic properties; and

WHEREAS, in accordance with 36 CFR § 800.2 and 800.3, USACE identified consulting parties during the Section 106 process and invited them to participate in the SM-1A decommissioning and dismantlement process as consulting parties (Attachment C); and

WHEREAS, the following individuals/parties have accepted USACE's invitation to participate as consulting parties, and therefore USACE has invited them to be concurring parties to this MOA: Nuke Digest, City of Delta Junction; and

WHEREAS, USACE has also carefully considered the views of the public in accordance with the NHPA and the National Environmental Policy Act (hereinafter "NEPA") (42 U.S.C. § 4231 et seq.) and has engaged with the public to explain the decommissioning and dismantlement process and solicit views from the public; and

WHEREAS, based on an Environmental Assessment being conducted as part of NEPA review, USACE is determining that there is no reasonable alternative to the decommissioning and dismantlement of the SM-1A Reactor Facility (Building 606 North), one ancillary storage building (Building 607), and associated wells, pipelines and underground utility corridor; and

WHEREAS, USACE has assessed the effects from the undertaking on historic properties within the APE in accordance with 36 CFR § 800.5 and has determined that the undertaking will have an adverse effect on the SM-1A Reactor Facility and the Fort Greely New Post/Cold War Historic District; and

WHEREAS, SHPO concurred with USACE's determination of adverse effect for the undertaking in a letter dated January 22, 2021; and

WHEREAS, USACE has carefully considered alternatives to the decommissioning and dismantlement and has sought to avoid, minimize, or mitigate the undertaking's potential adverse effects on historic properties within the APE, in accordance with 36 CFR §§ 800.5 and 800.6; and

WHEREAS, on April 19, 2021, USACE held a telephone conference call meeting with the invited consulting parties to discuss measures to avoid, minimize, and resolve the adverse effects on historic properties; and

WHEREAS, USACE, as a part of the decommissioning and dismantlement of the SM-1 Reactor Facility at Fort Belvoir, Virginia, has executed an MOA to mitigate for adverse effects. This mitigation includes inventoried salvaged materials from SM-1 that will be sent to interested parties for use in future exhibits as

MEMORANDUM OF AGREEMENT REGARDING THE DECOMMISSIONING AND DISMANTLEMENT OF THE STATIONARY
MEDIUM POWER MODEL 1A DEACTIVATED NUCLEAR POWER PLANT (SM-1A), FORT GREELY, ALASKA

well as the restoration of a Reactor Pressure Vessel model of the SM-1A reactor, to be used as a teaching tool; and

WHEREAS, in accordance with 36 CFR § 800.6(a)(1), USACE has notified the Advisory Council on Historic Preservation (hereinafter “ACHP”) of its adverse effect determination with specified documentation, and in a letter dated January 4, 2021, the ACHP stated that it has chosen not to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii); and

WHEREAS, USACE and SHPO are Signatories of this MOA. pursuant to 36 CFR § 800.6(c)(1) and have authority to execute, amend, or terminate this MOA; and

WHEREAS, Fort Greely is an invited signatory to this MOA pursuant to 36 CFR § 800.6(c)(2) and has authority to amend or terminate this MOA; and

NOW, THEREFORE, USACE, Fort Greely, and SHPO (hereinafter “Signatories”) agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the undertaking on historic properties.

STIPULATIONS

USACE shall ensure the following stipulations are carried out:

I. PUBLIC INTERPRETATION

A. *Historic American Engineering Record (HAER) Level II Documentation:* HAER documentation is appropriate to resolve adverse effects on significant historic properties, such as the SM-1A Reactor Facility. USACE shall prepare, or direct to be prepared, documentation to HAER Level II standards as defined in the *Secretary of the Interior Standards and Guidelines for Architectural and Engineering Documentation*.

The HAER Level II documentation shall include the SM-1A Reactor Facility, including Buildings 606 and 607 and associated infrastructure. The documentation will include information obtained from USACE's Office of History and Fort Greely, including motion picture film, photographs, and documents, as appropriate.

1. The documentation will include detailed written historical and descriptive data about the facility. It will include physical descriptions of the facility, detailed discussion of the facility's historic significance, a discussion of how the facility was operated, and a description of the decommissioning and dismantlement process. The draft historical narrative, omitting the detailed decommissioning and dismantlement sections, will be submitted to the Signatories and other consulting parties for their review and comment prior to the decommissioning and dismantlement process.
2. Digital and large-format photography will document the exterior and currently accessible interior areas of Building 606 and Building 607 and associated infrastructure. Digital copies of the photographs will be submitted to the Signatories and other consulting parties for their review and comment before decommissioning and dismantlement begins.
3. During the decommissioning and dismantlement process, USACE shall document the dismantling of the facility through video and digital photography. Within one (1) year of the demobilization of decommissioning and dismantlement operations and personnel from the SM-1A Reactor Facility site, the video and photography will be compiled into thirty minutes of professional video with appropriate context, narration, and labeling. The video will be submitted to the Signatories and other consulting parties for their review and comment before the video is finalized. The video will be submitted to SHPO and other agreed upon online and publicly accessible websites as a supplemental addition to the documentation package.
4. Within two (2) years of this MOA's enactment, USACE will reach out to six former SM-1A operators, employees, or other personnel closely associated with the construction, operation and initial closure of the SM-1A facility and shall invite them to be interviewed about their experiences with the facility. The oral interviews will be recorded and transcribed, and full transcripts will be

incorporated into the final documentation package as an appendix. Audio files, full transcripts, and signed releases will be shared with the Oral History Program at Rasmuson Library at University of Alaska Fairbanks and will meet the library's standards for digital audio and releases.

- B. Upon completion, USACE will submit the draft documentation to the National Park Service, Signatories, and other consulting parties for their thirty (30) day review. USACE shall incorporate and/or respond to all submitted comments before finalizing the documentation.
- C. USACE shall provide copies of the final HAER documentation to SHPO, National Park Service, Fort Greely, and the USACE Office of History. USACE will identify other appropriate repositories for the documentation in consultation with the Signatories and other consulting parties. USACE shall ensure the resulting documentation is suitable for dissemination to the public with the goal of creating awareness for the historical significance of the SM-1A Reactor Facility. USACE shall provide copies of the documentation to the other consulting parties upon written request.
- D. Within two (2) years of USACE's award of the decommissioning and dismantlement contract, USACE shall distribute a draft digital version of a proposed historical plaque/marker to the Signatories and other consulting parties. This historical plaque/marker's design shall be agreed upon by the Signatories with input from the other consulting parties prior to installation. Within one (1) year of completion of the decommissioning and dismantlement, USACE/Fort Greely shall erect the agreed upon plaque/marker at the previous site of SM-1A. Additional plaques/markers shall be installed at publicly accessible sites. These additional plaques/ markers shall have their designs and locations agreed upon by the Signatories and consulting parties prior to installation. Upon final installation of these historical plaque/markers, USACE/Fort Greely shall photograph the installed plaque/markers and distribute to all the Signatories and consulting parties.
- E. During decommissioning and dismantlement, when safe and feasible, USACE shall salvage historical items from the SM-1A Reactor Facility, including but not limited to informational safety plaques and currently unknown time capsule contents. Within two (2) years of USACE's award of the decommissioning and dismantlement contract, USACE will develop a detailed plan for the identification, curation, storage, and transportation of these historical items, along with specific steps for consultation. USACE shall submit this plan for review and comment by the Signatories and other consulting parties.

Salvaged items will remain under the control of the Army; items shall be salvaged from SM-1A and sent to an as-yet unidentified facility for storage. USACE will distribute a letter to the Signatories and other consulting parties with an item inventory and location, as well as a point of contact to help retrieve items for future exhibits. USACE shall inform the Signatories and other consulting parties of circumstances that will prevent salvage and display of these items.
- F. Following decommissioning and dismantlement, USACE shall submit updated AHRS site forms to SHPO for Building 606 and Building 607 that indicate the changes to the historic buildings and their eligibility status.

- G. Since the HAER Level II documentation will document the decommissioning and dismantlement process, USACE shall complete the requirements of Stipulations I.A through I.C within one (1) year of completion of the decommissioning and dismantlement of the SM-1A Reactor Facility (currently estimated for completion by 2028).

II. DECOMMISSIONING AND DISMANTLEMENT

USACE may proceed with the decommissioning and dismantlement activities for the SM-1A Reactor Facility, provided that those activities do not interfere with the completion of the stipulations in this MOA.

III. PERFORMANCE STANDARDS

A. Professional Qualifications

USACE will ensure all actions prescribed by this MOA that involve the identification, evaluation, analysis, recording, treatment, monitoring, or disposition of historic properties, or involve reporting or documentation of such actions in the form of reports, forms, or other records, are carried out by or under the direct supervision of a person who meets the appropriate *Secretary of the Interior's Professional Qualification Standards* (36 CFR § 61; 62 Federal Register 33708, June 30, 1997).

B. Standards and Guidelines

All work performed under the provisions of this MOA shall be conducted in accordance with the following standards and guidelines, as relevant:

1. *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (36 CFR § 61)
2. *Secretary of the Interior Standards and Guidelines for Architectural and Engineering Documentation* (Federal Register Vo. 48, No. 190, Thursday, September 29, 1983, pp. 44731-34).
3. *National Register Photo Policy Factsheet updated 5/15/2013*
https://www.nps.gov/subjects/nationalregister/upload/Photo_Policy_update_2013_05_15_508.pdf
4. *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR § 68)

C. Review of Submitted Materials

1. The Signatories and other consulting parties agree to respond to USACE in writing to all materials submitted for their review and comment within thirty (30) days of receipt of all information. A party may request additional time for review if requested within the first seven (7) days of the thirty (30) day review period.
2. USACE shall take into account written comments it receives within the thirty (30)-day review period from the Signatories and other consulting parties.

3. If a Signatory or other consulting party fails to respond in writing to USACE's request for review and comment, USACE may assume the non-responding party(ies) has/have no comment.

D. Reporting

USACE shall share progress with the MOA stipulations through stakeholder updates. The Signatories and other consulting parties may request a meeting to discuss progress or concerns with the MOA. Upon completion of all stipulations under this MOA, USACE shall provide the Signatories and other consulting parties a written memorandum acknowledging that USACE has fulfilled its responsibilities under this MOA.

IV. DISPUTE RESOLUTION

Should any signatory or concurring party to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, USACE shall consult with such party to resolve the objection. If USACE determines that such objection cannot be resolved, USACE will:

- A. Forward all documentation relevant to the dispute, including USACE's proposed resolution, to the ACHP. The ACHP shall provide USACE with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, USACE shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties, and provide them with a copy of this written response. USACE will then proceed according to its final decision.
- B. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, USACE may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, USACE shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA and provide them and the ACHP with a copy of such written response.
- C. USACE's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

V. RESOLUTION OF OBJECTIONS BY THE PUBLIC

At any time during implementation of the measures stipulated in this MOA, should any objections pertaining to any such measures or their manner of implementation be raised by any member of the public, USACE shall notify the parties in this MOA and take the objection into account, consulting with the objector. Should the objector so request, USACE shall consult with parties in the MOA to resolve the objection.

VI. POST-REVIEW DISCOVERIES

If potential historic properties or archaeological resources are discovered or unanticipated effects on historic properties are found, USACE shall address these post-review discoveries in accordance with 36 CFR § 800.13(b) and coordinate with Fort Greely to satisfy the requirements of the 2020-2025 U.S. Army Garrison Alaska Integrated Cultural Resources Management Plan.

VII. AMENDMENT PROCESS

This MOA may be amended when such an amendment is agreed to in writing by all Signatories. The amendment will be effective on the date a copy signed by all Signatories is filed with the ACHP.

VIII. TERMINATION

- A. If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other signatories to attempt to develop an amendment per Stipulation VII above. If an amendment cannot be reached within thirty (30) days (or another time period agreed to by all signatories), any signatory may terminate the MOA upon written notification to the other signatories.
- B. Once the MOA is terminated, and prior to work continuing on the undertaking, USACE must either: a) execute an MOA pursuant to 36 CFR § 800.6 or b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. USACE shall notify the signatories and consulting parties as to the course of action it will pursue.

IX. DURATION

This MOA will be considered null and void if its terms are not implemented within nine (9) years of the effective date. The Signatories to this MOA will consult six (6) months prior to expiration to determine if there is a need to extend or amend this MOA. Upon completion of the Stipulations set forth above, USACE will provide a letter (with attached documentation) of completion to SHPO, with a copy to the Signatories to this MOA. If SHPO concurs the Stipulations are complete within thirty (30) calendar days, USACE will notify the Signatories and Consulting Parties in writing and this MOA will expire, at which time the Signatories will have no further obligations hereunder.

X. DEFINITIONS

- A. Unless otherwise specified herein, the term “days” means Federal business days.
- B. The term “date of this signed MOA” means the date of the last Signatory’s signature affixed thereto.

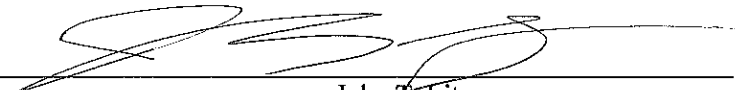
XI. IMPLEMENTATION OF MOA

This MOA may be implemented in counterparts, with a separate page for each signatory, and USACE shall ensure that each party is provided with a complete copy. This MOA shall become effective on the date of the last signatory’s signature.

Execution of this MOA by USACE, Fort Greely, and SHPO, and implementation of its terms is evidence that USACE has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

**MEMORANDUM OF AGREEMENT
AMONG THE U.S. ARMY CORPS OF ENGINEERS – BALTIMORE DISTRICT
AND THE ALASKA STATE HISTORIC PRESERVATION OFFICE
REGARDING THE DECOMMISSIONING AND DISMANTLEMENT OF
THE STATIONARY MEDIUM POWER MODEL 1A DEACTIVATED NUCLEAR POWER
PLANT (SM-1A), FORT GREELY, ALASKA**

SIGNATORY: U.S. ARMY CORPS OF ENGINEERS – BALTIMORE DISTRICT

By:  Date: 17 Jun 21
John T. Litz
Colonel, U.S. Army
Commander and District Engineer

**MEMORANDUM OF AGREEMENT
AMONG THE U.S. ARMY CORPS OF ENGINEERS – BALTIMORE DISTRICT
AND THE ALASKA STATE HISTORIC PRESERVATION OFFICE
REGARDING THE DECOMMISSIONING AND DISMANTLEMENT OF
THE STATIONARY MEDIUM POWER MODEL 1A DEACTIVATED NUCLEAR POWER
PLANT (SM-1A), FORT GREELY, ALASKA**

SIGNATORY: ALASKA DEPARTMENT OF NATURAL RESOURCES OFFICE OF HISTORY AND
ARCHAEOLOGY

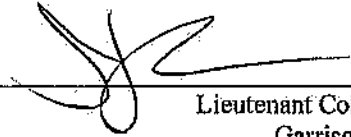
By:  Date: 6/10/2021

Judith Bittner
Alaska State Historic Preservation Officer

**MEMORANDUM OF AGREEMENT
AMONG THE U.S. ARMY CORPS OF ENGINEERS - BALTIMORE DISTRICT
AND THE ALASKA STATE HISTORIC PRESERVATION OFFICE
REGARDING THE DECOMMISSIONING AND DISMANTLEMENT OF
THE STATIONARY MEDIUM POWER MODEL 1A DEACTIVATED NUCLEAR POWER
PLANT (SM-1A), FORT GREELY, ALASKA**

INVITED SIGNATORY: U.S. ARMY GARRISON ALASKA FORT GREELY

By: _____



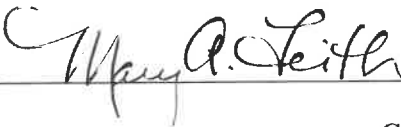
Lieutenant Colonel Joel M. Johnson
Garrison Commander

Date: 23 JUN 21

CONCURRING PARTIES:

**MEMORANDUM OF AGREEMENT
AMONG THE U.S. ARMY CORPS OF ENGINEERS – BALTIMORE DISTRICT
AND THE ALASKA STATE HISTORIC PRESERVATION OFFICE
REGARDING THE DECOMMISSIONING AND DISMANTLEMENT OF
THE STATIONARY MEDIUM POWER MODEL 1A DEACTIVATED NUCLEAR POWER
PLANT (SM-1A), FORT GREELY, ALASKA**

CONCURRING PARTY: CITY OF DELTA JUNCTION

By:  Date: June 11, 2021
Mary Leith
City Administrator

**MEMORANDUM OF AGREEMENT
AMONG THE U.S. ARMY CORPS OF ENGINEERS – BALTIMORE DISTRICT
AND THE ALASKA STATE HISTORIC PRESERVATION OFFICE
REGARDING THE DECOMMISSIONING AND DISMANTLEMENT OF
THE STATIONARY MEDIUM POWER MODEL 1A DEACTIVATED NUCLEAR POWER
PLANT (SM-1A), FORT GREELY, ALASKA**

CONCURRING PARTY: NUKE DIGEST

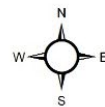
By: Charlie D Harmon Date: 6/11/2021
Charlie Harmon
Editor

ATTACHMENT A
LOCATION OF SM-1A REACTOR FACILITY
FORT GREELY, ALASKA



LEGEND

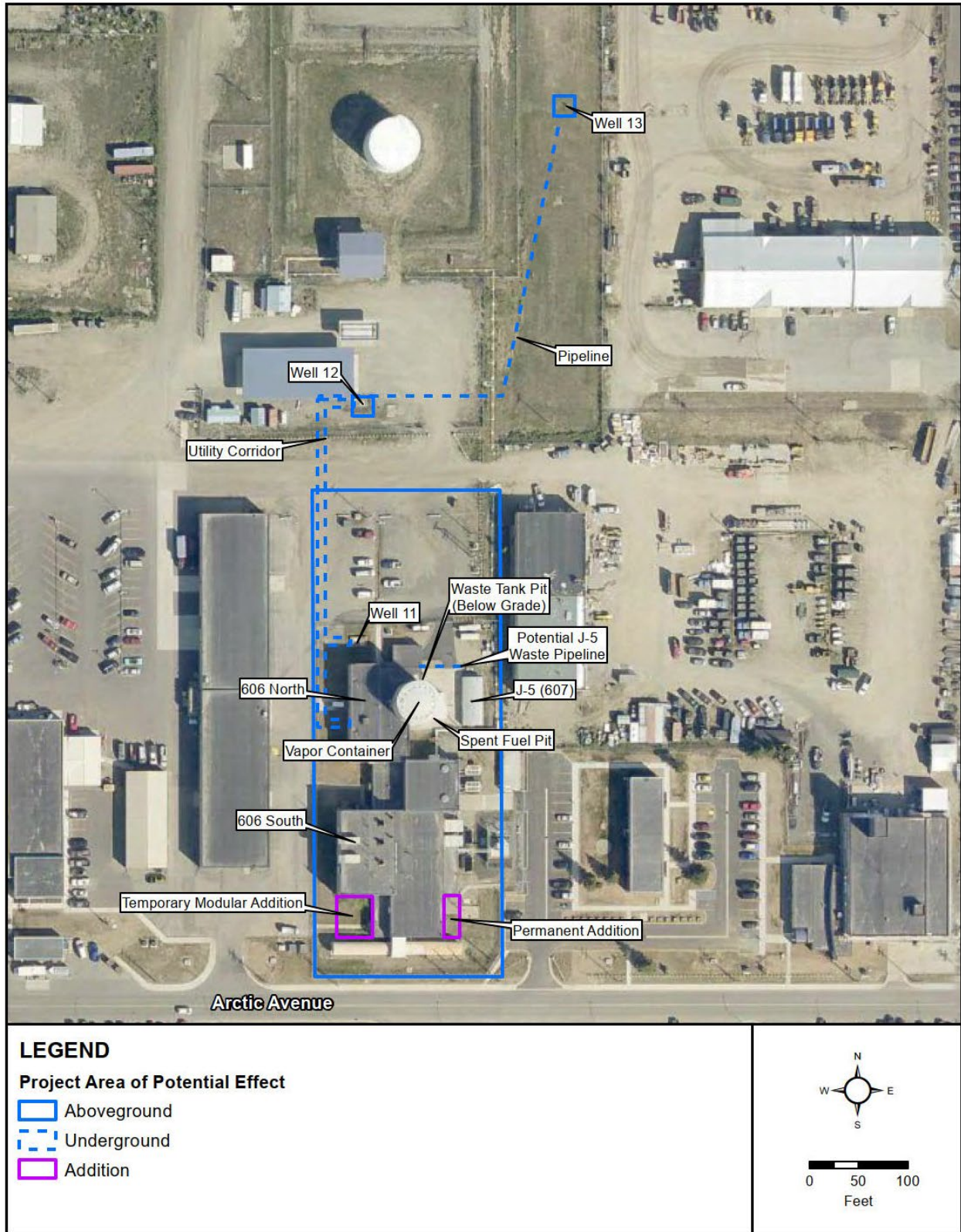
 SM-1A Reactor Facility



0 500 1,000
Feet

Location of SM-1A Reactor Facility at Fort Greely, Alaska

ATTACHMENT B
AREA OF POTENTIAL EFFECTS
SM-1A REACTOR DECOMMISSIONING AND DISMANTLEMENT PROJECT



SM-1A Reactor Decommissioning and Dismantlement Project Area of Potential Effects, Fort Greely, Alaska

ATTACHMENT C
USACE-IDENTIFIED POTENTIALLY INTERESTED PARTIES FOR SECTION 106
CONSULTATION
SM-1A REACTOR DECOMMISSIONING AND DISMANTLEMENT PROJECT

**List of Federal Agencies, Indian Tribes, and Other Consulting Parties Identified During Section
106 Consultation for the
SM-1A Reactor Decommissioning and Dismantlement Project, Fort Greely, Alaska**

Federal Agencies:

- U.S. Army Garrison Alaska Fort Greely
- U.S. Bureau of Indian Affairs
 - Anchorage Agency
 - Fairbanks Agency
- Advisory Council on Historic Preservation

State Agencies:

- Alaska Office of History and Archaeology/State Historic Preservation Officer

Other Invited Consulting Parties:

- American Nuclear Society
- The Nuke Digest (publication)
- Alaska Historical Society
- Alaska Historical Commission
- University of Alaska Museum of the North
- UAF Rasmuson Library, Alaska, Polar Regions Collections & Archives
- City of Delta Junction

Indian Tribes (which include Alaska native villages, regional corporations, and/or village corporations)
invited to consult:

- Native Village of Cantwell
- Chickaloon Native Village
- Village of Dot Lake
- Native Village of Eklutna
- Gulkana Village
- Healy Lake Village
- Knik Tribe
- Nenana Native Association
- Northway Village
- Native Village of Tanacross
- Native Village of Tetlin
- Cook Inlet Region, Inc.
- Ahtna, Inc.
- Chickaloon Moose Creek Native Association, Inc.
- Doyon, Limited
- Eklutna, Inc.
- Tanana Chiefs Conference
- Toghoththele Corporation

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Distribution List

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Table A-1: Distribution List

Name	Title/Division	Agency
Department of Defense		
Sam Klein	Environmental Support Manager, Environmental Command	Army Environmental Command
Yvonne Tyler	Environmental Protection Specialist	Installation Management Command G4/IMPW-E
Lynn Wulf	Environmental Protection Specialist	Installation Management Command G4/IMPW-E
Michael Salyer	Chief, Environmental Resources Section	USACE Alaska District/POA
Darrell Liles	Health Physicist	USACE Environmental and Munitions Center of Expertise (EM CX)
Stephen Castellane	Environmental Engineer	USACE EM CX
Julie Clements	Health Physicist	USACE EM CX
Mark Fisher	Industrial Hygienist	USACE EM CX
Rebecca Latka	NEPA Specialist	USACE EM CX
Walter Roberts	Project Controls Manager	USACE EM CX
Brian Hearty	National Program Manager, USACE Deactivated Nuclear Power Plant Program	USACE HQ
LTC Meghan Poirier	Attorney	USAG Alaska Legal Council
Shawn Baker	Director of Public Works	USAG Fort Greely
Charles Bailey	UP Chief	USAG Fort Greely
Steve Bowdre	DPW, Operations and Maintenance Chief	USAG Fort Greely
Ron Crofford	Director of Public Works - Environment	USAG Fort Greely
Lt. Col. Joel Johnson	Installation Command	USAG Fort Greely
Rob Mathews	Chief of Physical Security	USAG Fort Greely
LTC Eric Marcellus	Construction and Facilities Management Officer 38th Troop Command XO Alaska Army National Guard	USAG Fort Greely
Steve Baugh	Division Chief, Operations Support Division - Alaska Region Missile Defense	USAG Fort Greely
Leo Palmer	Environmental Office Representative	USAG Fort Greely
Matt Sprau	Director of Public Works	USAG Fort Wainwright
Laura Sample	DPW - NEPA Program Manager	USAG Fort Wainwright
Elizabeth Cook	Cultural Resources Manager/Native Liaison USAG Alaska	USAG Fort Wainwright
Kimberlie Hughes	Safety and Occupational Health Specialist	USAG Fort Wainwright
Gail Murray	Safety and Occupational Health Specialist	USAG Fort Wainwright

Table A-1: Distribution List

Name	Title/Division	Agency
Robert Cherry	Radiation Safety Officer, HQ IMCOM	U.S. Army
Calvin Williams	Safety Director	U.S. Army
James Ambler	Health Physicist	USACE
Tracey Carter	Environmental Attorney for USAG-AK	USAG Fort Greely
LTC Jama VanHorne-Sealy	Manager	Army Reactor Office
MAJ Scott Julich	Nuclear Engineer	Army Reactor Office
Tim Mikulski	Health Physicist, Office of the Director of Army Safety	Army Reactor Council
Bryan Frey	DCS, G-9 Functional Lead for Restoration	Army Reactor Council
LTC Crystal Boring	Community Relations and Outreach Division	Headquarters, Department of the Army
Federal Agencies		
MAJ Kathryn Hermon	Project Manager, Alaska District, Environmental and Special Programs	USACE
Jeffrey Andrews	Deputy Chief EMDC	USACE CENAB
Eugene Peltola	Regional Director	Bureau of Indian Affairs
Leslie DeWilde	Fairbanks Agency, Superintendent	Bureau of Indian Affairs
Chad Padgett	State Director	Bureau of Land Management
Geoff Beyersdorf	Fairbanks District Manager	Bureau of Land Management
David Magdangal	NEPA Reviewer, Region 10	U.S. Environmental Protection Agency (USEPA)
Dave Bartus	Cleanup, PCB Radioactive Waste, Region 10	USEPA
Lauren Boldrick	Geologist and NEPA Reviewer, Region 10	USEPA
Kelly McFadden	Manager, Pesticides and Toxics Unit, Region 10	USEPA
Jennifer Mosser	Captain, U.S. Public Health Service, Region 10	USEPA
Karl Pepple	Acting Chief, Policy and Environmental Review Branch, Region 10	USEPA
Edward Kowalski	Enforcement & Compliance, Director, Region 10	USEPA
Tim Hamlin	Land, Chemicals, & Redevelopment, Director, Region 10	USEPA
Sheila Fleming	Superfund & EMD, Director, Region 10	USEPA
Dan Opalski	Water Division, Director, Region 10	USEPA
Jim McAuley	Health Physicist, Region 10	USEPA

Table A-1: Distribution List

Name	Title/Division	Agency
Greg Balogh	Protected Resources Division	National Marine Fisheries Service
Doug Limpinsel	NMFS Alaska Region, Habitat Conservation Division	National Marine Fisheries Service
Bert Frost	Regional Director, Alaska Regional Office	National Park Service
Bill Maier	USNRC POC	U.S. Nuclear Regulatory Commission
Alan McBee	Natural Resources Conservation Service	U.S. Department of Agriculture
Sandra Garcia-Aline	Federal Highway Administration, Alaska Division	U.S. Department of Transportation
Sarah Conn	Fairbanks Field Supervisor	U.S. Fish and Wildlife Service
Mateusz Lemanski	Marine Inspector, Sector Anchorage	U.S. Coast Guard
Tribal Governments and ANCSA Corporations¹		
Gary Harrison	Chairman	Chickaloon Native Village
Brandy O'Malley	Acting Executive Director/Accounting Director	Chickaloon Native Village
Eileen Ewan	President	Gulkana Village
Evelynn Combs	Acting Tribal Administrator	Healy Lake Village / Menda Cha-ag Native Corporation
Michael Tucker	President	Knik Tribal Council
Rene Nicklie	President	Native Village of Cantwell
Aaron Leggett	President	Native Village of Eklutna
Herbert Demit	President	Native Village of Tanacross
Michael Sam	First Chief	Native Village of Tetlin
Tim McManus	First Chief	Nenana Native Association / Nenana Traditional Council
Gerald Albert	President	Northway Village / Northway Traditional Council
Tracy Charles-Smith	President	Village of Dot Lake
Patricia Young	Environmental Director	Native Village of Tetlin
Darrell Kaase	Tribal Administrator	Northway Village / Northway Traditional Council
Michelle Anderson	President	Ahtna, Inc.
Edith Baller	President	Chickaloon Moose Creek Native Association, Inc.
Sophie Minich	President and CEO	Cook Inlet Region, Inc. (CIRI)
Aaron Schutt	President and CEO	Doyon, Limited / Hungwitchin Corporation / Tihteet'aii, Incorporated
Michael Curry	Chair and President	Eklutna, Inc.

Table A-1: Distribution List

Name	Title/Division	Agency
Ray Atwood	President and CEO	Toghotthele Corporation
State Agency		
Randy Bates	Director, Division of Water	Alaska Department of Environmental Conservation (ADEC)
Gary Mendivil	Environmental Program Specialist, Commissioner's Office	ADEC
Melinda Brunner	Fairbanks CS Unit Manager, Division of Spill Prevention and Response	ADEC
Neil Lehner	Industrial Waste Specialist, Municipal and Military Landfills	ADEC
Doug Buteyn	Solid Waste Regional Manager, Division of Environmental Health, Solid Waste Program	ADEC
Rebecca Spiegel	Prevention Preparedness and Response, Section Manager, Division of Spill Prevention and Response, Prevention Preparedness and Response	ADEC
Sarah Moore	State On Scene Coordinator, Division of Spill Prevention and Response, Prevention Preparedness and Response	ADEC
Kaylie Holland	Technical Specialist, Division of Environmental Health, Solid Waste Program; State POC for NWIC	ADEC
Graham Wood	Program Manager, Federal Facilities Lead, Division of Spill Prevention and Response	ADEC
Denise Koch	Director, Division of Spill Prevention and Response	ADEC
Alice Edwards	Director, Division of Air Quality	ADEC
Christina Carpenter	Director, Division of Environmental Health	ADEC
Erica Blake	Environmental Program Specialist, Division of Spill Prevention and Response	ADEC
Craig Ziolkowski	State Liaison Officer to the USNRC, Division of Spill Prevention and Response	ADEC
John Ebel	Interior and TAPS, Division of Spill Prevention and Response	ADEC
Cindy Christian	Program Manager, Division of Water, Drinking Water Program	ADEC
Earl Crapps	Environmental Program Manager, Division of Water, Domestic and Industrial	ADEC

Table A-1: Distribution List

Name	Title/Division	Agency
Bob Blankenburg	Program Manager, Division of Environmental Health, Solid Waste Program	ADEC
Audra Brase	Regional Supervisor - Fairbanks, Habitat Section	Alaska Department of Fish and Game (ADF&G)
Douglas Vincent-Lang	Commissioner, Commissioner's Office	ADF&G
Edward Grasser	Director, Division of Wildlife Conservation	ADF&G
Darren Bruning	Fairbanks Regional Director, Division of Wildlife Conservation	ADF&G
Sarah Yoder	Deputy Environmental Health Program Manager, Division of Public Health	Alaska Department of Health and Social Services
Irene Casares	Radiological Health Physicist II, State Public Health Laboratories	Alaska Department of Health and Social Services
Brent Goodrum	Deputy Commissioner, Division of Mining, Land, and Water	Alaska Department of Natural Resources (ADNR)
Marty Parsons	Director, Division of Mining, Land, and Water	ADNR
Corrie Feige	Commissioner, Office of the Commissioner	ADNR
Judith Bittner	State Historic Preservation Officer, Office of History and Archaeology	ADNR
Sarah Meitl	Coordinator, Review and Compliance, Office of History and Archaeology	ADNR
Alyssa Millard	SAIL Northern Office Lead, Division of Mining, Land, and Water, Statewide Abatement of Impaired Land (SAIL) Section	ADNR
Cathe Heroy	Large Project Coordinator, Office of Project Management and Permitting	ADNR
Ricky Gease	Director, Division of Parks and Outdoor Recreation	ADNR
Patty Burns	Statewide Abatement of Impaired Land (SAIL) Section Chief	ADNR Division of Mining, Land, and Water
Tom Barrett	Water Section Chief, Division of Water; ACWA Coordinator for ADNR	ADNR
John MacKinnon	Commissioner, Officer of the Commissioner	Alaska Department of Transportation and Public Facilities (ADOT&PF)
Ryan Anderson	Regional Director, Northern Region	ADOT&PF
Jason Sakalakas	Maintenance and Operations Chief, Northern Region	ADOT&PF
Michelle Renfrew	Senior Account Manager	Alaska Railroad Corporation (ARRC)

Table A-1: Distribution List

Name	Title/Division	Agency
Dale Wade	Vice President, Marketing and Customer Service	ARRC
Patrick Volmer	Whittier Region	ARRC
Arlene Rhoades	Chief Train Dispatcher	ARRC
Phillip Rogers	Director of Operating Practices	ARRC
Jon Garner II	Superintendent of Transportation	ARRC
Andrew Burgess	Transportation Field Manager	ARRC
Federal Congressional Public Officials		
The Honorable Don Young	United States Representative	-
The Honorable Dan Sullivan Senator	United States Senator	-
The Honorable Lisa Murkowski	United States Senator	-
State and Local Public Officials		
The Honorable Michael Dunleavy	Governor	Office of the Governor, State of Alaska
The Honorable Kevin Meyer	Chair/Lieutenant Governor	Alaska Historical Commission
The Honorable Jim Matherly	Mayor	City of Fairbanks
The Honorable Michael Welch	Mayor	City of North Pole
The Honorable Bryce Ward	Mayor	Fairbanks North Star Borough
The Honorable Austin Quinn-Davidson	Mayor	Municipality of Anchorage
Local Government		
Steve Ribuffo	Port Director	Port of Anchorage
Dave Borg	Harbormaster	Port of Whittier
Mary Leith	City Administrator	City of Delta Junction
Mark Detter	City Manager	City of Valdez
Michelle McNulty	Planning Director, Planning Department	Municipality of Anchorage
Andrew Halcro	Executive Director, Anchorage Community Development Authority	Municipality of Anchorage
Other Entities		
Dr. Jessica Black	President	Fairbanks Native Association
Karen Matthias	Alaska Consultant	Northwest Seaport Alliance (WA State)
Earl Fordham	Compact Chair and Executive Director	Northwest Interstate Compact (NWIC)
Jeff Durham	Program Director	Salcha-Delta Soil and Water Conservation District
Victor Joseph	President	Tanana Chiefs Conference

Table A-1: Distribution List

Name	Title/Division	Agency
Richard (Rick) Stillie	Deputy Director of Utilities, Fort Greely	Doyon Utilities LLC
Charlie Harmon	Editor	The Nuke Digest (Publication)
Shannon Martindale	Operations and Maintenance Superintendent	Port of Alaska
Mike Lichter	Vessel Agent, ANP Shipping Co.	North Pacific Maritime, Inc
Les Crank	Vice President, ANP Shipping Company	North Pacific Maritime, Inc
Cliff Bartley	Manager, Dangerous Goods	Matson
Laura Armstrong	Alaska Customer Service	Matson
Andrew J. Mew	Vice President	Alaska Maritime Agencies
Brad Robertson	Operations Manager	North Star Equipment Services
Craig Piercy	Executive Director/CEO	American Nuclear Society
Libraries and Universities		
Katherine Arndt	Associate Professor, Bibliographer and Curator of Rare Books	UAF Rasmuson Library, Alaska, Polar Regions Collections & Archives
Pat Druckenmiller	Museum Director	University of Alaska Museum of the North
William Schneider	President	Alaska Historical Society
-	-	Delta Community Library
-	-	Fort Wainwright Library
-	-	Noel Wien Public Library
-	-	Z. J. Loussac Public Library

Note:

¹ ANCSA corporations and tribal government representatives listed in this table may be the same contact but act as separate roles/entities for their respective corporation or tribe.

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Public Meeting Materials

1. Draft EA Distribution Letter
2. SM-1A Presentation
3. Poster Boards
4. Virtual Public Meeting Room
5. Affidavits

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Draft EA Distribution Letter

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**DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MD 21201**

26 February 2021

SUBJECT: Notice of Availability and Public Meeting for the Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Decommissioning and Dismantlement of the Deactivated SM-1A Nuclear Power Plant, U.S. Army Garrison Alaska Fort Greely, Delta Junction, Alaska

Dear Sir or Madam:

The United States Army Corps of Engineers (USACE) announces the availability of the Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FNSI) for the Army's Proposed Action to decommission and dismantle the Deactivated Stationary Medium Power Model 1A Nuclear Power Plant (SM-1A) at United States (U.S.) Army Garrison Alaska Fort Greely (Fort Greely) and release the property for unrestricted use.

Under the Proposed Action, USACE would 1) complete the proposed decommissioning and dismantlement of SM-1A in accordance with a Decommissioning Plan approved by the Army Reactor Office; 2) terminate the SM-1A decommissioning permit issued by the U.S. Army; and 3) release the SM-1A site for unrestricted use in accordance with U.S. Nuclear Regulatory Commission regulations established in 10 Code of Federal Regulations (CFR) 20.1402, *Radiological Criteria for Unrestricted Use* and adopted by the Army. Implementation of the Proposed Action would occur over approximately 6 years beginning in 2022 and ending in 2028.

This notice is being issued to all interested parties in accordance with the National Environmental Policy Act (NEPA), Council on Environmental Quality NEPA implementing regulations (40 Code of Federal Regulations [CFR] 1500-1508) (1978 as amended in 1986 and 2005), and Army NEPA regulations (32 CFR 651). Notice is also given pursuant to Section 106 of the National Historic Preservation Act of 1966, as implemented in 36 CFR Part 800.

In accordance with 32 CFR 651.14, the Draft EA and Draft FNSI are available for a 30-day public review and comment period beginning **February 26, 2021** and ending **March 28, 2021**.

Pending COVID-19 public health emergency restrictions, printed copies of the Draft EA and Draft FNSI are available for review or check out at the following local libraries (with electronic copies also available for download from the Z. J. Loussac Library and the Noel Wien Public Library):

Delta Community Library
2291 Deborah Street
Delta Junction, AK 99737

Noel Wien Public Library
1215 Cowles Street
Fairbanks, AK 99701

Z. J. Loussac Library
3600 Denali Street
Anchorage, AK, 99503

Fort Wainwright Library
3700 Santiago Ave
Fort Wainwright, AK 99703

The Draft EA and Draft FNSI are also available to view or download as follows:

Online <https://www.nab.usace.army.mil/SM-1A/>

Printed or Electronic Copy **Request via email:**
CENAB-SM1A@usace.army.mil

Request via postal mail:
Brenda M. Barber, P.E.
USACE Program Manager
c/o AECOM
3900 C Street, Suite 403
Anchorage, AK 99503

In accordance with NEPA, USACE invites individuals and public agencies to participate in its decision-making process. Your comments on the Proposed Action, Draft EA, and Draft FNSI are requested. Written comments on the Draft EA and Draft FNSI (including requests for additional information about the Proposed Action and NEPA process) should be sent to USACE using the contact information provided above. **Comments should be submitted or postmarked by March 28, 2021.**

USACE will hold in-person public meetings at the following locations to provide interested parties and local communities an opportunity to learn about and comment on the Proposed Action, Draft EA, and Draft FNSI:

- **Westmark Fairbanks Hotel and Conference Center**—813 Noble Street, Fairbanks, AK 99701 on March 9 from 5:00 p.m. to 9:00 p.m.
YouTube Livestream: <https://youtu.be/BRQPuLfonPM>
- **Delta Junction Community Center**—2287 Deborah Street, Delta Junction, AK 99731 on March 11 from 5:00 p.m. to 9:00 p.m.
YouTube Livestream: <https://youtu.be/tX3PJLLzDo4>

Both meetings will have the same schedule and format consisting of a poster session from 5:00 p.m. to 6:30 p.m., a formal presentation from 6:30 p.m. to 8:00 p.m., and a second poster session from 8:00 p.m. to 9:00 p.m.

In consideration of the COVID-19 public health emergency, the in-person public meetings will be conducted in a manner consistent with applicable Centers for Disease Control and Prevention (CDC) guidelines, health protection measures, and restrictions in effect at the time of the meetings. For individuals who do not wish to attend the in-person meetings, public meetings will also be conducted in a virtual/online format in accordance with the Interim Army Procedures for NEPA dated June 15, 2020. To join the virtual public meeting, navigate a web browser to sm1a.consultation.ai and follow the instructions. The virtual meeting will be open the same dates as the comment period.

Electronic copies of meeting materials will be available for viewing or download on the USACE project website and social media platforms throughout the 30-day public review period, regardless of the public meeting format. Additional information on the Proposed Action, public meetings, and how to join the stakeholder list is also available on the project website.

In accordance with NEPA, members of the general public; military personnel; federal, state, and local agencies; Alaska Natives; and non-governmental organizations with an interest in the Proposed Action are strongly encouraged to participate and submit comments during the 30-day public review period. If you need additional assistance with the review of the Draft EA, please contact the project team by emailing us at CENAB-SM1A@usace.army.mil.

Sincerely,

Brenda M. Barber, P.E.
Program Manager
USACE—Baltimore District

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SM-1A Presentation

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DEACTIVATED SM-1A NUCLEAR POWER PLANT DECOMMISSIONING AND DISMANTLEMENT

Draft Environmental Assessment Public Meeting

March 9 and 11, 2021

Presenter: Brenda M. Barber, P.E. | U.S. Army Corps of Engineers



US Army Corps
of Engineers®



Purpose of Public Meeting



- USACE is proposing to decommission and dismantle the deactivated SM-1A Reactor Facility at Fort Greely (Proposed Action).
- This public meeting is being held during the 30-day Draft EA public review period to provide opportunities for the public to learn about and comment on the Proposed Action, in accordance with the National Environmental Policy Act (NEPA).
- Substantive public and agency comments received during the NEPA process will be addressed in the Final EA, as appropriate.



INTRODUCTION AND WELCOME



Brenda M. Barber, P.E.
Program Manager
Baltimore District
U.S. Army Corps of Engineers



TODAY'S KEY TOPICS

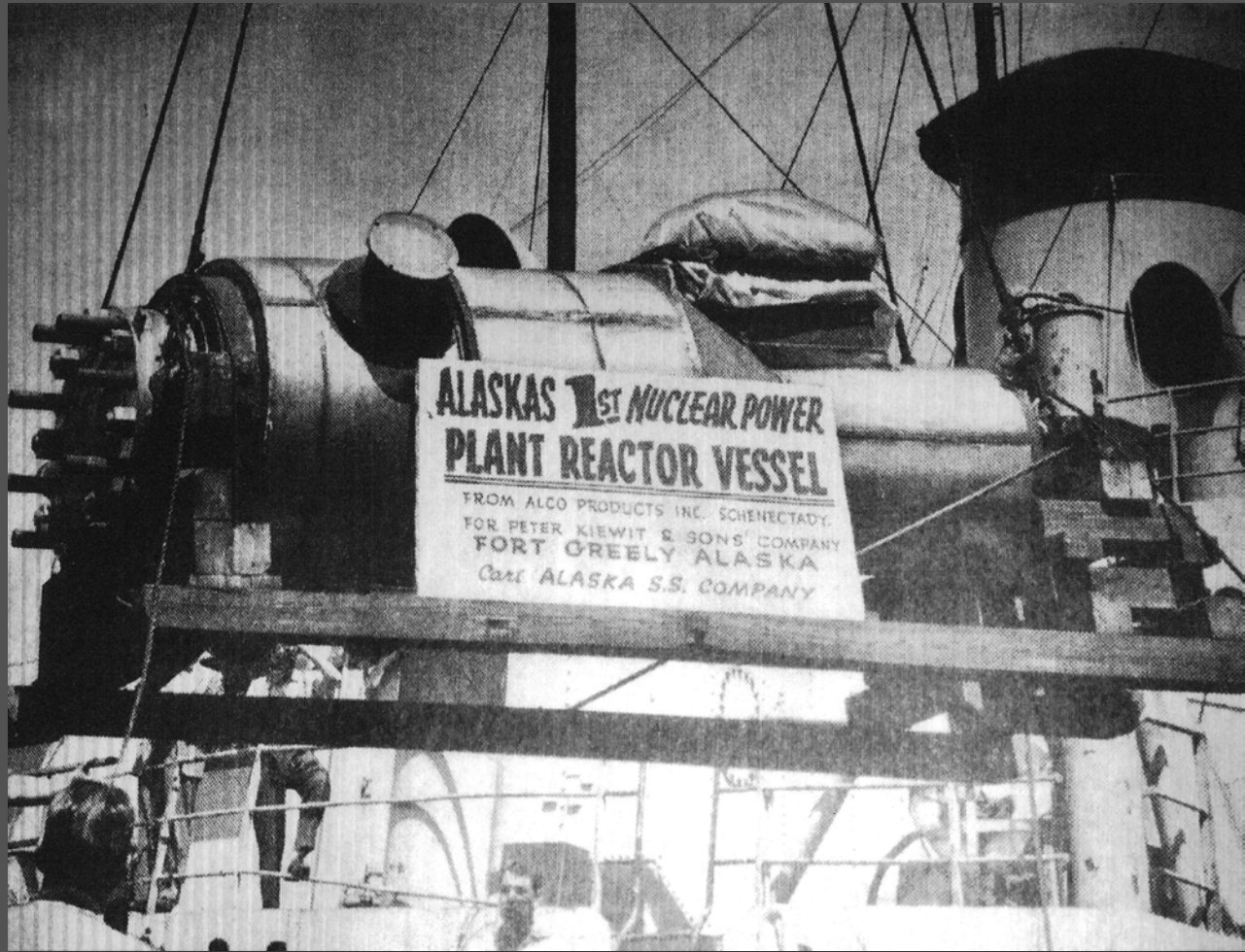
1. Brief History of SM-1A
2. National Environmental Policy Act (NEPA)
3. Proposed Action: Includes Purpose and Need, Alternatives, and Resources Analyzed
4. Draft Environmental Assessment Findings
5. National Historic Preservation Act (NHPA) Section 106
6. Public Involvement



There will be question and discussion time at the end of each topic, and at the end of the presentation.



TOPIC 1: BRIEF HISTORY OF SM-1A



FORT GREELY LOCATION

Distances from Fort Greely:

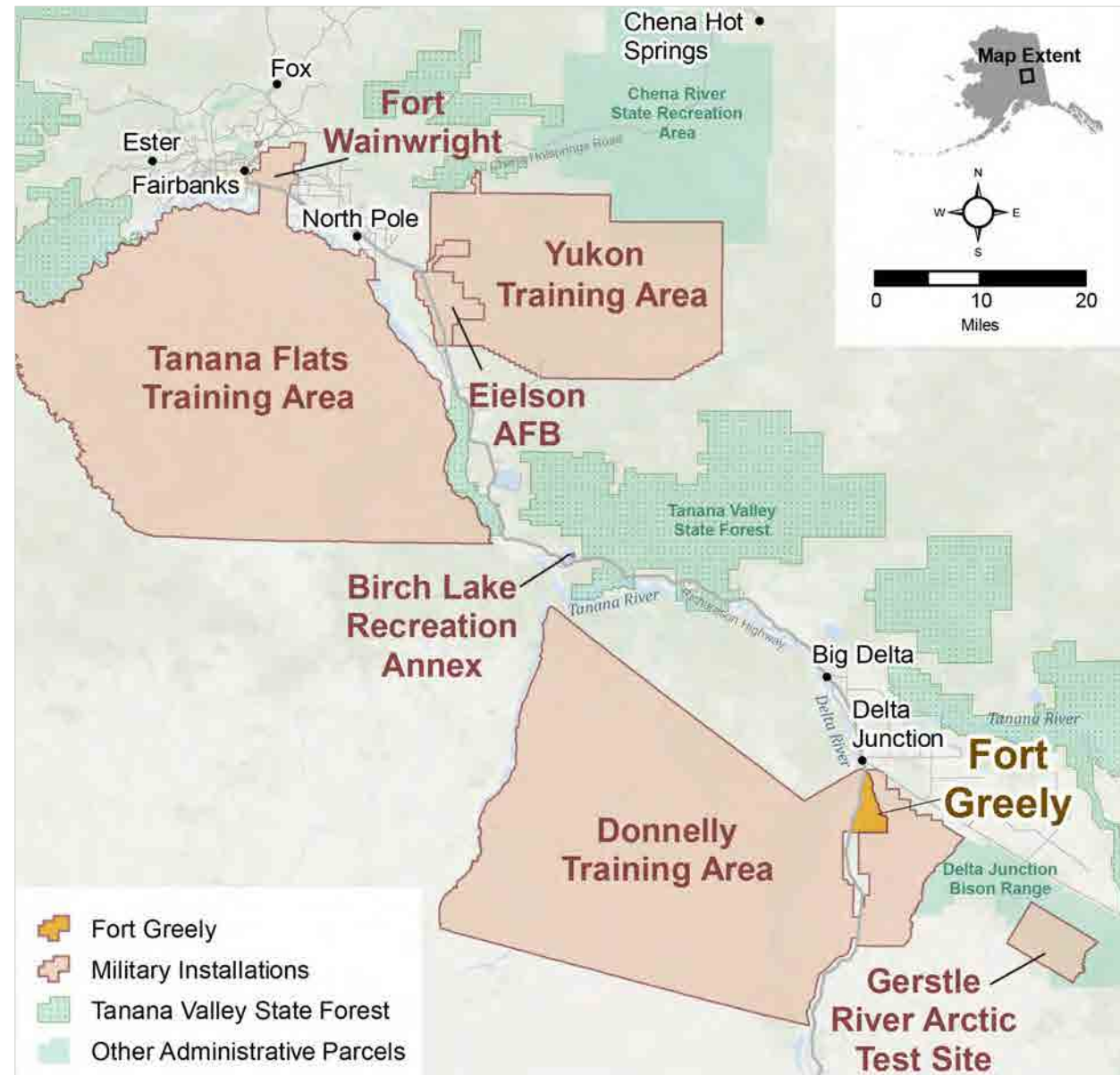
Delta Junction... 5 miles

Fairbanks..... 100 miles

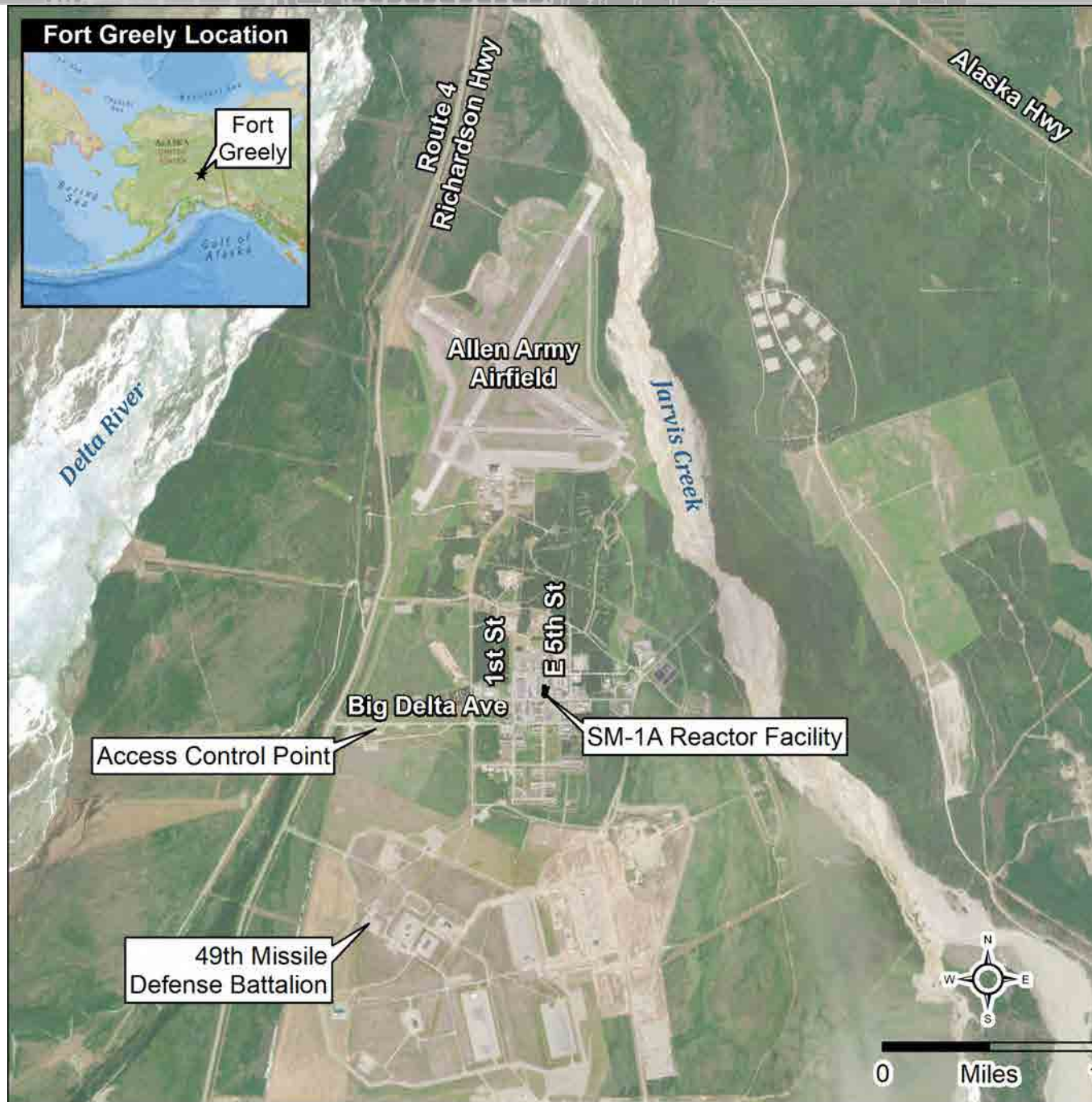
Valdez..... 263 miles

Anchorage..... 328 miles

Whittier..... 386 miles








FORT GREELY

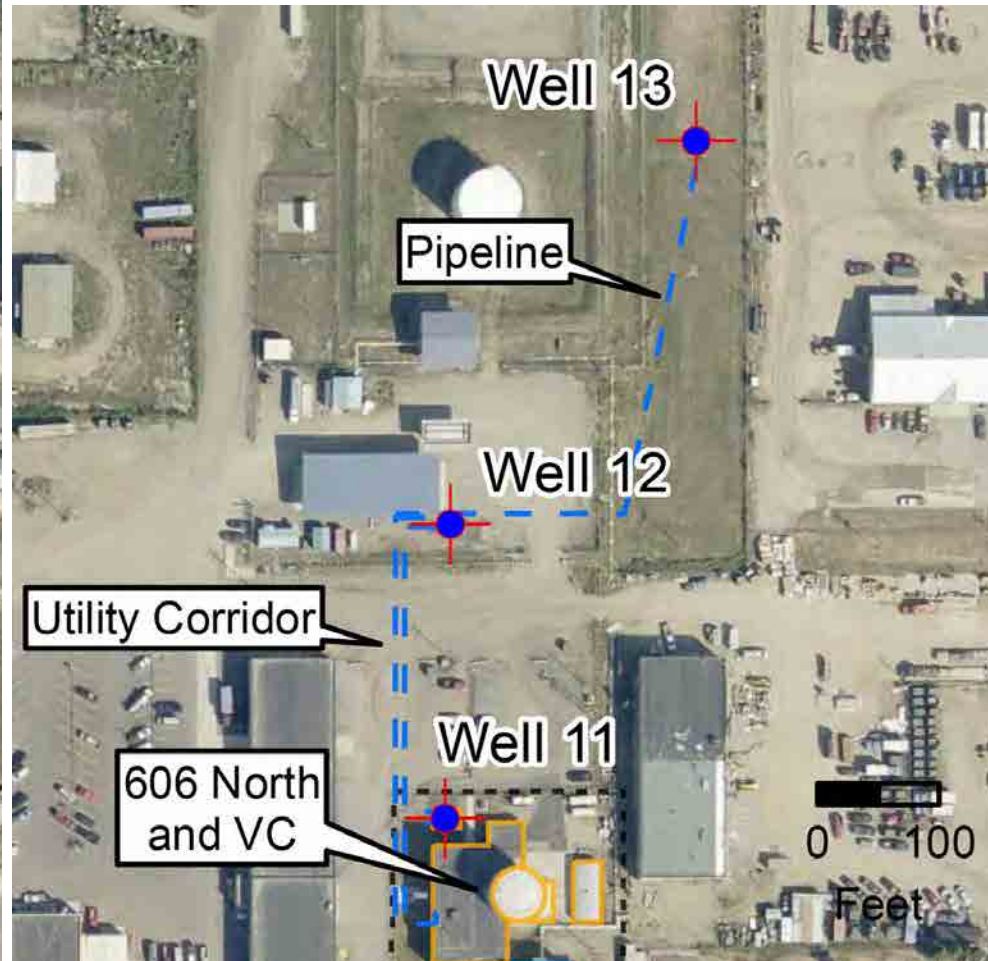


AFFECTED AREAS OF SM-1A



LEGEND

-  Well
- SM-1A Reactor Facility**
-  606 North
-  606 South
-  SM-1A Perimeter Fenceline
-  Underground Utility Infrastructure



SM-1A OPERATING HISTORY

- Built on Fort Greely between 1958 and 1962.
- Designed, constructed, and operated as part of the Army Nuclear Power Program.
- Single-loop, 20.2 MW pressurized water reactor.
- Used highly enriched uranium dioxide fuel to generate 2,000 kW of electrical power and 37,850 pounds of extraction steam per hour.
- Supplied electrical power and heating steam for on-post buildings and facilities from 1962 to 1972.
- Used as an in-service test facility to understand how equipment functions in an arctic environment.



SM-1A DEACTIVATION AND ENCASEMENT HISTORY

- The decommissioning process began upon the reactor's final shutdown in March 1972.
- Initial deactivation consisted of placing the facility in a safe storage (SAFSTOR) configuration, after which it was maintained and monitored in a condition that allows radioactivity to decay over time.
- Regular inspection and monitoring is conducted by USACE in accordance with AR 50-7 and SM-1A Reactor Possession Permit Number SM1A-1-19, Amendment 1-20.

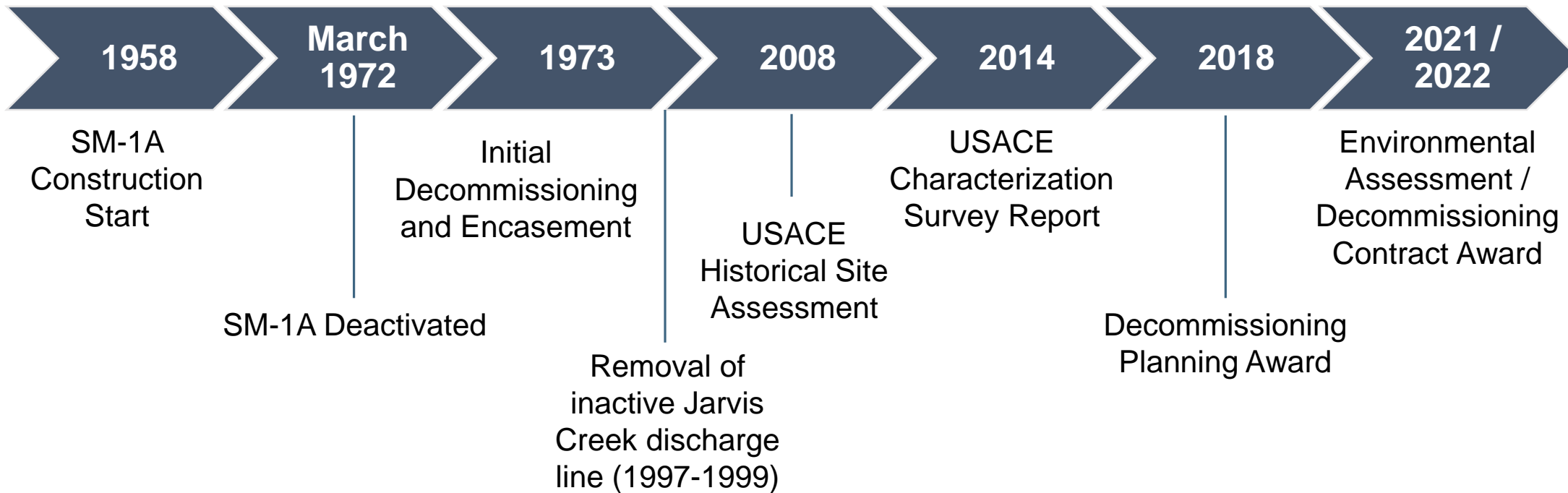


- Buildings 606 North and 606 South contain infrastructure and equipment associated with Fort Greely's conventional utility systems and are owned by Doyon Utilities, LLC.



SM-1A TIMELINE OF ACTIVITIES

| Ongoing monitoring of SM-1A in SAFSTOR since 1972 →



Anticipated project completion in 2028



TOPIC 1: BRIEF HISTORY OF SM-1A

Questions and Discussion



TOPIC 2: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

Deactivated SM-1A Nuclear Reactor Facility Decommissioning and Dismantlement Draft Environmental Assessment

February 2021



UNITED STATES ARMY GARRISON ALASKA FORT GREELY
DELTA JUNCTION, ALASKA



US Army Corps
of Engineers®



U.S. ARMY



NEPA PROCESS OVERVIEW

- The National Environmental Policy Act of 1969 (NEPA) establishes a national policy for the environment (<https://ceq.doe.gov/>).
- NEPA requires federal agencies to analyze the environmental and socioeconomic impacts of their proposed actions.
- NEPA requires opportunities for public involvement to learn about and comment on federal proposed actions.



NEPA PROCESS OVERVIEW

- USACE is preparing an Environmental Assessment (EA) to analyze the potential impacts from the proposed decommissioning (the Proposed Action).
- An EA is a concise public document that provides sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS). The EA includes discussions of the following:
 - The purpose of and need for the proposal.
 - Alternatives to the proposal (as required under Section 102 [2] [E] of NEPA).
 - The environmental and socioeconomic impacts of the proposed action and alternatives.
 - A listing of agencies and persons consulted.



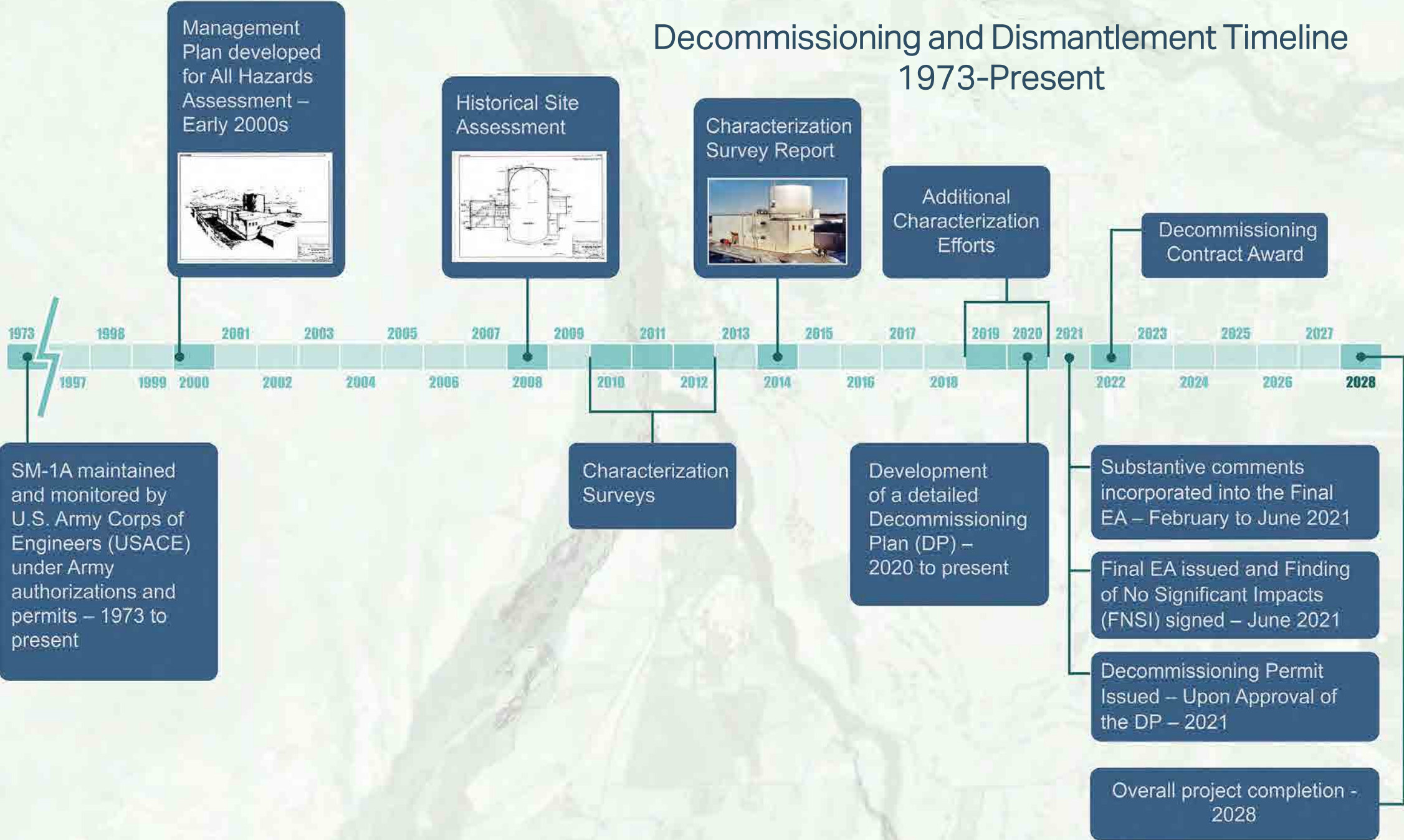
OTHER REQUIREMENTS CONSIDERED BY NEPA* FOR SM-1A

- Clean Water Act (CWA) (33 USC Section 1251 et seq.)
- Resource Conservation and Recovery Act (RCRA) (42 USC Section 6901 et seq.)
- Toxic Substances Control Act (TSCA) (15 USC Section 2601 et seq.)
- Section 438 of the Energy Independence and Security Act (Public Law 110-140)
- Clean Air Act (CAA) of 1990 (42 USC Section 7401 et seq., as amended)
- Migratory Bird Treaty Act (16 USC Section 703 et seq.)
- National Historic Preservation Act (NHPA) (54 USC Section 300101 et seq.)
- Archaeological Resources Protection Act (ARPA) (16 USC 470)
- Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC Section 3001 et seq.)
- EO 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” (1994)
- EO 13045, “Protection of Children from Environmental Health Risks and Safety Risks” (21 April 1997), as amended by EO 13296 (2003)
- Other Federal and State and regulations

This list is not comprehensive; other requirements may apply.



Decommissioning and Dismantlement Timeline 1973-Present



U.S. ARMY



TOPIC 2: NEPA

Questions and Discussion



TOPIC 3: PROPOSED ACTION



PROPOSED ACTION

USACE proposes to:

- Complete the decommissioning and dismantlement of SM-1A in accordance with a Decommissioning Plan approved by the Army Reactor Office (ARO);
- Terminate the U.S. Army-issued SM-1A decommissioning permit; and
- Release the SM-1A site for unrestricted use in accordance with U.S. Nuclear Regulatory Commission (NRC) regulations adopted by the Army.

The Proposed Action would be implemented over approximately 6 years between 2022 and 2028.



PROPOSED ACTION: PURPOSE

The ***purpose*** of the Proposed Action is to:

- Safely remove, transport, and dispose of all materials and equipment, structures, and residual contamination associated with SM-1A;
- Release the SM-1A site for unrestricted use in accordance with radiological dose criteria established by the NRC and adopted by the Army; and
- Terminate the U.S. Army-issued SM-1A Decommissioning Permit.



PROPOSED ACTION: NEED

The *need* for the Proposed Action is to:

- Complete the decommissioning of SM-1A within 60 years (by 2032) of permanent cessation of operations in accordance with NRC regulations and Army Regulation 50-7, Army Reactor Program (17 November 2016), which establishes the Army's intent to follow NRC guidelines.
 - SM-1A has been maintained in a safe storage (SAFSTOR) condition and subject to regular inspection and monitoring since 1972.
 - In its current condition, SM-1A does not support the Army's mission on Fort Greely, now or in the future.
 - The Proposed Action would enable USACE to meet Army mission objectives to decommission SM-1A, terminate the SM-1A decommissioning permit, and release the underlying land for unrestricted use.



DRAFT EA ALTERNATIVES

Proposed Action Alternative

This alternative would implement the Proposed Action, meeting the Purpose and Need. Following completion, no remnants of SM-1A would remain on the site.

No Action Alternative

USACE would continue to maintain SM-1A in SAFSTOR condition. This alternative would not meet the Purpose and Need. However, it is included to provide a comparative baseline in accordance with 40 Code of Federal Regulations (CFR) 1502.14.

Alternatives initially evaluated by USACE that did not meet the Proposed Action's purpose and need were dismissed from detailed analysis in the Draft EA.



RESOURCES ANALYZED IN THE DRAFT EA

- Cultural Resources
- Water Resources
- Socioeconomics and Environmental Justice
- Biological Resources
- Air Quality
- Transportation and Traffic
- Utilities
- Soils
- Waste
- Safety and Health
- Cumulative Effects (all resources)

The following resources would not be meaningfully or measurably affected by the Proposed Action and were dismissed from detailed analysis: *Airspace; Land Use; Noise; Recreation; Seismology; Geology and Topography; Wetlands and Floodplains; Rare, Threatened, and Endangered Species; and Visual Resources.*



TOPIC 3: PROPOSED ACTION

Questions and Discussion



TOPIC 4: DRAFT EA FINDINGS



DRAFT EA FINDINGS SUMMARY

- The Proposed Action would have **no significant adverse impacts** on the environment.
- Under NHPA Section 106, the Proposed Action would have an **adverse effect** on the SM-1A historic property, which is eligible for listing in the National Register of Historic Places (NRHP).
- Execution of a Memorandum of Agreement (MOA) between USACE, the Alaska SHPO, and other participating consulting parties will ensure that the NHPA Section 106 adverse effect remains less than significant.



IMPACT MINIMIZATION

To proactively minimize potential adverse impacts from the Proposed Action, USACE will:

- Comply with applicable federal, state, and local regulatory and permitting requirements.
- Adhere to **Best Management Practices (BMPs)** and other applicable measures identified in the Draft EA.



CULTURAL RESOURCES IMPACTS

- **Long-term, less-than-significant adverse effect** on historic properties from the removal of SM-1A, which is eligible for listing in the NRHP.
- **No effect** on archaeological resources.
- **NHPA Section 106 determination:** Adverse effect on NRHP-eligible historic properties.



BMPs

- Memorandum of Agreement (MOA) with Alaska SHPO and other consulting parties.
- Unanticipated discoveries plan.



WATER RESOURCES IMPACTS

- **Short-term, less-than-significant adverse impacts** from sedimentation and potential accidental spills.
- **No long-term impacts** on surface waterbodies or water quality.
- **Beneficial long-term effects** on stormwater management from restoration of the site, and on groundwater from decommissioning of inactive wells.



BMPs

- Construction General Permit (CGP) for Storm Water Discharges.
- Site-specific Stormwater Pollution Prevention Plan (SWPPP).
- Site-specific liquid effluent monitoring plan.
- Spill containment and cleanup kits.



SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE IMPACTS

- **Short-term, beneficial effects** on local demography and economy from temporary decommissioning-related jobs; increased spending to purchase local goods and services.
- **No short-term or long-term disproportionately adverse impacts** on environmental justice communities or children.
- **No long-term impacts.**



BMPs

- Continued public engagement with local communities.
- Maintain information on the USACE project website.
- Adhere to BMPs for other resources to minimize potential adverse impacts on nearby communities.



BIOLOGICAL RESOURCES IMPACTS

- **Short-term, less-than-significant adverse impacts** on:
 - vegetation from temporary disturbance; and
 - wildlife from temporary disturbance, displacement, or annoyance during decommissioning activities, and from an elevated risk of collisions with decommissioning-related traffic.
- **No long-term impacts.**



BMPs

- Prevent or minimize introduction or spread of invasive plants.
- Use wildlife spotters or escort vehicles during on-post transportation activities, as necessary.
- Coordinate with Fort Greely to address active Migratory Bird Treaty Act-protected bird nest(s) if observed on the SM-1A site.



AIR QUALITY IMPACTS

- **Short-term, less-than-significant adverse impacts** from potential emissions of fugitive dust and criteria pollutants from decommissioning-related vehicles and equipment.
- **No long-term impacts.**



BMPs

- Directly load waste for transport – do not stockpile.
- Transport waste in closed containers, as applicable.
- Cover payloads.
- Spray water on paved and unpaved roads.
- Cover or spray water on soil stockpiles.



UTILITIES IMPACTS

- **Short-term, less-than-significant adverse impacts** from pre-planned, temporary utility service outages or disruptions during the relocation of utility systems or components.
- **No long-term impacts.**



BMPs

- Coordinate with potentially affected facilities in advance.
- Sequence or stagger temporary utility service shutoffs or disruptions.



SOIL RESOURCES IMPACTS

- **Short-term, less-than-significant adverse impacts** from disturbance and excavation during decommissioning and dismantlement activities.
- **Long-term, beneficial effects** on soils from the removal of contaminated soils.



BMPs

- Site-specific SWPPP to minimize soil migration and sedimentation of receiving waterbodies.
- Replace excavated soils with clean fill soils meeting applicable Fort Greely requirements.
- Environmental monitoring plan.
- Final Status Surveys (FSS) to verify unrestricted release criteria.
- Seed the site with native grasses following backfill and grading.



WASTE IMPACTS

- **Short-term, less-than-significant adverse impacts** from the generation and management of radioactive and non-radioactive waste.
- **No long-term impacts** from radioactive and non-radioactive waste.
- **Long-term, beneficial effects** from the removal and disposal of radioactive and non-radioactive waste.



BMPs

- Hazardous Material Abatement Plan.
- Waste Management and Disposal Plan.
- Manage and dispose of waste in accordance with applicable regulatory requirements.
- Spill Prevention, Control, and Countermeasure (SPCC) Plan.
- Spill containment and cleanup kits.



SAFETY AND HEALTH IMPACTS

- **Short-term, less-than-significant adverse impacts** from increased risk of worker exposure or injury during decommissioning and dismantlement activities.
- **Long-term, beneficial effects** on safety and health from the removal of radioactive waste and non-radioactive regulated solid waste.

BMPs

- Industrial Safety Program.
 - Accident Prevention Plan (APP).
 - Waste Management and Disposal Plan (WMDP).
 - Coordinate with fire and emergency services or other relevant organizations prior to hazardous tasks.
 - Minimize radiological exposures in accordance with EM 385-1-80,
- Radiation Protection.
- Radiation Safety Program and Radiation Protection Plan.
 - Conduct environmental monitoring.
 - Memorandums of Agreement (MOA) with fire and emergency response services and/or emergency health care providers.



TRANSPORTATION AND TRAFFIC IMPACTS

- **Short-term, less-than-significant adverse impacts** from increased decommissioning-related traffic that would have the potential to contribute to traffic congestion.
- **Short-term, less-than-significant adverse impacts** from the transportation of waste.
 - All waste would be packaged and transported in accordance with applicable NRC, USDOT (including International Maritime Dangerous Goods), USEPA, and State of Alaska requirements.
- **Short-term, less-than-significant adverse impacts** on marine ports and shipping.
- **No short-term adverse impacts** on the freight rail transportation network.
- **No long-term impacts.**

BMPs

- Use trained and qualified contractors to transport waste.
- Transportation management plan (on-post).
- Transportation management (off-post).
- Schedule decommissioning-related traffic for off-peak hours.
- Package and ship all waste in accordance with applicable regulatory requirements.



WASTE TRANSPORTATION AND RADIATION SAFETY



WASTE TRANSPORTATION

- Non-hazardous solid waste would be loaded directly into containers or trucks and transported to the appropriate in-state disposal facility.
- Waste that cannot be disposed of in Alaska would be shipped to the contiguous 48 states for disposal via a combination of trucks, trains, and vessels.
- Waste would be transported by licensed and qualified contractors in accordance with applicable NRC, USDOT (including International Maritime Dangerous Goods), USEPA, and State of Alaska regulatory and permit requirements.



WASTE TRANSPORTATION

Radioactive waste and non-radioactive regulated waste that cannot be disposed of in Alaska would be transported to the contiguous 48 states for final disposal:

- Trucked to a rail yard in Fairbanks where it would be transferred to rail cars.
- Transported by train to the Port of Whittier or Port of Alaska where it would be loaded onto vessels.
- Shipped to Port of Seattle or West Coast port via established navigation routes.
- Transported from Port of Seattle or West Coast port by rail or truck to final disposal facilities.



WASTE TRANSPORTATION – ROUTE OPTIONS

Truck shipments from Ft. Greely to Fairbanks, Alaska

- Twice weekly shipments (average)
- 6-hour roundtrip drive (filled/empty containers)

Rail shipments from Fairbanks to Port of Whittier or Port of Alaska

- 2 weekly shipments available
- 1 day duration

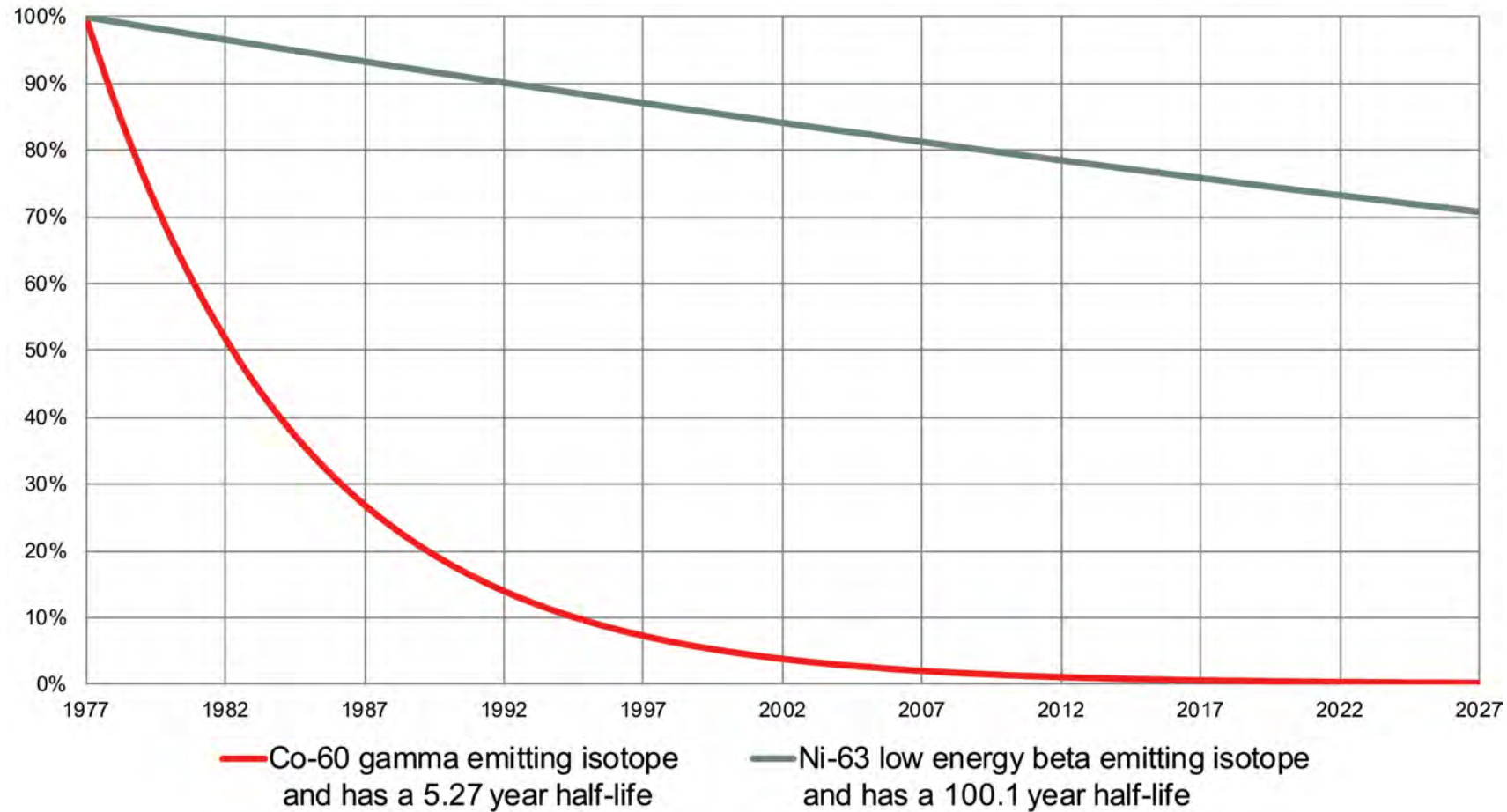
Vessel to Port of Seattle, WA or West Coast port

- Twice weekly service
- Departs Wednesday and Friday
- 13-day transit one way (to Port of Seattle, WA)



RADIATION SAFETY

RADIOACTIVE DECAY SINCE SHUTDOWN

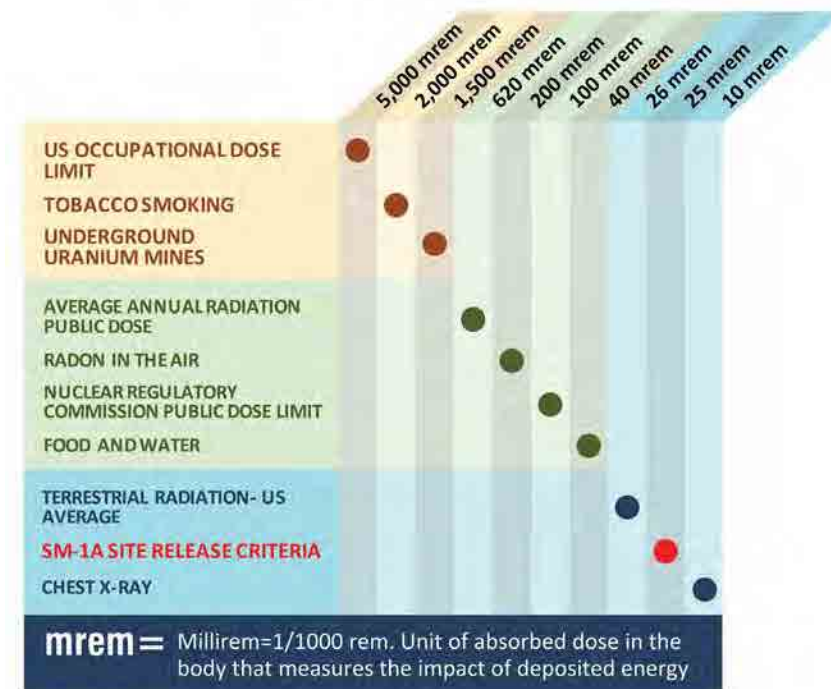


RADIATION SAFETY

- There will be **minimal risk** to the public from the SM-1A project.
- The SM-1A reactor pressure vessel contains **no nuclear fuel** – fuel was removed in 1973-1974 during deactivation.
- Safe storage (SAFSTOR) period restricted access to radioactive materials and has allowed **residual radioactivity to decay** and minimize worker exposure to radiation during decommissioning to the extent possible.
- A highly skilled team of engineers, radiological health physics professionals, scientists and contractors will use proven techniques with full adherence to safety regulations.

Safety is the number one priority for USACE, to include the safety of our workers, the surrounding tenants on base, and the community.

ANNUAL RADIATION DOSES IN MILLIREM-
VARIOUS EXPOSURES

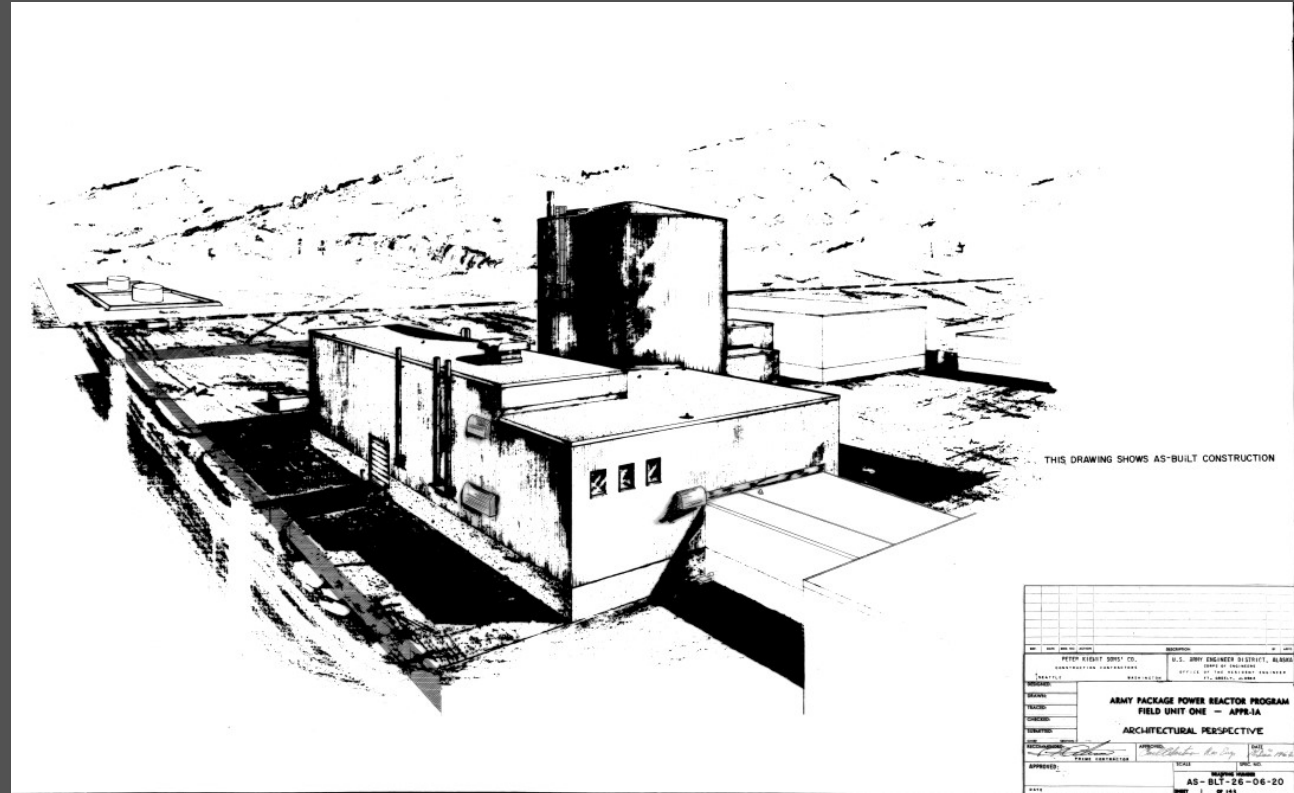


TOPIC 4: DRAFT EA FINDINGS

Questions and Discussion

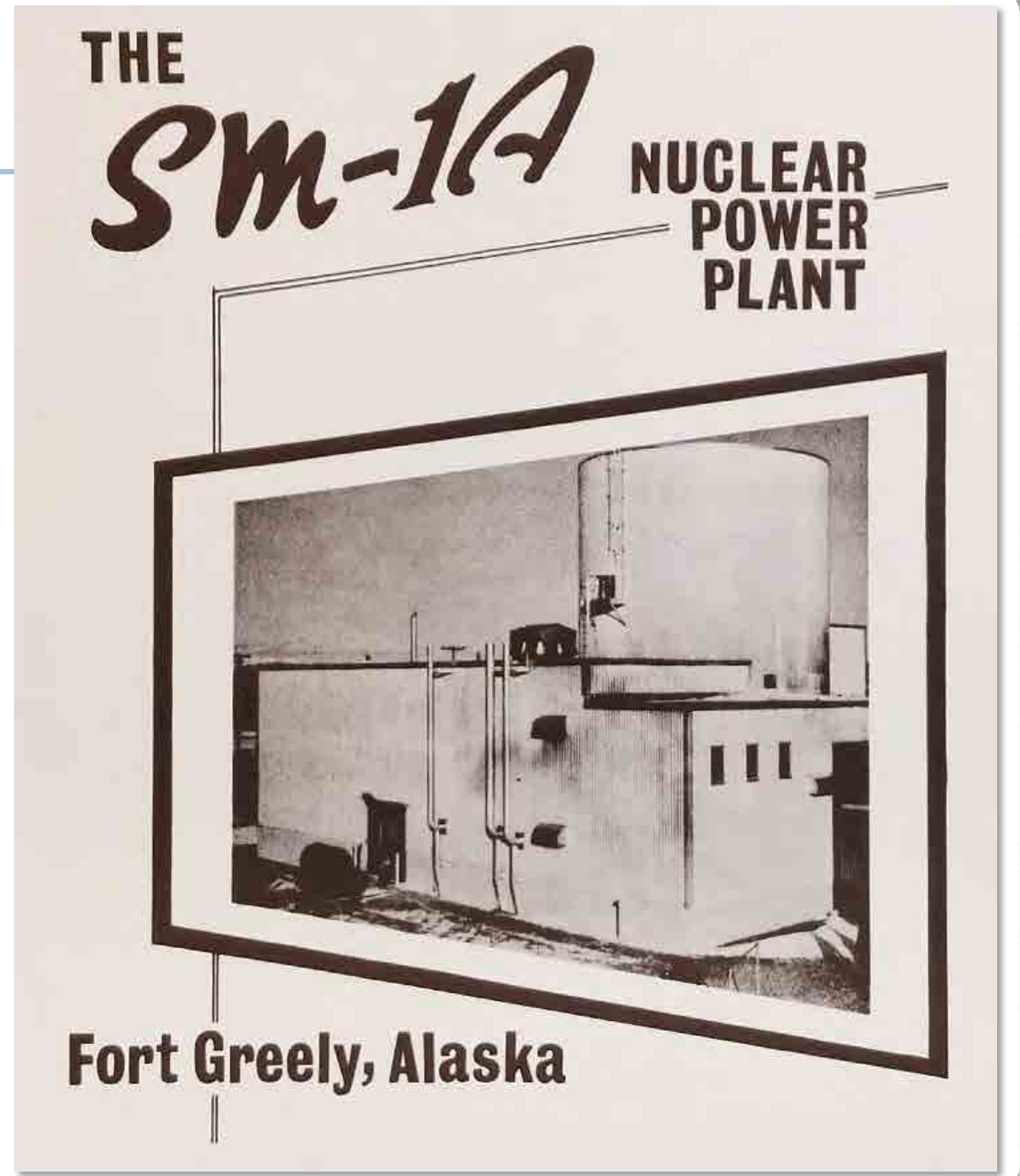


TOPIC 5: NATIONAL HISTORIC PRESERVATION ACT (NHPA) SECTION 106



NHPA SECTION 106

- The NHPA Section 106 process for the Proposed Action is being conducted in parallel with the NEPA process.
- USACE is the lead federal agency for NHPA Section 106 consultation regarding the Proposed Action.

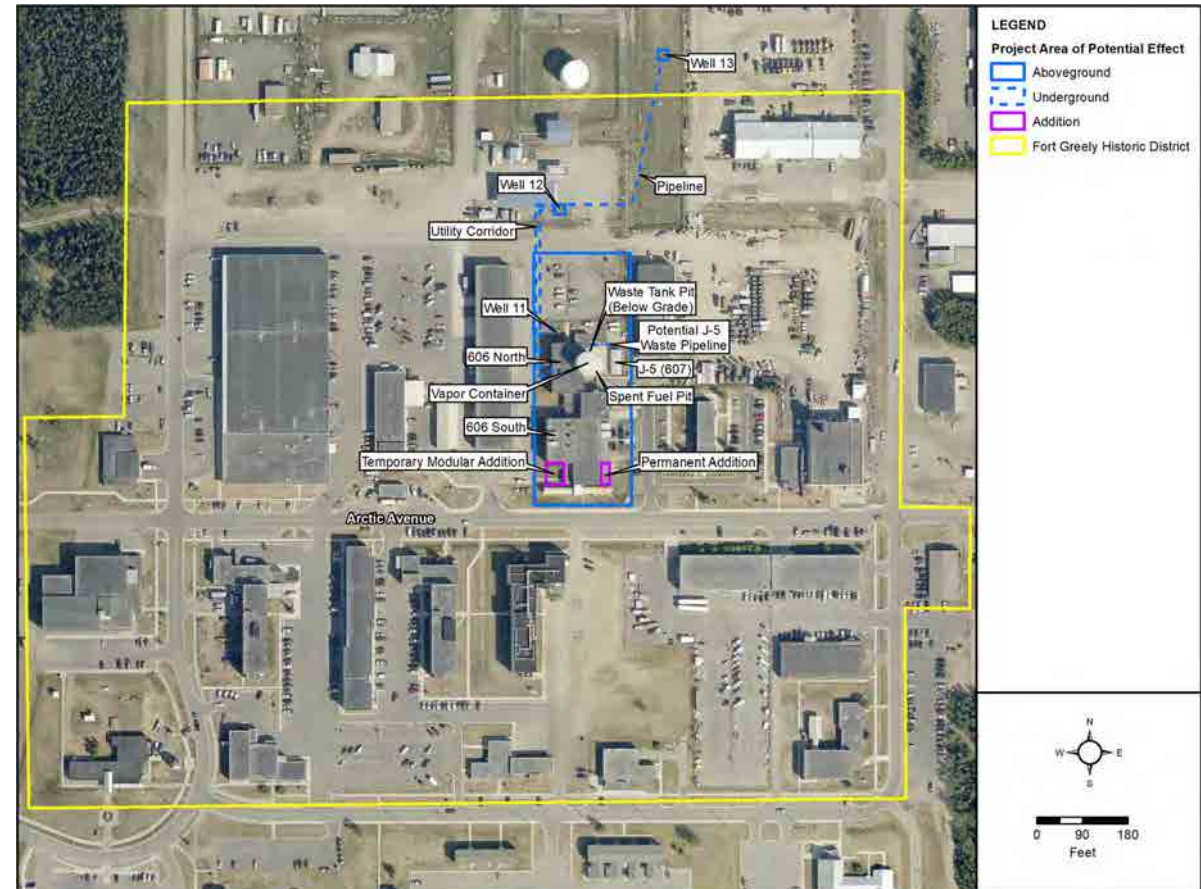
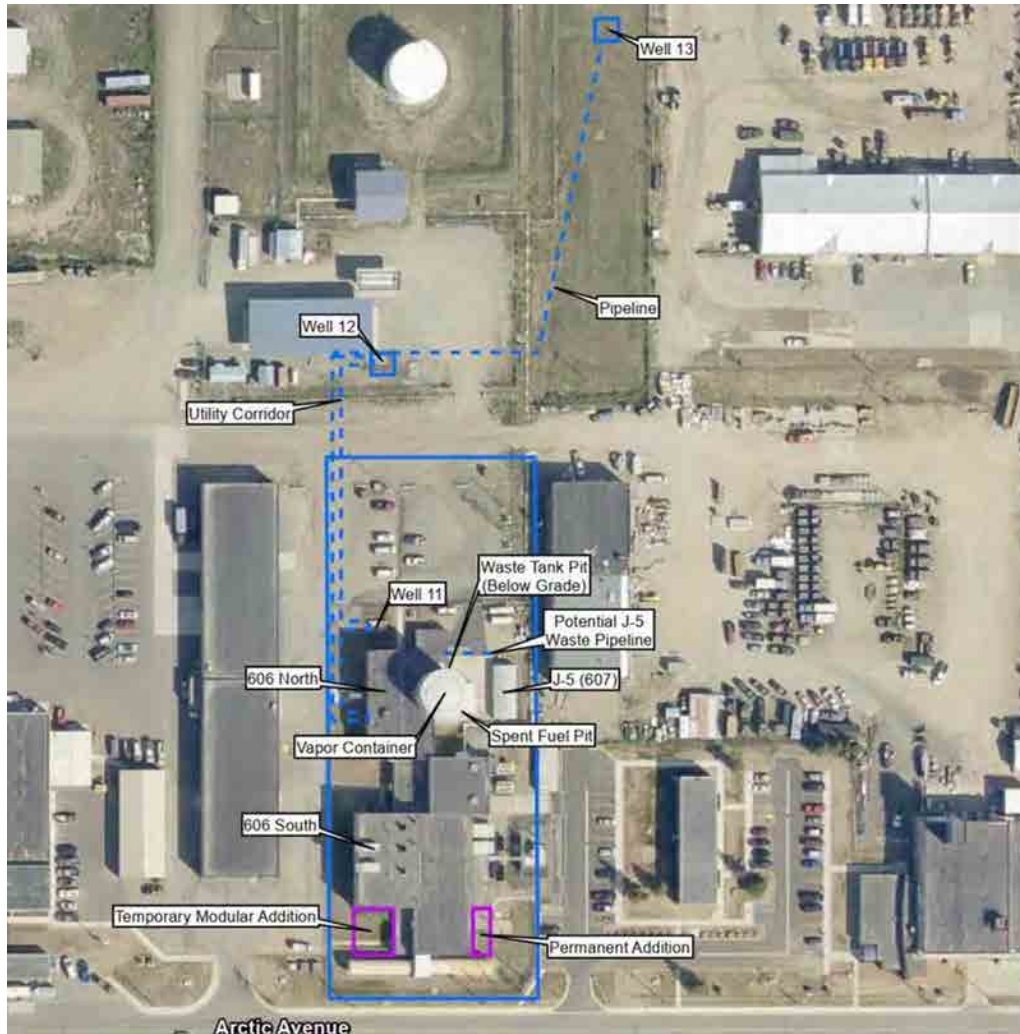


NHPA SECTION 106

- The Army has determined that SM-1A is eligible for listing in the National Register of Historic Places (NRHP).
- SM-1A is a contributing resource in the NRHP-eligible Fort Greely Historic District.

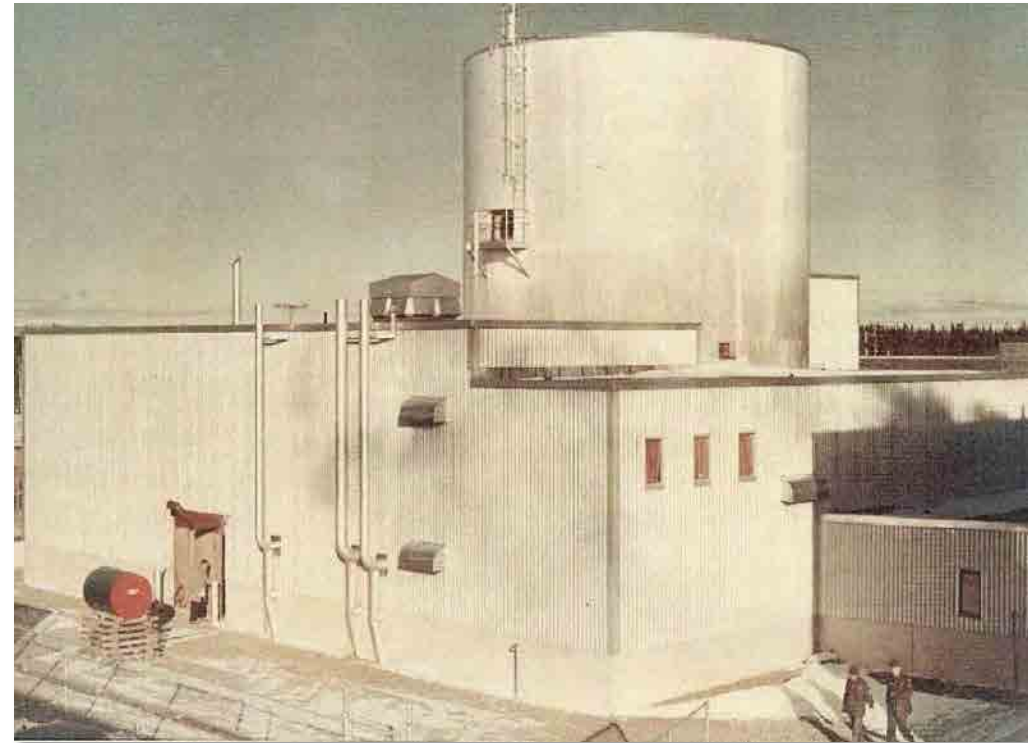


AREA OF POTENTIAL EFFECT AND HISTORIC DISTRICT



NHPA SECTION 106

- Under Section 106, the Proposed Action would have an adverse effect on the SM-1A historic property and the Fort Greely Historic District.
- USACE will resolve this adverse effect by executing a Memorandum of Agreement with participating consulting parties and adhering to stipulations specified therein.
- Execution of the MOA would ensure that adverse effects on historic properties remain less than significant.



NHPA SECTION 106

- No impacts on archaeological resources are anticipated due to previous ground disturbance.
- USACE would adhere to U.S. Army Garrison Alaska procedures in the event that a previously unidentified archaeological site is discovered.



TOPIC 5: NHPA SECTION 106

Questions and Discussion



TOPIC 6: PUBLIC INVOLVEMENT



PROJECT STAKEHOLDERS

The Army is committed to transparently sharing accurate information in a timely manner throughout this project and among all relevant stakeholders, to ensure that information is coordinated and stakeholder concerns are fully addressed.



STAKEHOLDER ENGAGEMENT

- USACE is consulting with multiple regulatory agencies regarding the Proposed Action including, but not limited to:
 - U.S. Environmental Protection Agency, Region 10
 - Alaska Department of Natural Resources
 - Alaska Department of Environmental Conservation
 - Alaska Office of History and Archaeology, which is the State Historic Preservation Office (SHPO)
- USACE is consulting with federally-recognized Alaska Native tribes in accordance with DOD Instruction 4710.02, Interactions with Federally Recognized Tribes.



U.S. ARMY



PUBLIC REVIEW PERIOD

- The Draft EA and Draft Finding of No Significant Impact (FNSI) are available for a 30-day public review and comment period from **February 26, 2021 through March 28, 2021**.
 - An extension to the review period may be requested by the public.
- This review period is also an opportunity for the public to participate in the National Historic Preservation Act (NHPA) Section 106 process being conducted in parallel with the NEPA process.



PUBLIC INVOLVEMENT – WAYS TO COMMENT

- Comments may be submitted during the review period:
 - **At in-person meetings**
 - **By email**
 - **By U.S. Postal Service mail**
- All comments must be postmarked or sent by **March 28, 2021**.
- Substantive public and agency comments received on the Draft EA will be addressed in the Final EA (anticipated Summer 2021).
- Email and postal addresses will be provided.

Your participation in the NEPA process is strongly encouraged!



TOPIC 6: PUBLIC INVOLVEMENT

Questions and Discussion



QUESTIONS AND DISCUSSION



ENGAGE AND LEARN MORE

Learn more about the SM-1A Project online at:

<https://www.nab.usace.army.mil/SM-1A/>

Sign up for the SM-1A stakeholder update email list by emailing:

CENAB-SM1A@usace.army.mil

Stay engaged with us online:



<https://www.facebook.com/USACEBaltimore/>



@USACEBaltimore



www.nab.usace.army.mil



Copies of the Draft EA

The public is invited
to comment during the
30-day public review
and comment period:

February 26, 2021



March 28, 2021

- Print copies of the Draft EA and Draft FNSI are available from USACE upon request.
- Electronic copies are available for download on the project website (<https://www.nab.usace.army.mil/SM-1A/>)
- Print copies of the Draft EA and Draft FNSI may be available to the public (COVID-19 health mandate restrictions permitting) at:
 - Delta Community Library (limited space/reduced hours)
 - Noel Wien Public Library in Fairbanks (online version available; limited space/hours; curbside pickup available)
 - Z. J. Loussac Library in Anchorage (currently closed; curbside pickup available; online version available)
 - Fort Wainwright Library (currently closed)



Ways to Comment

Written comments must be postmarked or submitted by March 28, 2021.

Send email comments to
CENAB-SM1A@usace.army.mil

Fill out a comment form at the in-person public meeting

Send written comments by U.S. Postal Mail to:

SM-1A Project
Brenda M. Barber, P.E.
USACE Program Manager
c/o AECOM
3900 C Street, Suite 403
Anchorage, AK 99503

Your participation in this process is strongly encouraged!



THANK YOU FOR ATTENDING TODAY'S EVENT

USACE appreciates your input on the
Deactivated SM-1A Nuclear Power Plant
Decommissioning and Dismantlement Project.

We look forward to engaging with you in this process.



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Poster Boards

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WELCOME

Decommissioning and Dismantlement of the Deactivated SM-1A Nuclear Power Plant United States Army Garrison Alaska, Fort Greely

Introduction

- In accordance with the National Environmental Policy Act of 1969 (NEPA), the U.S. Army Corps of Engineers (USACE) has made the Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FNSI) available for a 30-day public review period.
- The 30-day public review period runs from February 26, 2021 through March 28, 2021.
- This public meeting is your opportunity to learn about the Proposed Action and how to provide feedback.
- Substantive public and agency comments received during the NEPA process will be addressed in the Final EA, as appropriate.

Your participation in the NEPA process is strongly encouraged!



Public Meeting Schedule

- A virtual public meeting is open for the entire public review period. Navigate to sm1a.consultation.ai from any web browser and follow the on-screen instructions.
- In-person public meetings:

<ul style="list-style-type: none"> – Westmark Fairbanks Hotel and Conference Center 813 Noble Street Fairbanks, Alaska 99701 March 9, 2021 5:00 p.m. to 9:00 p.m. 	<ul style="list-style-type: none"> – Delta Junction Community Center 2287 Deborah Street Delta Junction, Alaska 99731 March 11, 2021 5:00 p.m. to 9:00 p.m.
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- Both public meetings are being livestreamed via YouTube.

Brief History of SM-1A

- SM-1A was built between 1958 and 1962 and operated from 1962 to 1972.
- SM-1A supplied electrical power and heating steam for on-post facilities at Fort Greely, and served as a test facility to understand how equipment would function in an arctic environment.
- The SM-1A decommissioning process began with the reactor's final shutdown in March 1972.
- Initial deactivation of SM-1A included removing the nuclear fuel, conducting minor decontamination, shipping some radioactive waste for disposal, encasing remaining radioactive materials in a sand/grout mixture, sealing the Vapor Container, and installing warning signs and monitoring devices.
- SM-1A has been maintained in a safe storage (SAFSTOR) condition since 1972 to allow residual radioactivity to decay and minimize worker exposure to radiation for final decommissioning and dismantlement activities.
- SM-1A has been subject to regular inspection and monitoring by USACE since 1972.

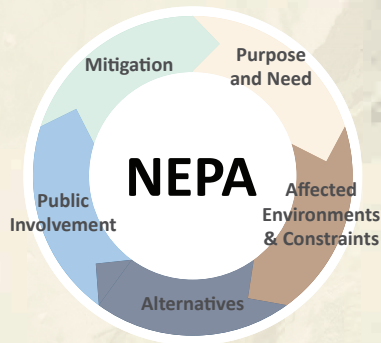


NEPA and Resources Analyzed



National Environmental Policy Act (NEPA)

- The National Environmental Policy Act of 1969 (NEPA) establishes a national policy for the environment (<https://ceq.doe.gov/>).
- NEPA requires federal agencies to analyze the impacts of their proposed actions.
- NEPA requires opportunities for public involvement (e.g., public comment periods and public meetings, including virtual meetings) to learn about and comment on federal proposed actions.
- To comply with NEPA, the U.S. Army Corps of Engineers (USACE) has prepared a Draft Environmental Assessment (EA) to analyze the potential impacts from decommissioning and dismantling the Deactivated SM-1A Nuclear Power Plant at Fort Greely (Proposed Action).
- This EA was prepared under CEQ NEPA Implementing Regulations of 1978, as the initiation of this EA pre-dated the 2020 CEQ revisions.



Resources Analyzed in the Draft EA:

The Draft EA evaluates the Proposed Action's potential environmental impacts on:

- Cultural Resources
- Water Resources
- Socioeconomics and Environmental Justice
- Biological Resources
- Air Quality
- Transportation and Traffic
- Utilities
- Soils
- Waste
- Safety and Health
- Cumulative Effects for all resources

In accordance with NEPA, the following resources were dismissed from analysis in the Draft EA because the Proposed Action would have no potential to meaningfully or measurably affect them: *Airspace; Land Use; Noise; Recreation; Seismology; Geology and Topography; Wetlands and Floodplains; Rare, Threatened, and Endangered Species; and Visual Resources.*



Proposed Action/ Purpose and Need



Proposed Action

The U.S. Army Corps of Engineers (USACE) proposes to complete the decommissioning and dismantlement of SM-1A in accordance with the Army Reactor Office (ARO)-approved Decommissioning Plan (DP); terminate the U.S. Army-issued SM-1A decommissioning permit; and release the SM-1A site for unrestricted use in accordance with U.S. Nuclear Regulatory Commission (NRC) regulations established in 10 Code of Federal Regulations (CFR) 20.1402, *Radiological criteria for unrestricted use* and adopted by the Army.



Purpose of and Need for the Proposed Action

The **purpose** of the Proposed Action is to:

- Safely remove, transport, and dispose of all materials and equipment, structures, and residual contamination associated with SM-1A.
- Release the SM-1A site for unrestricted use in accordance with radiological dose criteria established by NRC in 10 CFR 20.1402 and adopted by the Army.
- Terminate the U.S. Army-issued SM-1A decommissioning permit.

The **need** for the Proposed Action is to:

- Complete the decommissioning of SM-1A within 60 years (by 2032) of permanent cessation of operations in accordance with NRC regulation 10 CFR 50.82(a)(3) and Army Regulation (AR) 50-7, Army Reactor Program (17 November 2016), which establishes the Army's intent to follow NRC guidelines.
- SM-1A has been maintained in a safe storage (SAFSTOR) condition and subject to regular inspection and monitoring since 1972.
- In its current condition, SM-1A does not support the Army's mission on Fort Greely, now or in the future.
- The Proposed Action would enable USACE to meet Army mission objectives to decommission SM-1A, terminate the SM-1A decommissioning permit, and release the underlying land for unrestricted use.

Draft Environmental Assessment Alternatives



The Draft Environmental Assessment (EA) Analyzes Two Alternatives:



Proposed Action Alternative

The U.S. Army Corps of Engineers (USACE) would complete the decommissioning and dismantlement of SM-1A by 2032 in accordance with the Army Reactor Office (ARO)-approved Decommissioning Plan (DP). This alternative includes:

- Dismantlement of the Deactivated SM-1A Nuclear Power Plant and associated buildings and structures.
- Removal of radioactive waste and mixed wastes as well as non-radioactive regulated materials and solid waste.
- Termination of the U.S. Army-issued SM-1A decommissioning permit.
- Release of the SM-1A site for unrestricted use in accordance with U.S. Nuclear Regulatory Commission (NRC) regulations at 10 Code of Federal Regulations (CFR) 20.1402 and adopted by the Army.



No Action Alternative

- USACE would continue to maintain SM-1A in SAFSTOR condition under its current Reactor Possession Permit (SM1A-1-19, Amendment 1-20).
- Regular inspections, monitoring, and other permit-required activities at SM-1A would continue.
- The No Action Alternative does not meet the Proposed Action's purpose and need, but is analyzed in the Draft EA to provide a baseline for the comparison of potential effects from the Proposed Action Alternative.
 - Alternatives initially considered by USACE that did not meet the Purpose and Need will be briefly described in the Draft EA and dismissed from detailed analysis.



Draft EA Findings/ Conclusions Summary



Draft Environmental Assessment Findings Summary

The Draft Environmental Assessment (EA) analysis finds that the Proposed Action would have **no significant adverse impacts** on the environment.

- Most adverse impacts would be **short-term** and **temporary**, occurring during decommissioning / dismantling activities.
- The U.S. Army Corps of Engineers (USACE) would comply with all applicable federal, state, and local regulatory and permitting requirements. USACE and/or its contractors would implement best management practices (BMPs) and measures to minimize adverse impacts to the extent possible.
- Per the EA analysis, cultural resources is the only resource that may experience a potentially significant impact, due to the demolition of the potentially historic SM-1A Reactor Facility and removal of contributing resources from the Fort Greely Historic District.
- To mitigate these adverse effects on historic properties and ensure they remain less-than-significant, USACE is consulting with the Alaska State Historic Preservation Office (SHPO) and other parties to develop a Memorandum of Agreement (MOA), in accordance with Section 106 of the National Historic Preservation Act (NHPA).

See “*Cultural Resources Impacts*” poster for further details on impacts to historic properties.



Beneficial Effects

Removal of the Deactivated SM-1A Nuclear Reactor Facility would have beneficial impacts on some resources, including:

- Socioeconomics and Environmental Justice:**
Short-term, beneficial effects on the local economy from employment of some local workers, and increased spending on local goods and services during decommissioning and dismantlement activities.
- Water Resources:**
Beneficial long-term effects on stormwater management from SM-1A site restoration after facility removal, and on groundwater from the decommissioning of three inactive wells.
- Soils:**
Long-term, beneficial effects from the removal of contaminated soils.
- Waste, Safety and Health:**
Long-term, beneficial effects from the removal and disposal of radioactive and non-radioactive regulated solid waste from SM-1A and Fort Greely.
- Cumulative Effects:**
Beneficial cumulative effects on health and safety.

Cultural Resources Impacts



Section 106 of the National Historic Preservation Act

- Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider the effects of their actions on properties listed, or eligible for listing, in the National Register of Historic Places (NRHP).
- Section 106 provides opportunities for public input on federal actions potentially affecting historic properties. The Section 106 process for the Proposed Action is being conducted in parallel with the NEPA process.
- The Army has determined that the SM-1A Reactor Facility is eligible for listing in the NRHP, and the Alaska State Historic Preservation Office (SHPO) has concurred.



- The Proposed Action would demolish key elements of the NRHP-eligible SM-1A Reactor Facility and would remove contributing resources from the NRHP-eligible Fort Greely Historic District. Thus, under Section 106, the Proposed Action would have an *adverse effect* on the SM-1A Reactor Facility.
- Consultation with the SHPO and other interested parties is required for compliance with NHPA Section 106. The U.S. Army Corps of Engineers (USACE) has initiated the Section 106 consultation process and is developing a memorandum of agreement (MOA) with stipulations to mitigate adverse effects on historic properties.
- Adherence to mitigation measures would ensure that effects on this NRHP-eligible resource remain less-than-significant.
- There would be no effect on archaeological resources.

Waste Transportation Impacts



Waste Transportation

- The Proposed Action would generate approximately 104 containers of waste each year between 2023 and 2028, including:
 - **Solid Waste** (concrete, steel, siding, etc.) may be disposed of in Alaska
 - **Non-Radioactive Regulated Solid Waste** (such as waste containing lead, mercury, or polychlorinated biphenyls [PCBs]) will be shipped to the contiguous 48 states for disposal
 - **Radioactive Waste** (low-level radioactive waste)
- Non-radioactive construction and demolition waste would be loaded into containers or trucks at the SM-1A site and transported directly to appropriate in-state disposal facilities.



- All waste generated by the Proposed Action would be packaged and transported by trained and qualified contractors in accordance with applicable U.S. Nuclear Regulatory Commission (NRC), U.S. Department of Transportation (USDOT) (including International Maritime Dangerous Goods [IMDG] Code), U.S. Environmental Protection Agency (USEPA), and U.S. Coast Guard (USCG) requirements.
- Short-term adverse impacts on public and worker health from the transport of low-level radioactive waste and other waste from the SM-1A site during the Proposed Action would be less-than-significant, and there would be no long-term impacts.



- Radioactive waste and non-radioactive regulated solid waste would be transported to the contiguous 48 states for final disposal:
 - Trucked to a rail yard in Fairbanks where it would be transferred to rail cars
 - Transported by train to the Port of Whittier or Port of Alaska where it would be loaded onto vessels
 - Shipped to Port of Seattle or West Coast port via established navigation routes
 - Transported from Seattle or West Coast port by rail or truck to final disposal facilities



Radiation Safety



What is Radiation?

Radiation

- Invisible energy moving through space

Non-Ionizing Radiation

- Light, sound, heat or infrared waves, microwaves, radio waves, low frequency power line radiation

Ionizing Radiation

- A** Alpha particles (fast moving helium nucleus)
- B** Beta particles (fast moving electrons)
- N** Gamma rays, X-rays (high energy electromagnetic radiation)
- N** Neutrons



What is Radioactivity?

Radioactivity

- Spontaneous emission of radiation
- Is reduced as radioactive atoms decay

Radioactive Atoms

- Are unstable
- Decay until they become stable
- Emit radiation to give off surplus energy

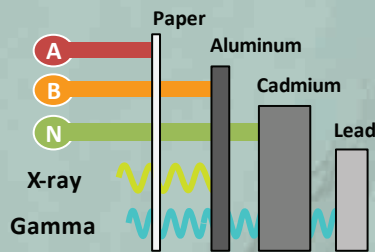
Half Life

- The time it takes for half the atoms of a given amount of radioactive substance to disintegrate.

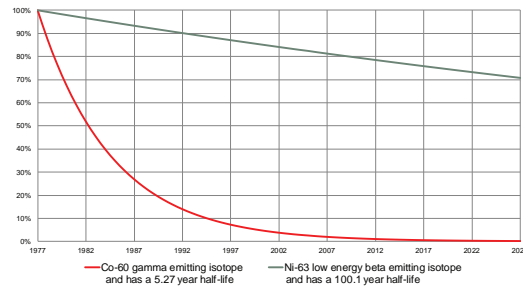
Quantifying Radioactivity

- Disintegration per second (d/s)
- The number of atomic nuclei that decay each second

DIFFERENT TYPES OF RADIATION HAVE DIFFERENT PENETRATING POWERS



RADIOACTIVE DECAY SINCE SHUTDOWN

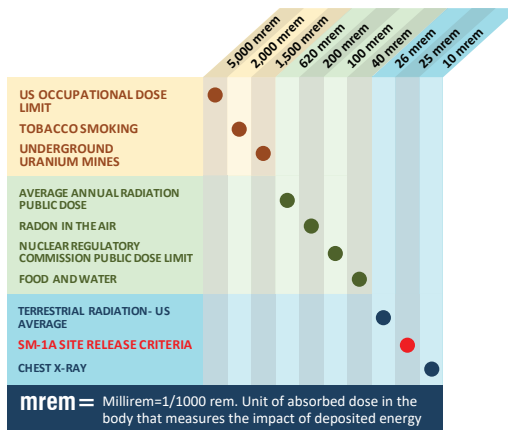


Radiation Safety

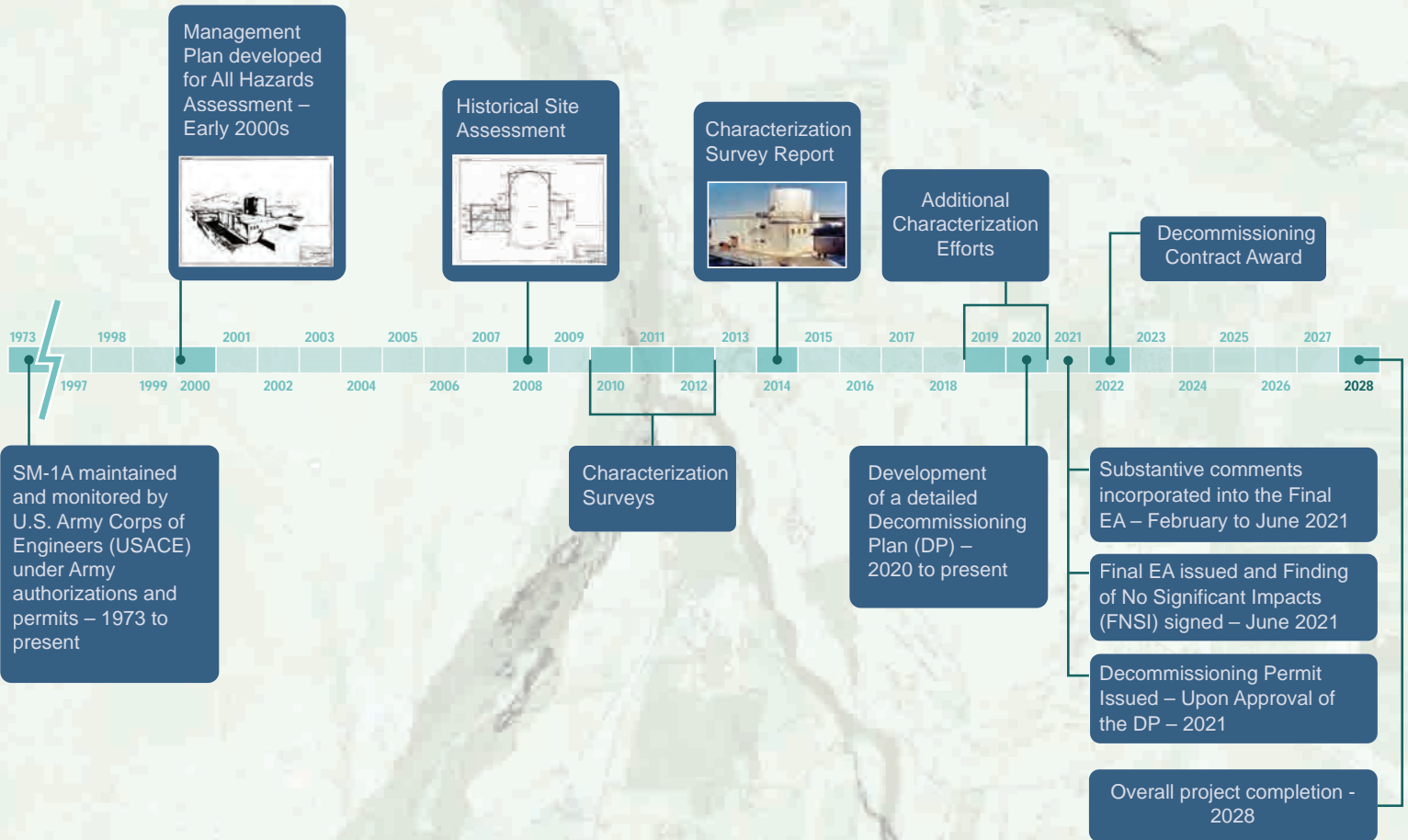
Safety is the number one priority for USACE, to include the safety of our workers, the surrounding tenants on base, and the community.

- There will be minimal risk to the public from the SM-1A project.
- The SM-1A reactor pressure vessel contains **no nuclear fuel** – fuel was removed in 1973-1974 during deactivation.
- Safe storage (SAFSTOR) period restricted access to radioactive materials and has allowed residual radioactivity to decay and minimize worker exposure to radiation during decommissioning to the extent possible.
- A highly skilled team of engineers, radiological health physics professionals, scientists, and contractors will use proven techniques with full adherence to safety regulations.

ANNUAL RADIATION DOSES IN MILLIREM- VARIOUS EXPOSURES



Project Timeline



How to Comment and Learn More



How to Comment on the Draft Environmental Assessment

✓ **The public** is invited to comment on the Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FNSI) during the 30-day public review period from February 26, 2021 to March 28, 2021.

✓ **Electronic** or paper copies of the Draft EA and Draft FNSI may be requested via e-mail or U.S. Postal mail.

✓ **Pending COVID-19** public health emergency restrictions, printed copies of the Draft EA and Draft FNSI are available for review or check out at the following local libraries:

- Delta Community Library in Delta Junction
- Noel Wien Public Library in Fairbanks
- Z. J. Loussac Library in Anchorage
- Fort Wainwright Library

Electronic copies also available for download from Loussac and Wien Libraries.

E-mail comments to: CENAB-SM1A@usace.army.mil

Send written comments by U.S. Postal Mail to:

SM-1A Project
Brenda M. Barber, P.E.
USACE Program Manager
c/o AECOM
3900 C Street, Suite 403
Anchorage, AK 99503



Comment forms are available to provide written comments.

Written comments must be postmarked or sent by March 28, 2021.



Learn More about the SM-1A Project online at:

<https://www.nab.usace.army.mil/SM-1A/>

You can join the SM-1A stakeholder list by e-mailing or sending U.S. Postal mail requests.

Stay Engaged Online with Social Media:

[f https://www.facebook.com/USACEBaltimore/](https://www.facebook.com/USACEBaltimore/)

[t @USACEBaltimore](https://twitter.com/USACEBaltimore)

www.nab.usace.army.mil

Your participation in this process is strongly encouraged!

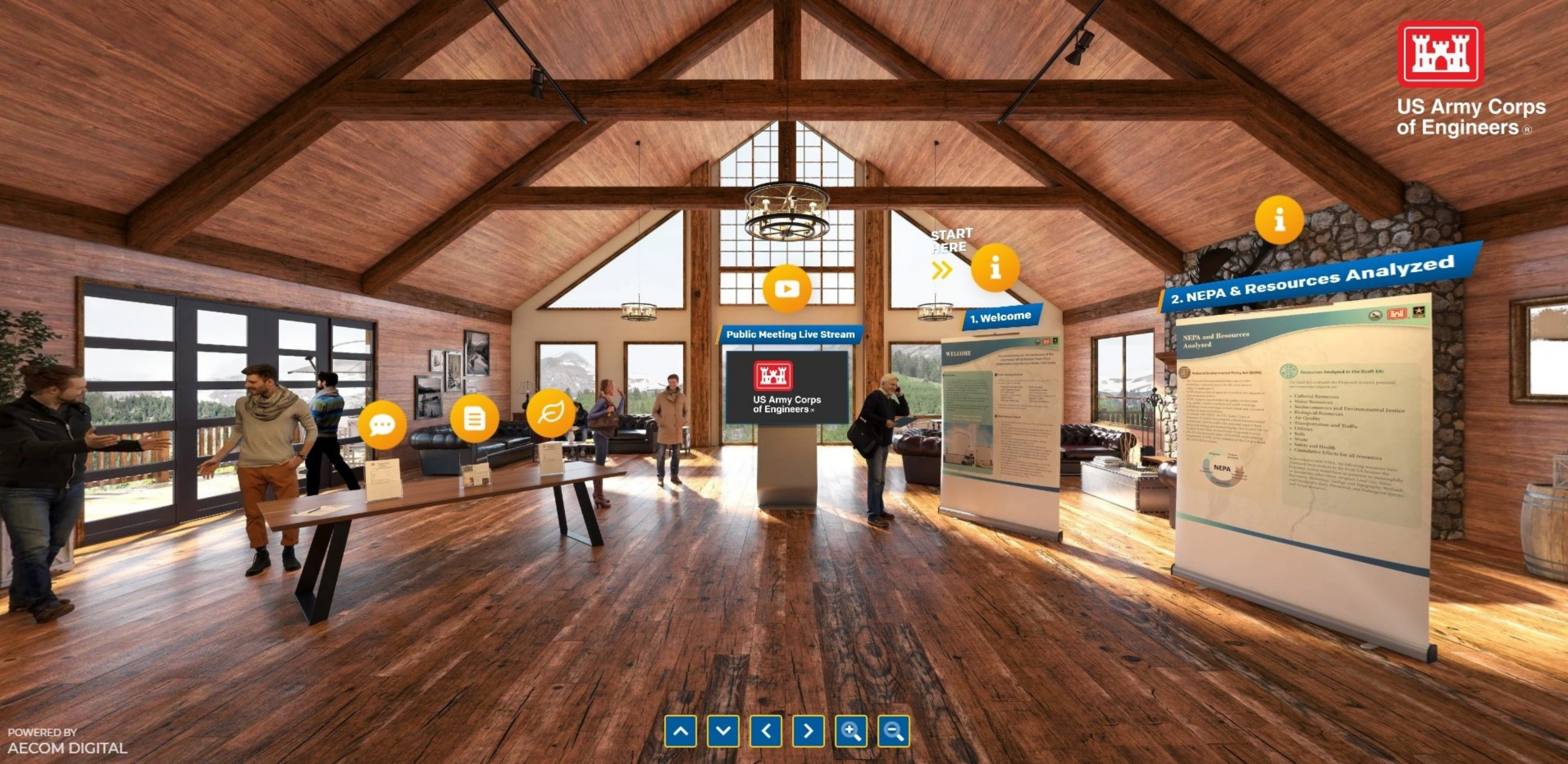


Virtual Public Meeting Room

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US Army Corps
of Engineers®



START
HERE



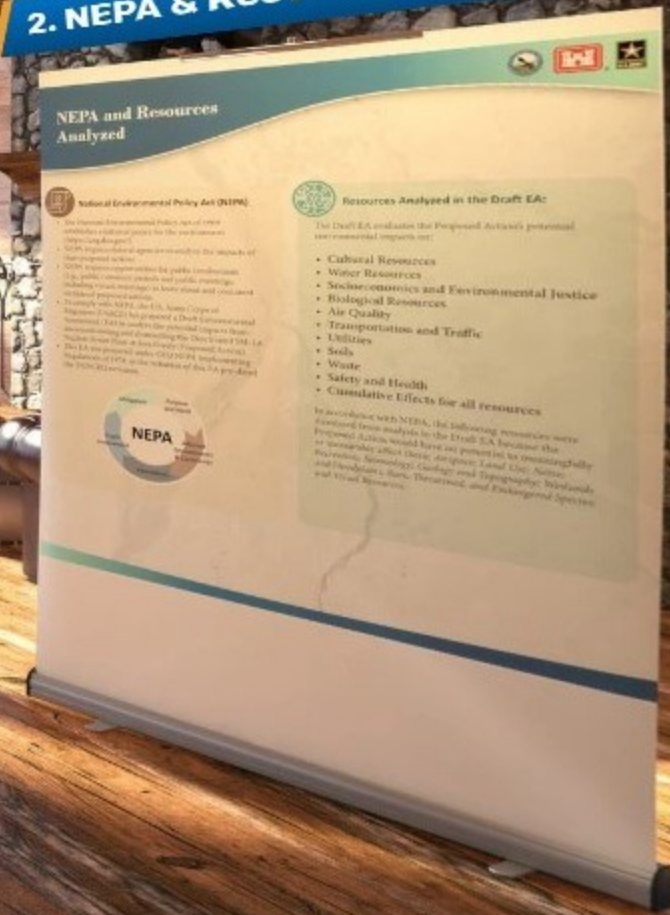
Public Meeting Live Stream



1. Welcome



2. NEPA & Resources Analyzed



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Affidavits

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ANCHORAGE DAILY NEWS

AFFIDAVIT OF PUBLICATION

Account #: 100927 Campaign #:731 Cost: \$2,655.00

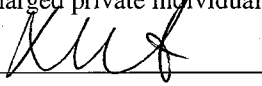
STATE OF ALASKA
THIRD JUDICIAL DISTRICT

Leilisi Misa
being first duly sworn on oath
deposes and says that she is
a representative of the
Anchorage Daily News, a
daily newspaper. That said
newspaper has been approved
by the Third Judicial Court,
Anchorage, Alaska, and it now
and has been published in the
English language continually as a
daily newspaper in Anchorage,
Alaska, and it is now and during
all said time was printed in an
office maintained at the aforesaid
place of publication of said
newspaper. That the annexed is
a copy of an advertisement as it
was published in regular issues
(and not in supplemental form)
of said newspaper

February 26, 2021

and that such newspaper was
regularly distributed to its
subscribers during all of said
period. That the full amount of
the fee charged for the foregoing
publication is not in excess of
the rate charged private individuals.

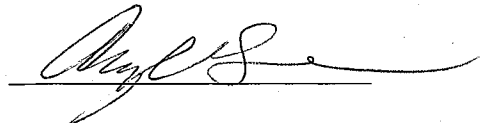
Signed



Subscribed and sworn to before

me this 2 day of April

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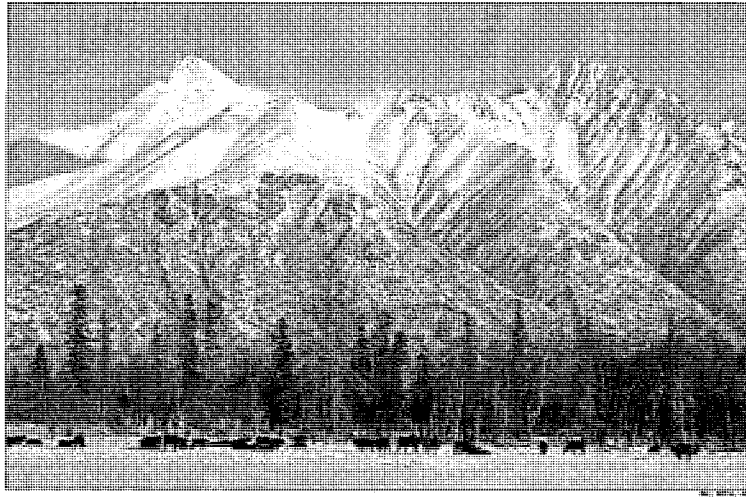


Notary Public in and for
The State of Alaska.
Third Division
Anchorage, Alaska
MY COMMISSION EXPIRES

4/14/2021

ANGELA M SIMMONS
NOTARY PUBLIC
State of Alaska
My Commission Expires Apr 14 2021

BEAUTIFUL DAY AT THE FARM



Cows leave tracks in the fresh snow at a farm near Palmer on Thursday. A snow-covered Malamuk Peak, left, and the Chugach Mountains are visible in the distance after the clouds cleared away.

Anchorage lawmaker apologizes after sexist remarks on House floor

James Brooks Anchorage Daily News
JUNEAU — A member of the Alaska House of Representatives is facing criticism and is apologizing after delivering a speech on the House floor this week that included sexist remarks about the appearance of a female colleague.

Rep. Zack Fields, an Anchorage Democrat, spoke Wednesday to wish happy birthday to Rep. Sara Rasmussen, an Anchorage Republican. Lawmakers often give speeches celebrating birthdays of their colleagues, and they frequently include jokes in their remarks.

After praising Rasmussen, Fields said he had recently become aware of a problem caused by the representative in her home district — a problem related to the risk of automobile collisions in her neighborhood.

Fields then quoted from what he later said was a Facebook post by one of Rasmussen's constituents. "Sara can wear a short skirt and stop traffic in Anchorage once the spring clothes can be worn."

To recognize the need for traffic safety, Fields said, legislators would be giving Rasmussen a pair of sweatpants for her birthday.

Residents. Happy birthday to our dear friend." As video clips of the speech spread on social media, Fields posted an apology on his legislative Facebook page, but respondents said it was inadequate.

Draft Environmental Assessment and Draft Finding of No Significant Impact for the Decommissioning and Dismantlement of the Deactivated SM-1A Nuclear Power Plant. United States Army Garrison Alaska Fort Greely, Delta Junction, Alaska. Notice of Availability. The United States Army Corps of Engineers (USACE), Baltimore District proposes to decommission and dismantle the Deactivated Stationary Medium Power Model 1A Nuclear Power Plant (SM-1A) at United States (U.S.) Army Garrison Alaska Fort Greely (Fort Greely) and release the property for unrestricted use.

AT&T FIREWORKS EXTRAVAGANZA. It's the biggest fireworks show in the state! This Rony tradition blazes into the sky to light up the night in a celebration of all things Rony! Saturday, Feb. 27th 7:30pm Ship Creek, Small Boat Harbor. Rony Re-Imagined www.furrondy.net

AFFIDAVIT OF PUBLICATION

**UNITED STATES OF AMERICA
STATE OF ALASKA
FOURTH JUDICIAL DISTRICT**

Before me, the undersigned, a notary public, this day personally appeared, Michael Paschall who, being first duly sworn according to law, says that he represents TriDelta, Incorporated, publisher of Delta Wind, a newspaper of general circulation published in Delta Junction in said Fourth Judicial District and State of Alaska, and that the advertisement of which the annexed is a true copy, was published in said newspaper on the following day(s):

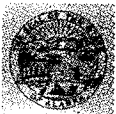
2/25/2021

and that the rate charged is not in excess of the rate charged private individuals, with the usual discounts.



Michael R. Paschall

Subscribed and sworn before me this 13TH day of April, 2021.



"Official Seal"
Notary Public
T.P. Nikolodoy
State of Alaska
Commission #200310008 Expires 3/10/2024



Notary Public in and for the
State of Alaska

My commission expires: March 10, 2024

Draft Environmental Assessment and Draft Finding of No Significant Impact for the Decommissioning and Dismantlement of the Deactivated SM-1A Nuclear Power Plant

United States Army Garrison Alaska Fort Greely, Delta Junction, Alaska

Notice of Availability

The United States Army Corps of Engineers (USACE), Baltimore District proposes to decommission and dismantle the Deactivated Stationary Medium Power Model 1A Nuclear Power Plant (SM-1A) at United States (U.S.) Army Garrison Alaska Fort Greely (Fort Greely) and release the property for unrestricted use. Under the Proposed Action, USACE would 1) complete the proposed decommissioning and dismantlement of SM-1A in accordance with a Decommissioning Plan approved by the Army Reactor Office; 2) terminate the SM-1A decommissioning permit issued by the U.S. Army Deputy Chief of Staff (DCS) G-3/5/7; and 3) release the SM-1A site for unrestricted use in accordance with U.S. Nuclear Regulatory Commission regulations established in 10 Code of Federal Regulations (CFR) 20.1402, Radiological Criteria for Unrestricted Use and adopted by the Army. Implementation of the Proposed Action would occur over approximately 6 years beginning in 2022 and ending in 2028.

Interested parties are hereby notified that USACE has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FNSI) for the Proposed Action.

This notice is being issued to all interested parties in accordance with the National Environmental Policy Act (NEPA) of 1969, Council on Environmental Quality NEPA implementing regulations (40 CFR 1500-1508) (1978, as amended in 1986 and 2005), and Army NEPA regulations (32 CFR 651). Notice is also given pursuant to Section 106 of the National Historic Preservation Act of 1966, as implemented in 36 CFR Part 800.

In accordance with 32 CFR 651.14, the Draft EA and Draft FNSI will be available for a 30-day public review and comment period beginning February 26, 2021 and ending March 28, 2021. The public may submit comments on these documents during this time.

Pending COVID-19 public health emergency restrictions, printed copies of the Draft EA and Draft FNSI will be available for review or check out at the following local libraries (with electronic copies also available for download from the Z. J. Loussac Library and the Noel Wien Public Library):

Delta Community Library
2291 Deborah Street
Delta Junction, AK 99737

Z. J. Loussac Library
3600 Denali Street
Anchorage, AK 99503

Noel Wien Public Library
1215 Cowles Street
Fairbanks, AK 99701

Fort Wainwright Library
3700 Santiago Ave
Fort Wainwright, AK 99703

The Draft EA and Draft FNSI are also available to view or download as follows:

Online <https://www.nab.usace.army.mil/SM-1A/>

Printed or Electronic Copy:

Electronic Copy Request via email: cenab-cc@usace.army.mil

Request via postal mail:
Brenda M. Barber, P.E.
USACE Program Manager
c/o AECOM
3900 C Street, Suite 403
Anchorage, AK 99503

Written comments on the Draft EA and Draft FNSI (including requests for additional information about the Proposed Action and NEPA process) should be sent to USACE using the contact information provided above. Comments should be submitted or postmarked by March 28, 2021.

USACE will hold in-person public meetings at the following locations to provide interested parties and local communities an opportunity to learn about and comment on the Proposed Action, Draft EA, and Draft FNSI:

- Westmark Fairbanks Hotel and Conference Center—813 Noble Street, Fairbanks, Alaska 99701 on March 9 from 5:00 p.m. to 9:00 p.m. Youtube Livestream: <https://youtu.be/BRQPuLfonPM>
- Delta Junction Community Center—2287 Deborah Street, Delta Junction, Alaska 99731 on March 11 from 5:00 p.m. to 9:00 p.m. Youtube Livestream: <https://youtu.be/tX3PJLLzDo4>

Both meetings will have the same schedule and format consisting of a poster session from 5:00 p.m. to 6:30 p.m., a formal presentation from 6:30 p.m. to 8:00 p.m., and a second poster session from 8:00 p.m. to 9:00 p.m.

In consideration of the COVID-19 public health emergency, the in-person public meetings will be conducted in a manner consistent with applicable Centers for Disease Control and Prevention (CDC) guidelines, health protection measures, and restrictions in effect at the time of the meetings. For individuals who do not wish to attend the in-person meetings, public meetings will also be conducted in a virtual/online format in accordance with the Interim Army Procedures for NEPA dated June 15, 2020. To join the virtual public meeting, navigate a web browser to sm1a.consultation.ai and follow instructions. The virtual meeting will be open the same dates as the comment period.

Electronic copies of meeting materials will be available for viewing or download on the USACE project website and social media platforms throughout the 30-day public review period, regardless of the public meeting format. Additional information on the Proposed Action, public meetings, and how to join the stakeholder list is also available on the project website.

In accordance with NEPA, members of the general public; military personnel; federal, state, and local agencies; Alaska Natives; and non-governmental organizations with an interest in the Proposed Action are strongly encouraged to participate and submit comments during the 30-day public review period. If you need additional assistance with the review of the Draft EA, please contact the project team by calling 410-362-2809 or email us at CENAB-SMIA@usace.army.mil.

Affidavit of Publication

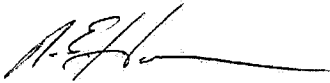
UNITED STATES OF AMERICA
STATE OF ALASKA
FOURTH DISTRICT

} SS.

Before me, the undersigned, a notary public, this day personally appeared, Richard Harris who, being first duly sworn, according to law, says that he is the Publisher of the Fairbanks Daily News-Miner, a newspaper (i) published in newspaper format, (ii) distributed daily more than 50 weeks per year, (iii) with a total circulation of more than 500, (iv) holding, a second class mailing permit from the United States Postal Service, (v) not published primarily to distribute advertising, (vi) not intended for a particular professional or occupational group. The advertisement which is attached is a true copy of the advertisement published in said paper on the following day(s):

02/26/2021

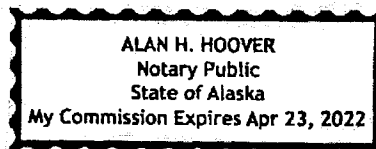
and that the rate charged thereon is not excess of the rate charged private individuals, with the usual discounts.



Publisher
Subscribed to and sworn to me this 26th day of February, 2021



Alan Hoover, Notary Public in and for the State Alaska.
My commission expires: April 23, 2022
AP240776-610942-9072616764
AECOM
3900 C ST, STE 403
ANCHORAGE, AK 99503



Draft Environmental Assessment and Draft Finding of No Significant Impact for the Decommissioning and Dismantlement of the Deactivated SM-1A Nuclear Power Plant

United States Army Garrison Alaska Fort Greely, Delta Junction, Alaska

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The United States Army Corps of Engineers (USACE), Baltimore District proposes to decommission and dismantle the Deactivated Stationary Medium Power Model 1A Nuclear Power Plant (SM-1A) at United States (U.S.) Army Garrison Alaska Fort Greely (Fort Greely) and release the property for unrestricted use. Under the Proposed Action, USACE would 1) complete the proposed decommissioning and dismantlement of SM-1A in accordance with a Decommissioning Plan approved by the Army Reactor Office; 2) terminate the SM-1A decommissioning permit issued by the U.S. Army Deputy Chief of Staff (DCS) G-3/5/7; and 3) release the SM-1A site for unrestricted use in accordance with U.S. Nuclear Regulatory Commission regulations established in 10 Code of Federal Regulations (CFR) 20.1402, Radiological Criteria for Unrestricted Use and adopted by the Army. Implementation of the Proposed Action would occur over approximately 6 years beginning in 2022 and ending in 2028.

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Online: <https://www.nab.usace.army.mil/SM-1A/>

Printed or Electronic Copy:

Request via email: CENAB-SM1A@usace.army.mil

Request via postal mail: Brenda M. Barber, P.E.
USACE Program Manager
c/o AECOM 3900 C Street, Suite 403
Anchorage, AK 99503

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Draft EA Public Comments Received

1. Audrey Murphy
2. State of Alaska (includes Lead-Based Paint Fact Sheet)
3. USEPA



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From: [Barber, Brenda M CIV USARMY CENAB \(USA\)](#)
To: [Hillebrand, Jeffrey T CIV USARMY CENAB \(USA\)](#); [Bella, Elizabeth](#)
Cc: [Kiesling, Russell](#); [Taylor, Kevin \(Greenville\)](#); [Watters, David J CIV USARMY CENAB \(USA\)](#)
Subject: [EXTERNAL] FW: [Non-DoD Source] Re: SM-1A Stakeholder Update - 16 March 2021
Date: Monday, March 29, 2021 4:17:58 AM

Hi All

I received the below comments on the Draft EA for SM-1A.

Very Respectfully,

Brenda M. Barber, P.E.
U.S. Army Corps of Engineers - Baltimore District
Program Manager - Environmental and Munitions Design Center
ATTN: CENAB-ENE-C
2 Hopkins Plaza
09-A-10 (Cube)
Baltimore, MD 21201
 410-962-0030 (desk)
 443-253-3048 (cell)

From: Audrey Murphy <mamurphy8@gmail.com>
Sent: Saturday, March 27, 2021 8:57 PM
To: Barber, Brenda M CIV USARMY CENAB (USA) <Brenda.M.Barber@usace.army.mil>
Subject: [Non-DoD Source] Re: SM-1A Stakeholder Update - 16 March 2021

Date: March 27, 2021

Subject: Comments on the February 2021 Draft Environmental Assessment of disappearing SM-1A

What benefit to mankind results from taking any radioactive material from safe and secure storage in Alaska to safe and secure storage in Texas?

The purported NEED for the chosen Proposed Action to be completed within 60 years is a general timeline that was adopted a lifetime ago and should be evaluated for specific situations, given the anticipated expenses involved.

The deactivation of the SM-1A Power Plant, after it ceased operation in 1972 and the subsequent passage of time since then, has effectively made the physical remains safe, if not disturbed. This is evidenced by the Army transferring ownership of Bldg. 606 to Doyon, Ft. Greely's Utility Contractor.

A Cost/Benefit analysis of the proposed action as opposed to the No-Action alternative should be useful to the decision-makers.

Be prepared to handle an accidental release of rad waste. Expect surprises, like finding "gel" that

didn't consolidate into a gel, or finding radioactive liquid. Also, bring your own calibrated rad. detectors as Fort Greely may not be prepared to furnish any.

The emergency response team at Fort Greely (the Fire Department) is subject to constant personnel rotation. Training for the Fire Department may not extend to handling radioactive materials. Consider having someone proficient in rad. waste handling to liaison with the Fire Department during demo and transfer of rad. waste. Finally, the standing Vapor Container with its ancillary structures could serve as a good example of how to safely handle a nuclear plant once deactivated.

On Tue, Mar 16, 2021 at 1:14 PM Barber, Brenda M CIV USARMY CENAB (USA)
<Brenda.M.Barber@usace.army.mil> wrote:

Dear SM-1A Stakeholders,

The U.S. Army Corps of Engineers (USACE) would like to thank those of you who attended the in person and virtual Draft Environmental Assessment (EA) public meetings held last week in Fairbanks and Delta Junction, AK. We greatly appreciate your continued interest in the SM-1A Decommissioning and Dismantlement project. If you were unable to attend the meetings, don't worry! The meetings were live streamed on YouTube and are available for viewing at: <https://www.youtube.com/watch?v=BRQPuLfonPM> and <https://www.youtube.com/watch?v=tX3PJLLzDo4>.

The poster presentation, draft Environmental Assessment, and Draft Finding of No Significant Impact are also available for review in our [Virtual Public Meeting Room](#). You can access the room by visiting <http://sm1a.consultation.ai>. The Virtual Public Meeting room allows you to review and download documents, learn about the proposed action, and submit your comments. Downloadable versions of the documents and additional information are also available on the [SM-1A website](#).

As a reminder, we are in the final two weeks of the public comment period, which ends March 28, 2021. Please submit your comments within the Virtual Public Meeting room, via email at CENAB-SM1A@usace.army.mil, or by written comment, postmarked by March 28, 2021 and mailed, to the address below:

Brenda M. Barber, P.E.
USACE Program Manager
c/o AECOM
3900 C Street, Suite 403
Anchorage, AK 99503

This public comment period allows you to have a continued voice in the process.

Your continued support and feedback are strongly encouraged.

If you have any questions or concerns, please let me know.

Very Respectfully,

Brenda M. Barber, P.E.

U.S. Army Corps of Engineers - Baltimore District


Program Manager - Environmental and Munitions Design Center


ATTN: CENAB-ENE-C

2 Hopkins Plaza

09-A-10 (Cube)

Baltimore, MD 21201

 410-962-0030 (desk)

 443-253-3048 (cell)



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

Department of Natural Resources

OFFICE OF PROJECT MANAGEMENT AND PERMITTING

550 West 7th Avenue, Suite 1430
Anchorage, AK 99501-3561
Phone: 907-269-0880
Email: catherine.heroy@alaska.gov

March 26, 2021

Brenda M. Barber, P.E.
USACE Program Manager
c/o AECOM
3900 C Street, Suite 403
Anchorage, AK 99503

Re: Draft Environmental Assessment for Decommissioning and Dismantlement of the Deactivated SM-1A Nuclear Power Plant and draft Finding of No Significant Impact

Dear Ms. Barber,

Thank you for the opportunity to review the U.S. Army Corps of Engineers (USACE) Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the decommissioning and dismantlement of Fort Greely's deactivated Stationary Medium Power Model 1A (SM-1A) Nuclear Power Plant. The State understands the need to decommission and dismantle the deactivated SM-1A power plant within 60 years of permanent cessation of operations, in accordance with 10 Code of Federal Regulations (C.F.R.) 50.82(a)(3) and Army Regulation 50-7. Since the reactor was deactivated in 1972, decommissioning should be completed by 2032.

The Office of Project Management and Permitting (OPMP) has coordinated with the following state agencies to review the Draft EA in relation to State of Alaska authorities: Alaska Departments of Environmental Conservation (ADEC), Health and Social Services (HSS), Natural Resources (DNR), Fish and Game (ADF&G), and Transportation and Public Facilities (DOTPF). The State Historic Preservation Office is in direct consultation with USACE regarding the National Historic Preservation Act Section 106 review of cultural and historic properties, as noted in the EA. The enclosed comments constitute the State of Alaska's (State) consolidated comments for your consideration.

Thank you for the opportunity to review the EA and submit State comments for the SM-1A decommissioning project. Please contact me if you have any questions regarding the enclosed comments.

Sincerely,

A handwritten signature in blue ink that reads "Catherine Heroy".

Catherine Heroy
Large Project Coordinator

Enclosures:

Ft Greely SM-1A Project- Consolidated Comments (PDF)
Lead-Based Paint Disposal: Guidance Document (PDF)

Cc: State Review Team
Kyle Moselle, Executive Director, DNR Office of Project Management and Permitting

**Fort Greely SM-1A Project
OPMP Consolidated Comments Table**

Draft Environmental Assessment, Deactivated SM-1A Nuclear Reactor Facility Decommissioning and Dismantlement

Department/Division/Section	Section/Fig./Table	Page #	Comment/Issue	Recommendation/Action
Alaska Department of Environmental Conservation, SPAR Division, Contaminated Sites Program	General Comment		There are three active contaminated sites within the SM1A project footprint, as documented in the DEC Contaminated Sites Program Database. These sites are: (1) Fort Greely SMDC Nuclear Reactor SM1A (ADEC File Number: 141.38.035, Hazard ID: 1706), (2) Fort Greely SMDC Building 606 PP (ADEC File Number: 141.38.012, Hazard ID: 1711), Doyon Utilities at Fort Greely Building 606 USTs 1 and 2 (ADEC File Number: 141.26.020, Hazard ID: 27219).	With the SM1A project area being within the boundaries of contaminated sites, work plans must be provided to the Contaminated Sites project manager for review and approval under 18 AAC 75.360 prior to work starting. Please also ensure that this environmental work is completed by a Qualified Environmental Professional (QEP) and Qualified Sampler in accordance with 18 AAC 75.333. At the completion of the environmental work, please provide the Contaminated Sites project manager with a report for review and approval per 18 AAC 75.380.
Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	ES-1 Table ES-1	ES.8	This table notes that the project will " <i>Prepare and adhere to a Hazardous Material Abatement Plan in accordance with EM 385-1-1, Safety and Health Requirements to establish procedures for the management and disposition of non-radioactive regulated solid waste.</i> "	Since both hazardous and non-hazardous solid wastes are regulated materials, here and throughout this document, references to regulated solid waste should be modified as appropriate, to specify "regulated hazardous solid waste" or "regulated non-hazardous solid waste." Thus, descriptions of the Hazardous Material Abatement Plan should specify that the plan is specific to "the management and disposition of non-radioactive regulated hazardous solid waste."
Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	ES-1 Table ES-1	ES.8	This table notes that the project will " <i>Implement a Waste Management and Disposal Plan that would establish procedures and requirements for the safe management, handling, storage, and transportation of waste to optimize safety and prevent or minimize risks to the extent possible.</i> "	In order to evaluate options for handling and disposal, the Waste Management and Disposal Plan must be provided to the ADEC Solid Waste Program for review and approval. The Plan needs to include specific details on proposed characterization efforts for all waste materials to ensure characterization will meet Solid Waste Program requirements for handling and disposal of any waste destined for disposal in Alaska. The ADEC Solid Waste Program previously provided comments pertaining to specific wastes and is including those comments (see general comments below regarding PCB, paint and LBP wastes). Also, please ensure that descriptions of the Waste Management and Disposal Plan, both here and elsewhere in this document, specify that the plan applies to "safe management, handling, storage, transportation, and disposal" of solid wastes. Please clarify as well whether this plan applies to all regulated solid wastes (radioactive and non-radioactive, hazardous and non-hazardous) or just to regulated non-hazardous solid wastes.

Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	General comments on PCB and paint wastes		<i>In-state disposal limits for PCB wastes (painted construction debris) with or without paint removal.</i>	<p>Please note the following requirements regarding PCB wastes:</p> <p>With paint removal. No landfills in Alaska that will accept PCBs at or above a concentration of 1.0 mg/kg. If paint is removed from a non-porous material (metal), it must be demonstrated that the material has been decontaminated in accordance with the applicable decontamination standard under 40 C.F.R. § 761.79. If documentation that this standard has been met is provided to ADEC, material would be acceptable for disposal in Alaska. Porous surfaces from which paint has been removed are subject to sampling and analysis to demonstrate that residual PCBs are below 1.0 mg/kg. ADEC recommends following the guidance: https://www.epa.gov/pcbs/standard-operating-procedure-sampling-porous-surfaces-polychlorinated-biphenyls-pcbs1. ADEC will require that any sampling and analysis be conducted according to written plans approved by ADEC. This plan approval expectation applies to all subsequent references to sampling and analysis. Concrete, even if unpainted, should not be assumed to be PCB-free.</p> <p>Without paint removal. Paint or other coatings must be directly sampled via chip or scrape samples (not wipe samples) to demonstrate that the paint contains less than 1.0 mg/kg PCBs. As noted above, the particulars of such sampling must be documented in a written sampling and analysis plan for review and approval by ADEC.</p>
Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	General comments on PCB wastes		<i>In-state disposal limits for PCB wastes (concrete impacted by PCB oil leaks).</i>	No PCB liquids may be disposed in Alaska. Concrete impacted by PCB oil must be sampled to demonstrate that residual concentrations are less than 1.0 mg/kg. ADEC recommends conducting sampling and analysis following the guidance cited above.
Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	General Comment Lead-based paint		<i>In-state disposal limits for Lead-based Paint (LBP) wastes (painted construction debris) with or without paint removal.</i>	See attachment "lead-based-paint-disposal.pdf"
Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	General Comment Demolition Debris with PCBs		<i>In-state disposal and recycle of non-hazardous and non-radioactive demolition debris (steel, concrete, siding, roofing materials, etc.)</i>	Materials with PCB concentrations at or above 1.0 mg/kg are currently not accepted for disposal in Alaska. The Corps should ensure that an appropriate plan is in place to screen recyclable materials for the presence of PCBs. For example, flaking paint containing PCBs at or above 1 mg/kg could present challenges for recycling of such materials. ADEC recommends that a written disposal/recycling plan be developed to ensure that these concerns are appropriately addressed, and that the ADEC in-state solid waste disposal limit of 1.0 mg/kg is satisfied. For example, such a plan might include provisions that would allow only well-adhered paint to be recycled to minimize the possibility of flaking during transport. This plan should also ensure that appropriate procedures are in place to ensure that such materials are appropriately managed when recycled.

Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	1.9	1-15	<i>1.9 Regulatory Framework</i>	Please include State of Alaska Solid Waste Regulations (18 AAC 60) in this listing.
Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	2.2	2-5	This page notes that "As shown in Table 2.2-2, it is anticipated that approximately half of the waste generated during the Proposed Action would be characterized as construction and demolition (C&D) waste. C&D waste is not radiologically contaminated and does not contain nonradioactive regulated solid waste such as lead or polychlorinated biphenyls (PCBs). Therefore, this waste can be recycled or disposed of in typical municipal solid waste (MSW) or C&D waste landfills."	ADEC will require all characterization information be provided to document classification of this waste as C&D. Any plan for characterizing material needs to be submitted for review and approval prior to sampling. This ensures that data will be adequate for purposes of any in state disposal. Any free release criteria being set to determine if C&D must be managed as radioactive or nonradioactive needs to be submitted to ADEC for review and approval.
Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	2.2	2-8	This page notes that "A Material Categorization, Survey, and Release Plan would be developed to establish the framework for releasing structures and M&E as non-radiologically impacted waste."	The Material Categorization, Survey, and Release Plan needs to be provided to the ADEC Solid Waste Program for review and approval. This needs to include specific details on proposed characterization efforts and criteria for free release for all waste materials to ensure characterization will meet Solid Waste Program Requirements for disposal of any waste in the State of Alaska.
Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	ES.8 Table ES-1	ES-1	This table note that the project would "Implement a Waste Management and Disposal Plan that would establish procedures and requirements for the safe management, handling, storage, and transportation of waste to optimize safety and prevent or minimize risks to the extent possible."	In order to evaluate options for handling and disposal, the Waste Management and Disposal Plan must be provided to the ADEC Solid Waste Program for review and approval. The Plan needs to include specific details on proposed characterization efforts for all waste materials to ensure characterization will meet Solid Waste Program requirements for handling and disposal of any waste destined for disposal in Alaska. The ADEC Solid Waste Program previously provided comments pertaining to specific wastes and is including those comments (see attachment "lead-based-paint-disposal.pdf"). Also, please ensure that descriptions of the Waste Management and Disposal Plan, both here and elsewhere in this document, specify that the plan applies to "safe management, handling, storage, transportation, and disposal" of solid wastes. Please clarify as well whether this plan applies to all regulated solid wastes (radioactive and non-radioactive, hazardous and non-hazardous) or just to regulated non-hazardous solid wastes.
Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	3.10.1 Table 3.10-1	3-46	This table discusses "Regulations and Guidance Applicable to Waste"	Please add the State of Alaska Radiation Protection (18 AAC 85) regulations to this listing.
Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	3.10.1 Table 3.10-1	3-47	This table notes that under "Procedures to exclude receipt of hazardous waste" that 18 AAC 60.240 prohibits landfills from accepting PCB waste as defined in 40 C.F.R. 761.3	For characterization purposes associated with in-state disposal, a limit of 1 ppm PCBs applies. This is because wastes with PCB concentrations >1 ppm are currently not accepted at any landfill in Alaska.

Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	3.10.2.1	3-49	<p>This page notes that "<i>The disposal of ACM in Alaska is regulated by ADEC. Facilities being considered by USACE for the disposal of non-radioactive ACM generated by the Proposed Action include:</i></p> <ul style="list-style-type: none"> •Fort Greely Landfill No. 8 •Delta Junction Landfill, approximately 9.4 miles north of Fort Greely" 	<p>ADEC is unaware of a permitted landfill named "No. 8" at Fort Greely. Please confirm that this landfill is a permitted landfill under ADEC. Additionally, the Delta Junction Landfill is only permitted to accept limited amounts of non-Regulated Asbestos Containing Material. As such, waste material classified as Regulated Asbestos Containing Material is not permitted for disposal at this facility. Please revise to specify the type of Asbestos Containing Material that may be considered for disposal at the Delta Junction Landfill. Also, please confirm and correct the location of the Delta Junction Landfill as this landfill is located south of the main entrance to Fort Greely.</p>
Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	3.10.2.1	3-49	<p>This page notes that "<i>Treatment and/or disposal of petroleum-contaminated soils is regulated by the ADEC Solid Waste Program. The remediation of petroleum-contaminated sites is managed by the ADEC Contaminated Sites Program.</i>"</p>	<p>The ADEC Solid Waste Program regulates disposal of polluted soil only when it is considered for acceptance at a landfill. The ADEC Contaminated Sites Program regulates all other treatment and management of contaminated soil as well as any work that occurs in a known contaminated site. As such, additional clarification is needed in this section.</p>
Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	3.10.2.2	3-49	<p><i>Non-Hazardous Solid Waste Non-hazardous solid wastes include (USEPA 2014):</i></p> <ul style="list-style-type: none"> • Garbage (e.g., milk cartons and coffee grounds) • Refuse (e.g., metal scrap, wall board, and empty containers) • Other discarded materials, including solid, semisolid, liquid, or contained gaseous materials resulting from industrial, commercial, and similar activities. 	<p>Please note that State of Alaska regulations do not include liquids as solid waste.</p>
Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	3.10.2.2	3-50	<p>This page notes that "<i>MSW and C&D waste generated on Fort Greely can be disposed of at the following on-and off-post facilities:</i></p> <ul style="list-style-type: none"> • <i>Fort Greely Inert Waste Landfill: This 4.5-acre landfill is on Fort Greely (Landfill Road) and is permitted for the disposal of most C&D, inert materials, and non-regulated ACM (ADEC 2020a)</i> • <i>City of Delta Junction Landfill: This landfill is in the City of Delta Junction and accepts C&D waste, such as wood, sheet rock, metal, and glass materials, and requires an application process. The 93-acre landfill is authorized to dispose of an annual average of less than 20 tons per day of domestic and commercial refuse, and also allows disposal of non-hazardous sewage sludge (State of Alaska Department of Environmental Conservation 2019).</i> • <i>Fairbanks North Star Borough Solid Waste Facility: This landfill is on the south side of Fairbanks and accepts C&D wastes and MSW, as well as recycling. Full capacity of the MSW disposal area and the C&D disposal area is anticipated to be met in 2054 and 2023, respectively (Fairbanks North Star Borough DPW 2020).</i> <p><i>Other permitted off-post disposal facilities in areas near Fort Greely may also be considered for disposal or recycling of MSW and C&D waste generated during the Proposed Action.</i></p>	<p>Although likely, disposal or recycling of C&D waste at these facilities, or other permitted facilities near Fort Greely, will require coordination with the ADEC Solid Waste Program for waste characterization efforts. Please refer to comment #3. Also, since the Fort Greely Inert Waste Landfill cannot accept MSW, the first part of this statement needs to be revised. Additionally, given that the City of Delta Junction Landfill accepts both MSW and C&D wastes, MSW should also be listed as an acceptable waste for this facility.</p>

Alaska Department of Environmental Conservation, SPAR Division, Contaminated Sites Program	3.10.2.2		The last paragraph in this section notes that <i>"Treatment and/or disposal of petroleum-contaminated soils is regulated by the ADEC Solid Waste Program."</i> This statement is partly correct and needs to be revised. Under the department regulations 18 AAC 75.325(i)(1), <i>"A responsible person shall obtain approval before disposing of soil or groundwater from a site that is subject to the site cleanup rules."</i> This means that there is a two step process involving to two programs within ADEC.	This sentence should be revised to read <i>"Treatment and/or disposal of petroleum-contaminated soils is regulated by ADEC Contaminated Sites Program and Solid Waste Program ."</i> There are three known contaminated sites present at the SM-1A Nuclear Reactor project location, and any contaminated media excavated for transport and disposal will require completion of ADEC's "Contaminated Media Transport and Treatment or Disposal Authorization Form" (January 2020). The Contaminated Sites Program project manager will review and approve of the transport, treatment and/or disposal of the media. Any media going to a landfill within Alaska will require additional approval by the destination landfill and the ADEC Solid Waste Program.
Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	3.10.3.2	3-52	All waste would be segregated and characterized at the point of removal or excavation. Following characterization, radioactive waste and non-radioactive regulated solid waste would be immediately packaged on the SM-1A site (i.e., would not be stockpiled) and temporarily staged in accordance with applicable regulations at one or more areas on Fort Greely until ready for transport to the contiguous 48 states for disposal. Nonradioactive solid waste would be loaded into typical dump trucks or in end-dump roll-off containers, covered, and transported directly to on-post or off-post landfills or recycling facilities.	Characterization should be completed prior to removal or excavation to allow for proper segregation. This is also crucial for proper demolition, handling, and storage of wastes that contain any sources of contamination. As worded, it is unclear if all wastes will be properly characterized prior to demolition. Please provide additional clarification. Please also refer to comment #3.
Alaska Department of Environmental Conservation, Environmental Health Division, Solid Waste Program	3.10.3.2	3-52	This page notes that <i>"Excavated soils determined to be contaminated with petroleum residues only (i.e., not radiologically contaminated) would be segregated, and USACE would coordinate with Fort Greely regarding their treatment and/or disposal."</i>	The ADEC Solid Waste Program regulates disposal of polluted soil only when it is considered for acceptance at a landfill. The ADEC Contaminated Sites Program regulates all other treatment and management of contaminated soil as well as any work that occurs in a known contaminated site. As such, additional clarification is needed in this section.
Department of Natural Resources, Division of Mining, Land and Water, Statewide Abatement of Impaired Land	3.10.2.1	3-49	Paragraph describing: "Some soils on the SM-1A site are contaminated with petroleum residues from accidental spills that have previously occurred on the site (not connected to SM-1A's operation). These spills were unrelated to the reactor's operation"	Although these soils are not connected to the operation, a plan for unanticipated contamination/contaminants should be developed listing the appropriate DEC contacts. In order for the site to be unrestricted use, these possible petroleum residues will need to be addressed either within this project or a different clean-up project. See DEC memo here for more information: https://dec.alaska.gov/media/10799/utility-right-of-way-tech-memo-sept-2018.pdf
DMLW SAIL	Table 8-1	8--5	Patty Burns' title needs to be updated	Statewide Abatement of Impaired Land (SAIL) Section Chief, Division of Mining, Land, and Water

Lead-Based Paint Disposal

Guidance Document

December 2019

Alaska Department of Environmental Conservation
Division of Environmental Health
Solid Waste Program



Lead-based paint (LBP) was commonly used in residential, commercial, and institutional buildings until 1978, when the federal government banned its use in residences and public buildings where children are regularly present. This is a concern because lead presents a health risk, particularly in young children.

In 2003, the Environmental Protection Agency (EPA) changed the federal regulations to increase disposal options for residential LBP waste. The goal was to promote the removal of LBP from residential structures to minimize exposure, especially of children, to lead. The result is LBP waste from residential abatement, rehabilitation, renovation, and remodeling projects is regulated differently than residential demolition projects and non-residential sources.

Residential LBP

Residential LBP waste is generated as a result of abatement, rehabilitation, renovation, and remodeling in homes and other residences. The term LBP waste includes paint debris, chips, dust, and sludges. While the management of LBP during a residential project must follow strict federal requirements, residential LBP waste is considered household hazardous waste and may be disposed at any permitted Class I or Class II Municipal Solid Waste Landfill (MSWLF) without testing. Residential demolition activities in which the entire structure is removed does not meet the definition of residential LBP waste and must be disposed as non-residential LBP waste.

Non-Residential LBP

Sources of non-residential LBP are: renovation or demolition of non-residential structures OR demolition of a residence. LBP debris, dust, chips, or sludge wastes are subject to the toxicity criteria in 40 CFR 261.24, which is demonstrated using the Toxicity Characteristic Leaching Procedure (TCLP) test. The waste generator or responsible party should coordinate with EPA Region 10 with questions related to hazardous waste characterization, as EPA is the regulatory program for hazardous waste in Alaska.

- Wastes with a TCLP concentration for lead of less than 5 mg/L may be disposed at a permitted Class I or II MSWLF or Inert Waste Landfill.
- Wastes with a TCLP concentration for lead of greater than 5 mg/L must be managed as a hazardous waste under the Resource Conservation and Recovery Act (RCRA).

LBP Polluted Soil

Soils or other materials may become contaminated from sandblasting or natural weathering of surfaces painted with LBP and may be subject to environmental cleanup and special disposal requirements.

Please contact ADEC if your project includes or will generate any of these types of wastes.



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10**

1200 Sixth Avenue, Suite 155
Seattle, WA 98101-3188

REGIONAL
ADMINISTRATOR'S
DIVISION

March 26, 2021

Brenda M. Barber, P.E.
USACE Program Manager
c/o AECOM
3900 C Street, Suite 403
Anchorage, Alaska 99503

Dear Ms. Barber:

The U.S. EPA has reviewed the United States Army Corp of Engineer's Draft Environmental Assessment (DEA) and Finding of No Significant Impact for the Decommissioning and Dismantlement of the Deactivated Stationary Medium Power Model 1A Nuclear Power Plant (SM-1A) located at Fort Greeley, Alaska (EPA Region 10 Project Number 20-0040).

The DEA analyzes the potential environmental impacts associated with the proposal to decommission and dismantle the deactivated SM-1A power plant located on an approximately 1.5-acre fenced site in the central portion of Fort Greely. Fort Greely covers approximately 6,840 acres near Delta Junction, Alaska, approximately 100 miles southeast of Fairbanks. SM-1A was previously deactivated in 1972 and has been maintained in a safe storage (SAFSTOR) condition since that time.

According to the DEA, the purposes of the Proposed Action is to: 1) safely remove, transport, and dispose of all materials and equipment, structures, and residual contamination associated with SM-1A; 2) release the SM-1A site for unrestricted use in accordance with U.S. Nuclear Regulatory Commission (NRC) radiological dose criteria established in 10 Code of Federal Regulations 20.1402, *Radiological criteria for unrestricted use* and adopted by the Army; and 3) terminate the U.S. Army-issued SM-1A decommissioning permit.

The DEA discloses that radioactive materials and residual radioactive contamination remaining at SM-1A are present in the: Vapor Container (VC; e.g., reactor equipment such as the Reactor Pressure Vessel (RPV), steam generator, pumps), the spent fuel pit, waste tanks pit, Demineralizer Room, concrete foundation slabs of Buildings 606 North and J-5, and soils underlying and adjacent to those buildings.

EPA comments and recommendations on the proposed action at the deactivated SM-1A plant are included in the enclosure. EPA appreciates the opportunity to provide recommendations to improve the NEPA environmental document and looks forward to continued involvement during the NEPA process. If you have any questions about our comments, please contact Betsy McCracken at (907) 271-1206 or mccracken.betsy@epa.gov.

Sincerely,

Rebecca Chu, Chief
Policy and Environmental Review Branch

**U.S. Environmental Protection Agency Detailed Comments on the DEA for the Decommissioning
and Dismantlement of the Deactivated SM-1A Nuclear Power Plant
U.S. Army Garrison at Fort Greely, Alaska**

Unrestricted Use

The DEA notes that part of the project purpose is to release the SM-1A site for unrestricted use in accordance with U.S. Nuclear Regulatory Commission (NRC) radiological dose criteria established in 10 Code of Federal Regulations (CFR) 20.1402, *Radiological criteria for unrestricted use* and adopted by the Army.¹ The SM-1A was decommissioned in 1972 and has been maintained in SAFSTOR condition since that time. EPA recommends that the EA include analysis of the referenced 1970's radioactivity dose rate criteria required for unrestricted use, and if these criteria are still current.

Radioactive Waste

The DEA discloses that based on the low levels of residual radioactivity at SM-1A, it is anticipated that radioactive waste to be generated during the Proposed Action would be classified as either Class A, Class B, or Class C low-level radioactive waste, in accordance with 10 CFR 61.55.² EPA recommends the EA explain the difference between the radioactive waste classes to better inform the reader of associated radioactivity risks.

The DEA states that radioactive materials and residual radioactive contamination remaining at SM-1A are present in the Vapor Container (e.g., reactor equipment such as the Reactor Pressure Vessel (RVP), steam generator, pumps), the spent fuel pit, waste tanks pit, Demineralizer Room, concrete foundation slabs of Buildings 606 North and J-5, and soils underlying and adjacent to those buildings. The DEA discloses that the RVP is the most radioactive item remaining at SM-1A.³ The DEA also indicates that the RPV would require shipment in a custom-fabricated container in accordance with 10 CFR 71 to provide the necessary radiation shielding and meet applicable external dose rate requirements.⁴ EPA recommends the EA describe radiation shielding, what is necessary to provide radiation shielding and explain the dose rate requirements. The description and explanation should include the potential consequences should the custom-fabricated container fail.

Groundwater

The DEA states that three deactivated wells at Fort Greely are associated with the former operation of SM-1A.⁵ Supply Wells No. 11 and No. 12 provided cooling water for the reactor when it was operational. The DEA discloses that treated primary coolant water from SM-1A that met radiological release criteria was discharged to Recharge Well No. 13. (also referred to as the "dry well"). EPA recommends the EA disclose groundwater radioactivity level if that occurred. EPA further recommends that the EA:

¹ DEA, p. AB-1

² DEA, p. 2-5

³ DEA, p. 1-4

⁴ DEA, p. 95

⁵ DEA, p. 3-12 and 3-13

- Disclose and explain any data on waters discharged into the wells, including measurements such as daily flow rates and acceptance criteria.
- Summarize and explain data on how much groundwater was pumped during operations and what the radioactivity was when it was pumped.
- Analyze and discuss whether groundwater radioactivity is a problem now and any potential consequences. Explain any changes in radioactivity levels may be different now, than during operations.
- Disclose any uncontrolled releases and potential for a radioactive plume to be moving through the river.

The DEA states that the Proposed Action Alternative would not involve installing new groundwater withdrawal wells or the injection of wastewater to groundwater wells.⁶ Inactive wells associated with the former operation of SM-1A (Supply Wells No. 11 and 12, and Recharge Well No. 13) would be decommissioned in accordance with applicable Alaska Department of Environmental Conservation regulations and requirements set forth in 18 Alaska Administrative Code ((AAC) 80.015(e) after associated pumps, pipes, and concrete structures are removed, characterized, and disposed of according to state and federal regulations). The DEA concludes that, “there would be no adverse short-term impacts on groundwater.” Therefore, EPA recommends including the analysis of potential short-term, long-term and cumulative impacts to groundwater from the project to support statements made in the EA or disclose why the analysis is not included.

Air Quality

The DEA states, “Through the National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61), the CAA dictates specific regulatory limits for source categories that emit radionuclides.⁷ It is anticipated that potential emissions of radionuclides during the Proposed Action would remain well below applicable National Emission Standards for Hazardous Air Pollutant thresholds specified in the CAA.” If this project is not licensed by the Nuclear Regulatory Commission, regulated under 40 CFR 191, subpart B (disposal of spent nuclear fuel, high-level and transuranic radioactive wastes) then the National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61, subpart I should apply. It is noted in the DEA section 3.11 that the levels of radioactive contamination are low. However, as part of the EA “Proposed Action,” the removal activities (demolishing nuclear facilities) will potentially create radioactive airborne contamination. As noted in 40 CFR Part 61, subpart I, Paragraph 103 (a), compliance is determined with the use of EPA computer code COMPLY or alternative requirements of appendix E. EPA recommends that this information be added in the EA or explanation of why it is omitted.

The DEA discusses why lead and ammonia are not considered and does not address why the rest of the NAAQS/AAAQS are not quantified as part of this assessment. EPA recommends:

- Including a brief description of the sources of emissions of each pollutant be included in the EA to support the basis for only assessing particulate matter (PM). For example, the DEA indicates

⁶ DEA, p. 3-5

⁷ DEA, p. 3-25

that there are no nearby airfields where lead is emitted, therefore no lead emissions are calculated.

- Use of our EJSCREEN tool to learn more about lead and other environmental hazards in the project area.⁸
- Discussing asbestos control measures that will be implemented during the Project implementation. This information is absent in the DEA.
- Including in the EA the following additional information to improve the environmental analysis of this section:
 - A map depicting the nearest nonattainment area (Fairbanks, AK) and the distance from Fort Greeley to Fairbanks.
 - Potential impacts the Project may have on the Fairbanks nonattainment area EPA appreciates the discussion within the DEA of how Fairbanks emissions impact air quality at Fort Greeley.
 - Data on current ambient air quality levels for the NAAQS/AAAQS to support the basis for only analyzing PM. The DEA states that only PM was analyzed.

Section 3.6.3.2 of the DEA reiterates the Emissions Inventory for fugitive dust emission results included in Appendix B.⁹ EPA recommends the following related to fugitive dust to improve the EA:

- An explanation of why calculations are limited too: fugitive dust emissions area and combustion emissions from the additional equipment that will be used.
- Include a list of anticipated hours of operation of equipment. EPA recommends the list indicate the type of equipment, model year of equipment/engine tier, hours of use and other relevant information to calculate expected emissions generated by the Project. Providing the list of equipment may help support the basis for the position provided in the DEA that the largest source of emissions is fugitive dust. The information will also provide context around the 100 tons per year emissions threshold cited in the DEA.

Additional EPA recommended Best Management Practices for inclusion in the EA:

- Develop a fugitive dust control plan for this site. This plan will indicate under what conditions to spray water, how often to spray, and roles and responsibilities.
- Implement anti-idling requirements for diesel vehicles.
- Regarding diesel equipment, require use of Tier 3 or Tier 4 (where available) engines for the work. This will reduce NOx and PM combustion emissions, which could further support the basis for excluding the quantification of combustion emissions.

⁸ EJSCREEN: Environmental Justice Screening and Mapping Tool | US EPA

⁹ DEA, p. 29

Appendix B – Emissions Inventory

While there is not a lot of explanatory text, it appears the authors used EPA’s AP-42 emission factors, combined with site-specific data, to calculate potential PM emissions. EPA recommends the EA include documentation on the 50% control efficiency when spraying with water. The DEA suggests that a fugitive dust control plan will be developed and implemented for this site. As previously noted, EPA recommends the plan indicate under what conditions to spray water, and roles and responsibilities.

Transportation

The DEA discloses that radioactive waste destined for out-of-state disposal would be transported on a routine schedule (e.g., twice a week) to a rail yard in Fairbanks for transfer to trains for transit to the Port of Alaska or the Port of Whittier. The DEA further states that, “waste containers destined for out-of-state disposal will be transported on a routine schedule (e.g., twice a week) to a rail yard in Fairbanks for transfer to trains for transit to the Port of Alaska or the Port of Whittier (USACE 2020a).” During the Project webinar held January 28-29, 2021, it was made clear that the details of the radioactive waste transportation were yet to be determined. EPA recommends the EA include additional detail regarding the planned radioactive waste transport via trucks, trains and vessels destined for out of state and explain the potential safety concerns, associated risks, and any added applicable mitigation efforts while in transit.

Mitigation

The DEA states that, “the development and implementation of formal mitigation measures would not be required because potential adverse impacts from the Proposed Action would be less- than-significant.” A reader could reasonably conclude that there is a level of risk associated with the presence of radioactivity or radioactive waste. To support the statement made in the DEA, EPA recommends the EA include a definition of what is meant by “less-than-significant” in terms of radioactivity and the management of radioactive waste, and why a mitigation plan is not warranted.

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Appendix B—Air Quality

The Fort Greely SM-1A emissions inventory summary and calculations are provided in this appendix.

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**Fort Greely SM-1A
Fugitive Dust Emissions Inventory Summary**

Source	Uncontrolled Emissions (tons/yr)	
	PM₁₀	PM_{2.5}
Stockpile Fugitive Dust	0.06	0.02
Soil Export Fugitive Dust	2.81E-04	4.25E-05
Radioactive Soil Export Fugitive Dust	1.93E-04	2.93E-05
Soil Import Fugitive Dust	2.22E-04	3.37E-05
Wind Erosion	0.07	0.01
Site Preparation Fugitive Dust	1.33	--
Building Demolition Fugitive Dust	0.08	--
Total Uncontrolled Emissions (tons/yr)	1.54	0.03

Source	Controlled Emissions (tons/yr)	
	PM₁₀	PM_{2.5}
Stockpile Fugitive Dust	0.03	0.01
Soil Export Fugitive Dust	1.40E-04	2.12E-05
Radioactive Soil Export Fugitive Dust	9.67E-05	1.46E-05
Soil Import Fugitive Dust	1.11E-04	1.68E-05
Wind Erosion	3.52E-02	5.28E-03
Site Preparation Fugitive Dust	0.66	--
Building Demolition Fugitive Dust	0.04	--
Total Controlled Emissions (tons/yr)	0.77	0.01

Source	Uncontrolled Project Emissions (tons)	
	PM₁₀	PM_{2.5}
Stockpile Fugitive Dust	0.27	0.08
Soil Export Fugitive Dust	1.26E-03	1.91E-04
Radioactive Soil Export Fugitive Dust	8.71E-04	1.32E-04
Soil Import Fugitive Dust	1.00E-03	1.52E-04
Wind Erosion	0.32	0.05
Site Preparation Fugitive Dust	5.97	--
Building Demolition Fugitive Dust	0.08	--
Total Uncontrolled Project Emissions (tons)	6.64	0.13

Source	Controlled Project Emissions (tons)	
	PM₁₀	PM_{2.5}
Stockpile Fugitive Dust	0.14	0.04
Soil Export Fugitive Dust	6.31E-04	9.56E-05
Radioactive Soil Export Fugitive Dust	4.35E-04	6.59E-05
Soil Import Fugitive Dust	5.01E-04	7.58E-05
Wind Erosion	0.16	0.02
Site Preparation Fugitive Dust	2.98	--
Building Demolition Fugitive Dust	0.04	--
Total Controlled Project Emissions (tons)	3.32	0.07

**Fugitive Dust Emissions - Stockpile Area
SM-1A**

Stockpile

Area 7000 square feet
 Area 0.16 acres
 Percent Control 50%

Pollutant	Emission Factor	Uncontrolled Emissions		Controlled Emissions	
	ton/acre-yr	lb/hr	tpy	lb/hr	tpy
Total PM	0.38	0.014	0.06	0.007	0.03
PM10	0.38	0.014	0.06	0.007	0.03
PM2.5	0.114	0.004	0.02	0.002	0.01

Notes:

Total PM emission factor based on AP-42, Chapter 11.9 Western Surface Coal Mining (revised 10/98), Table 11.9-4

PM = PM10

PM2.5 = 0.3*PM10 Journal of the Air & Waste Management Association (2000) Vol. 50. Windblown Dust Contributes to High PM2.5 Concentrations

Acreage for stockpile and percent control are client provided

Conversion Factors:

2000 lbs/ton
 8760 hrs/yr