SM-1A FORT GREELY, ALASKA
DEACTIVATED NUCLEAR POWER PLANT PROGRAM

Technical Project Planning Meeting | January 28 and 29, 2021

Presenters: Brenda M. Barber, P.E. | David Watters, C.H.P. | U.S. Army Corps of Engineers

U.S.ARMY

US Army Corps of Engineers ®

TEAM GREELY

Home of the Rugged Professional

Agenda Day 1

January 28, 2021

Introduction and Welcome *8:30 AM–9:00 AM AST*

Introductions, Ground Rules and Housekeeping, Approach to Q&A Sessions, Acronyms, Technical Session Key Topics

Plenary Session: Project Introduction
9:00 AM–9:45 AM AST

Break *9:45 AM–10:00 AM AST*

Technical Session 1: Decommissioning Planning
10:05 AM–12:00 PM AST

Lunch Break *12:00 PM–1:30 PM AST*

Brief Introduction and Ground Rules Reminder
1:30 PM–1:40 PM AST

Technical Session 2: Waste Management and Transportation *1:40 PM–3:30 PM AST*

Wrap Up *3:30 PM AST*

[Pre-decisional information enclosed in this presentation]

Agenda Day 2

January 29, 2021

Introduction and Welcome *9:00 AM – 9:15 AM AST*

Technical Session 3: National Environmental Policy Act (NEPA) *9:15 AM–11:00 AM AST*

Lunch Break *11:00 AM–12:30 PM AST*

Brief Introduction and Ground Rules Reminder
12:30 PM–12:35 PM AST

Technical Session 4: National Historic Preservation Act (NHPA) *12:35 PM–2:00 PM AST*

Break *2:00 PM–2:15 PM AST*

Brief Introduction and Ground Rules Reminder
12:30 PM–12:35 PM AST

Closing Session: Summary and Open Discussion
2:20 PM–3:30 PM AST

Wrap Up *3:30 PM AST*

[Pre-decisional information enclosed in this presentation]

INTRODUCTION AND WELCOME

Brenda M. Barber, P.E.
Program Manager
Baltimore District
U.S. Army Corps of Engineers

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Senior Health Physicist
Baltimore District
U.S. Army Corps of Engineers

[Pre-decisional information enclosed in this presentation]

ACRONYMS

ACM – asbestos containing material

ADEC – Alaska Department of Environmental Conservation

ADOT&PF – Alaska Department of Transportation & Public Facilities

AEC – Atomic Energy Commission

ALARA – As Low as Reasonably Achievable

ANPP – Army Nuclear Power Program

APP – Accident Prevention Plan

ARP – Army Reactor Program

BRAC – Base Realignment and Closure

CEQ – Council on Environmental Quality

CFR – Code of Federal Regulations

DOD – Department of Defense

DP - Decommissioning Plan

EA – Environmental Assessment

EIS – Environmental Impact Statement

EO – Executive Order

ESA – Endangered Species Act

LBP – Lead Based Paint

LLRW – Low Level Radioactive Waste

MARSSIM – Multi-Agency Radiation Survey and Site Investigation Manual

M&E – Materials and Equipment

MWt – Megawatt-Thermal

NEPA – National Environmental Policy Act

NHPA – National Historic Preservation Act

NRC – U.S. Nuclear Regulatory Commission

NRHP – National Register of Historic Places

OHA - Office of History and Archeology

PCB – polychlorinated biphenyl

RCRA – Resource Conservation and Recovery Act

RME – reasonable maximum exposure

RPV – Reactor Pressure Vessel

SAFSTOR – Safe Storage

SHPO – State Historic Preservation Office

SM-1A – Stationary Medium Power Model 1A (Nuclear Reactor Facility)

SPCC – Spill Prevention, Control, and Countermeasures

TSCA – Toxic Substances Control Act

U.S. – United States

USACE – U.S. Army Corps of Engineers

USANCA – U.S. Army Nuclear and Countering Weapons of Mass Destruction Agency

USACHPPM – U.S. Army Center for Health Promotion and Preventive Medicine

USEPA – U.S. Environmental Protection Agency

USC – United States Code

VC – Vapor Container

VLLRW – Very Low Level Radioactive Waste

WMDP – Waste Management and Disposal Plan

[Pre-decisional information enclosed in this presentation]

KEY TOPICS COVERED IN TECHNICAL SESSIONS

TECHNICAL SESSION 1	TECHNICAL SESSION 2	TECHNICAL SESSION 3	TECHNICAL SESSION 4
Decommissioning Planning	**Waste Management Planning and Transportation**	**National Environmental Policy Act (NEPA)**	**National Historic Preservation Act (NHPA)**

[Pre-decisional information enclosed in this presentation]

PLENARY SESSION: PROJECT INTRODUCTION

Background and Historical Context

Project Overview

[Pre-decisional information enclosed in this presentation]

OPERATIONAL HISTORY AND CONTEXT

- U.S. Army Nuclear Power Program
- U.S. Army Deactivated Nuclear Power Plant Program
- SM-1A Operating and Decommissioning History
- SM-1A Proposed Timeline of Activities

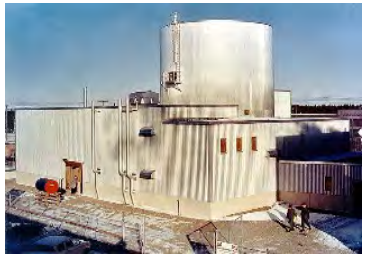
U.S. ARMY NUCLEAR POWER PROGRAM

- Army Nuclear Power Program (ANPP) was established in 1954.
- Joint effort between the U.S. Army Corps of Engineers (USACE), Department of Defense (DOD), and the Atomic Energy Commission (AEC).
- In 1957, the ANPP developed its first prototype nuclear reactor, the SM-1, at Fort Belvoir, Virginia.
- ANPP discontinued in 1976.
- Program was responsible for several important innovations in reactor design, containment and control structures, as well as nuclear health and safety programs.

U.S. ARMY NUCLEAR POWER PROGRAM (CONT.)

ANPP designed, built, and operated 8 reactors in the U.S. between 1957 and 1976.

Four Army reactors – Fort Belvoir (VA), Fort Greely (AK), Camp Century, Greenland and Sturgis Barge



One Air Force reactor – Sundance Station (WY)

One Navy reactor – McMurdo Station, Antarctica

Two reactors at the National Reactor Testing Station (ID)

[Pre-decisional information enclosed in this presentation]

CURRENT REGULATORY FRAMEWORK AND OVERSIGHT

- Defense Utilization Facilities Authorized by Section 91.b. of the Atomic Energy Act (AEA) of 1954
- Section 110.b. of the AEA Excludes DOD Utilization Facilities from AEC / U.S. Nuclear Regulatory Commission (NRC) Licensing
- Army Reactor Program (ARP) (AR 50-7)
- Compliance with Federal Standards Required
- Army Radiation Safety Program (DA PAM 385-24)
- USACE Developed Radiation Protection Programs
- Army Reactor Permits Issued to USACE by U.S. Army Nuclear and Combating Weapons of Mass Destruction Agency (USANCA; formerly the U.S. Nuclear and Chemical Agency) in G-3/5/7
- Army Reactor Council (ARC) Provides Oversight

ARMY DEACTIVATED NUCLEAR POWER PLANT PROGRAM

- USACE has responsibility for oversight, safeguarding, maintenance and ultimate decommissioning of two existing U.S. Army deactivated nuclear power plants:
  - SM-1 at Fort Belvoir (decommissioning to begin in Fall 2021)
  - SM-1A at Fort Greely (decommissioning to begin in 2023)
- USACE completed decommissioning the MH-1A reactor onboard the STURGIS in 2019

[Pre-decisional information enclosed in this presentation]

ARMY DEACTIVATED NUCLEAR POWER PLANT PROGRAM (CONT.)

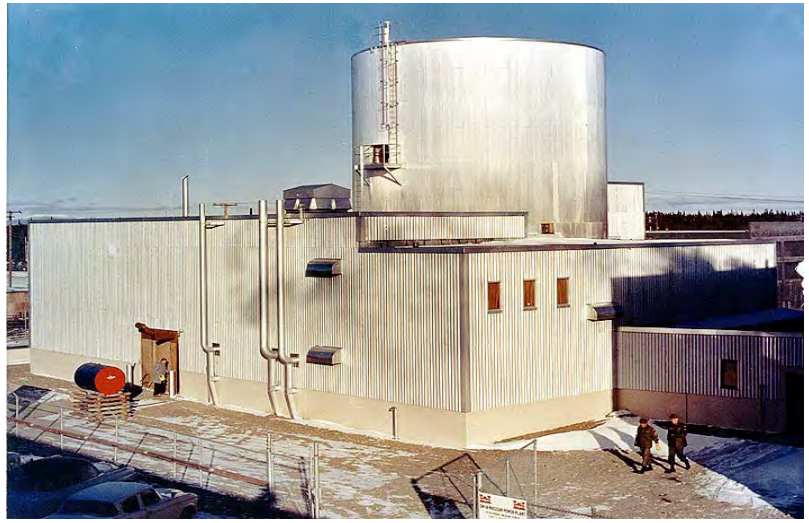
USACE's key responsibilities include:

- Ensuring the security of the residual radioactive materials present
- Ensuring the structural integrity of the facilities and performing required maintenance
- Performing environmental monitoring to ensure exposures to the public are below regulatory limits and 'As Low As Reasonably Achievable' (ALARA)
- Planning and performing final decommissioning within 60 years post-shutdown

[Pre-decisional information enclosed in this presentation]

SM-1A OPERATING HISTORY

- Built on Fort Greely, Alaska, between 1958 - 1962.
- Designed, constructed, and operated as part of the ANPP.
- Single-loop, 20.2 MWt pressurized water reactor.

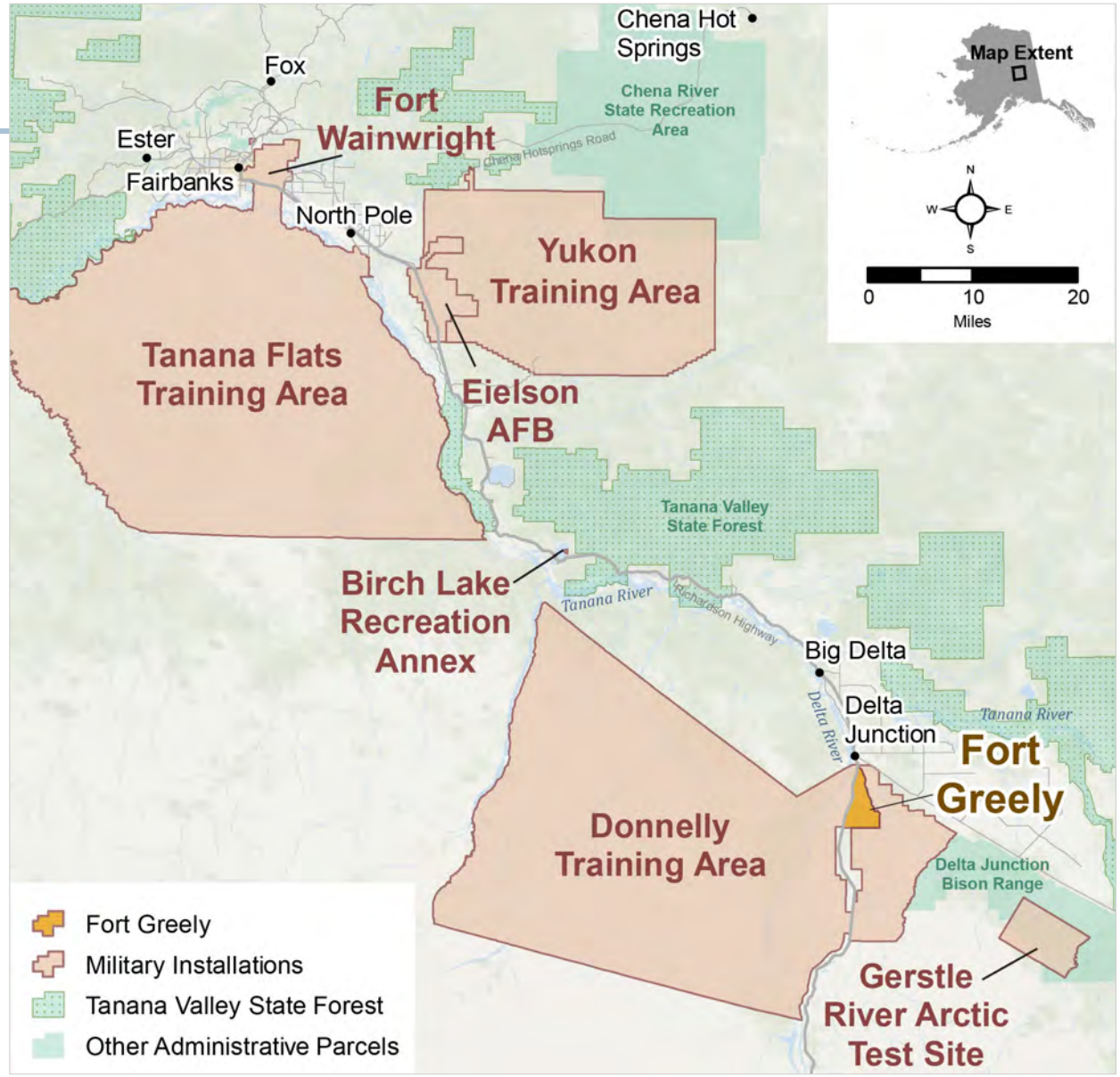


- Used highly enriched uranium dioxide fuel to generate 2,000 kW of electrical power and 37,850 pounds of extraction steam per hour.
- Supplied electrical power and heating steam for on-post buildings and facilities.
- Used as an in-service test facility to understand how equipment would function in an arctic environment.

FORT GREELY LOCATION

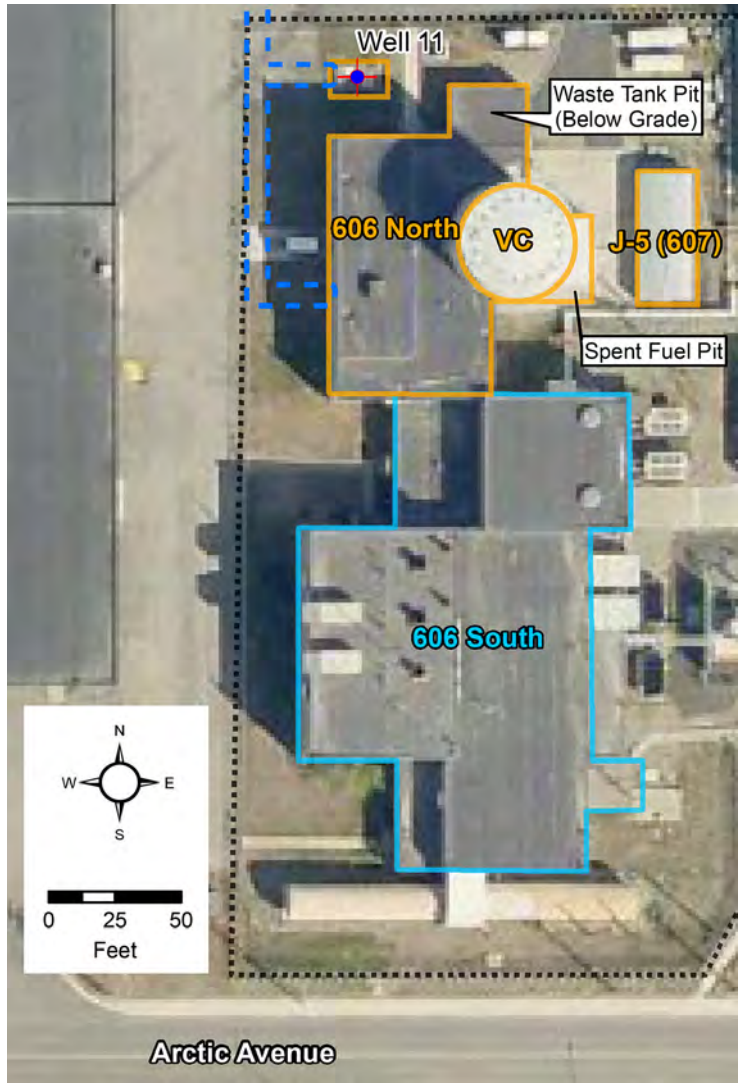
Distances from Fort Greely:

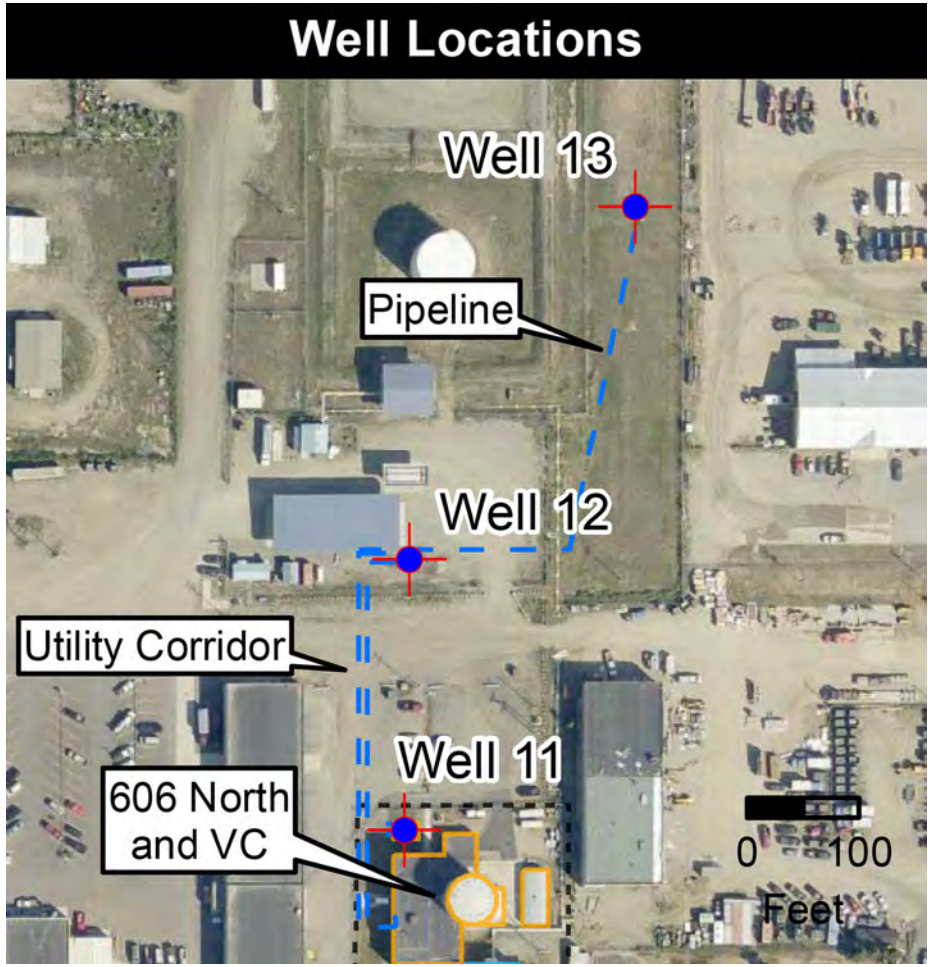
- Delta Junction – 5 miles
- Fairbanks – 100 miles
- Valdez – 263 miles
- Anchorage – 328 miles
- Whittier – 386 miles



[Pre-decisional information enclosed in this presentation]

AFFECTED AREAS OF SM-1A





LEGEND

Well

SM-1A Reactor Facility

606 North

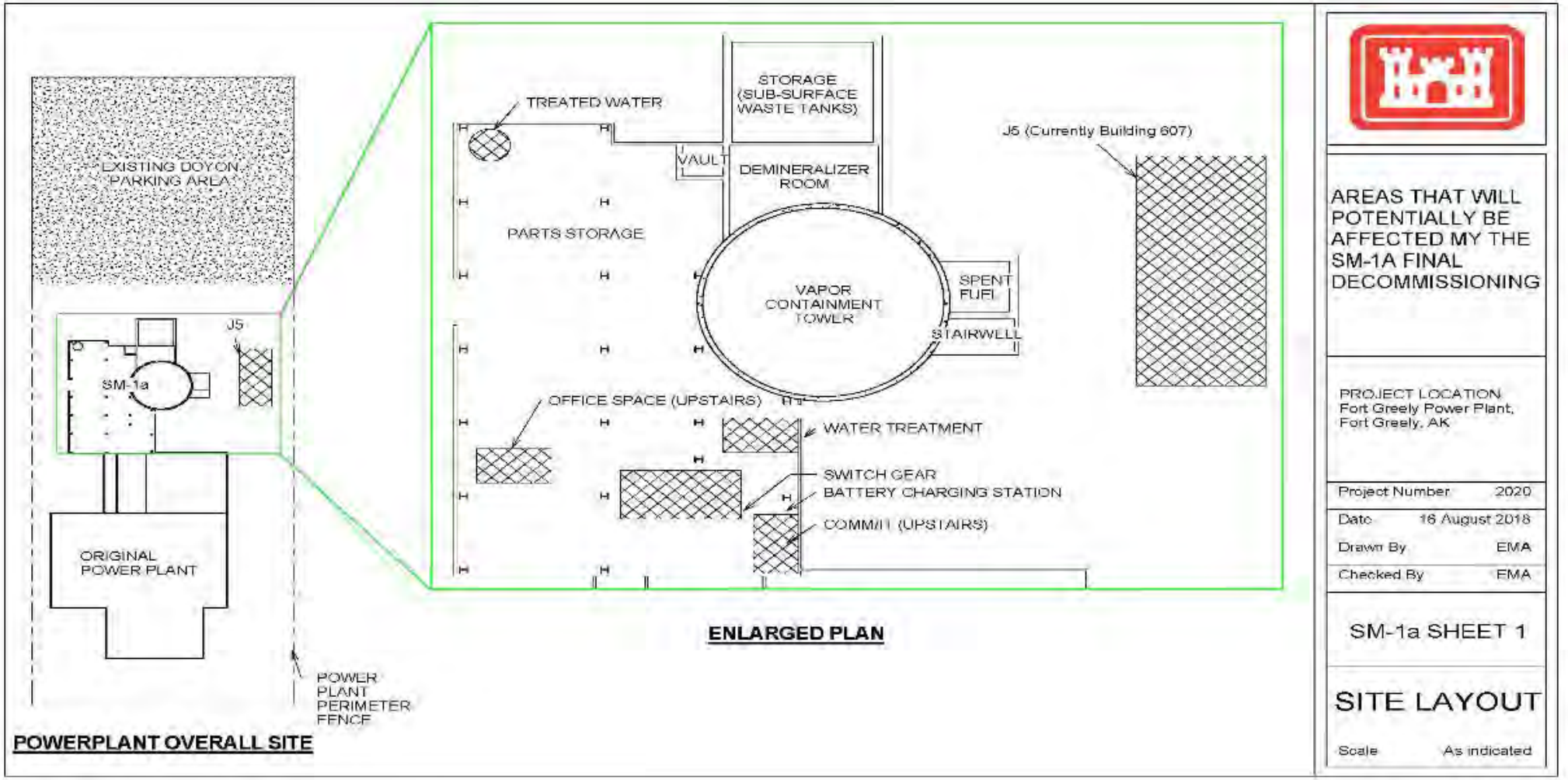
606 South

SM-1A Perimeter Fenceline

Underground Utility Infrastructure

[Pre-decisional information enclosed in this presentation]

AFFECTED AREAS OF SM-1A – BUILDING 606



[Pre-decisional information enclosed in this presentation]

SM-1A DEACTIVATION AND ENCASEMENT HISTORY

- The SM-1A deactivation process began upon the reactor's final shutdown in March 1972.
- The initial deactivation of SM-1A 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.

- 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.
- Site is still operational as the Central Heating and Power Plant (CHPP) for Fort Greely; Doyon Utilities owns and operates the utility plant at the site.

[Pre-decisional information enclosed in this presentation]

SM-1A TIMELINE OF ACTIVITIES

1958

SM-1A Construction Start

March 1962

SM-1A Reactor Startup
- Core II: April 1964
- Core III : Jan 1966
- Core IV: Aug 1970

August 1967

Pressure Vessel Annealed

March 1972

Last Operation

1973

Initial Deactivation & Entombment

June 1997

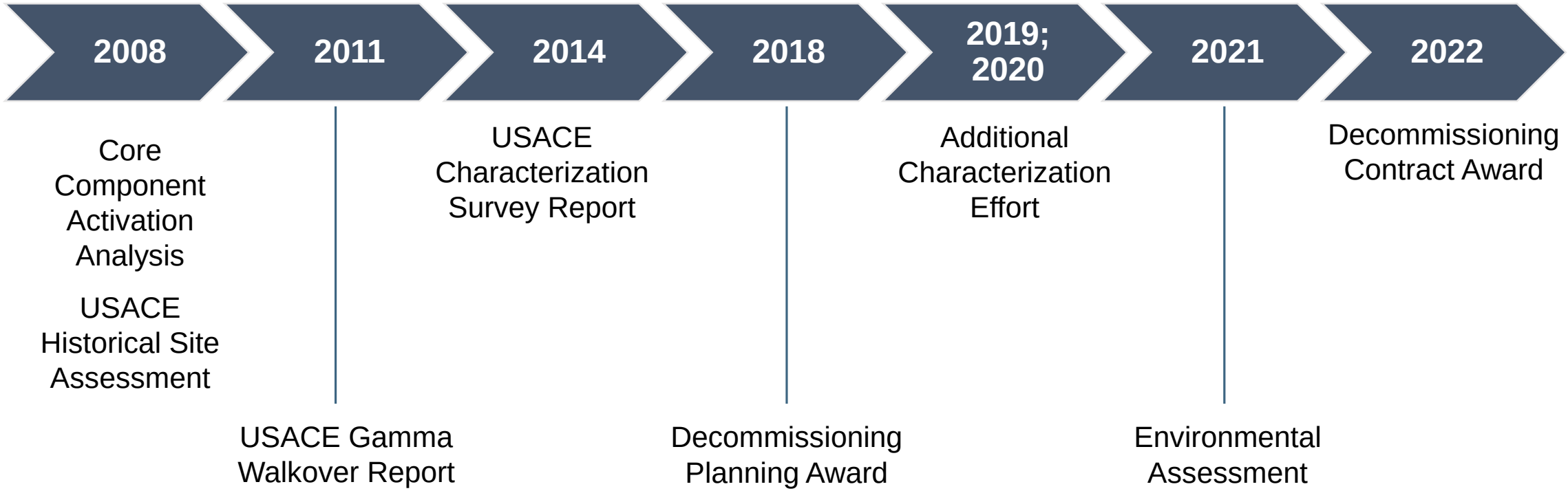
USACHPPM Survey

1997 - 2000

BRAC Pipeline & Dilution Well Removal

[Pre-decisional information enclosed in this presentation]

SM-1A TIMELINE OF ACTIVITIES (CONT.)



[Pre-decisional information enclosed in this presentation]

TECHNICAL SESSION 1

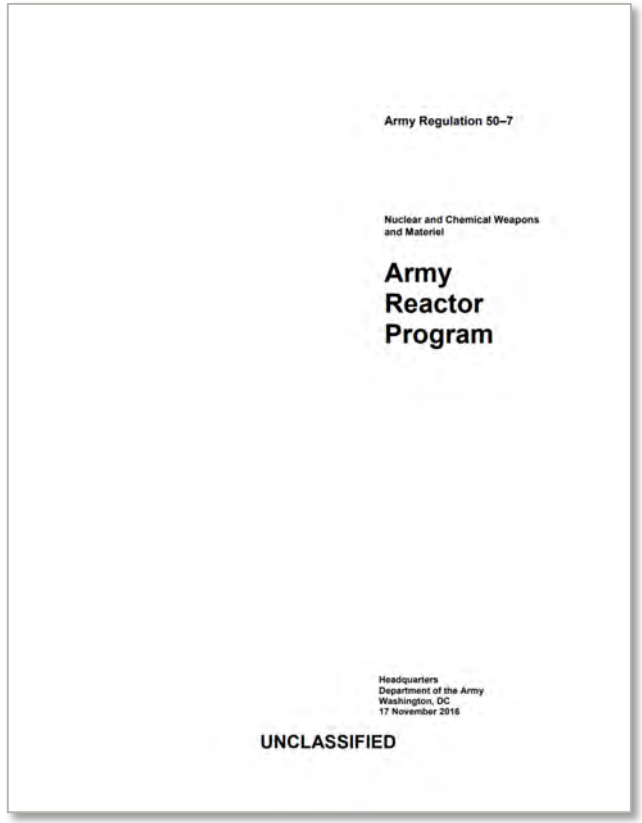
Decommissioning Planning

- Decommissioning Approach and Release of Areas Prior to Decommissioning
- USACE and Contractor Resources and Staffing
- Permits
- Waste Staging and Laydown Areas
- On-post Transportation

[Pre-decisional information enclosed in this presentation]

DECOMMISSIONING APPROACH

- Regulatory Authority
- U.S. Army Reactor Program is regulated under Army Regulation (AR) 50-7
  - AR 50-7 establishes policies, assigns responsibilities, and prescribes procedures
  - AR 50-7 establishes the Army's policy to follow U.S. Nuclear Regulatory Commission (NRC) guidelines
- Army Reactor Council (ARC)
  - Provides overall executive oversight of the Army Reactor Program



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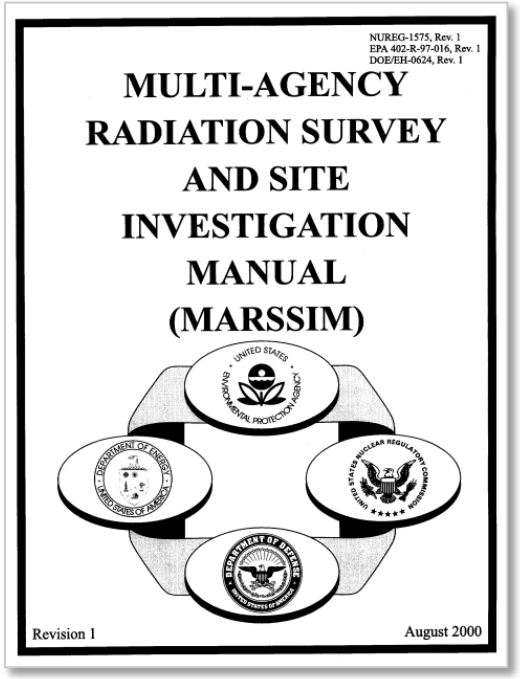
DECOMMISSIONING APPROACH

- USACE prepares a Decommissioning Plan (DP) and receives a Decommissioning Permit from U.S. Army Nuclear and Countering Weapons of Mass Destruction Agency
  - DP prepared per NRC's Consolidated Decommissioning Guidance, NUREG-1757, Vol. 1
    - "Group 3" decommissioning
    - NRC screening criteria are used in place of site-specific criteria
    - Screening criteria are based on exposure to the critical group or the reasonable maximum exposure individual
- Demolition of Buildings 606 North and 607 (J-5); wells; utilidor
- Release of the underlying soil for "unrestricted use"

[Pre-decisional information enclosed in this presentation]

DECOMMISSIONING APPROACH

- Release of Associated Buildings
  - Pre-mobilization (2020-2021)
    - Building 675 – Former Post Laundry received steam from SM-1A
    - Building 670 – Temporary storage of radioactive waste following 1991 removal of contaminated soil around the Spent Fuel Pit
  - After final demolition activities (2027)
    - Building 606 (South) – existing power plant
    - Building 606 Annex – between 606 North and South
    - Building 609 – potential laboratory space for contractor
- Released per Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) using NRC screening levels
- Buildings are available for unrestricted use



[Pre-decisional information enclosed in this presentation]

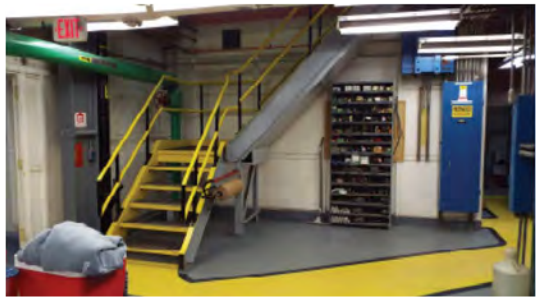
RELEASE OF MATERIALS FOR NON-RADIOACTIVE DISPOSAL OR RECYCLE

- Material and equipment from 606 North will be released using Multi-Agency Radiation Survey and Assessment of Materials (MARSAME) and screening criteria based on RME from waste processing, recycling, or disposal
  - Considers workers/handlers and end-user exposures
  - Approach to receive Alaska Department of Environmental Conservation (ADEC) approval
- Releasable material and equipment
  - Non-radioactive asbestos
  - Building materials (largest volume of releasable materials)
    - Concrete, structural steel, siding, roofing, etc.
  - Water softening system and supply (clean) water tanks and pipes
  - Electrical equipment, cables, and conduit
  - Furniture, appliances, etc.

[Pre-decisional information enclosed in this presentation]

RELEASE OF MATERIALS FOR NON-RADIOACTIVE DISPOSAL OR RECYCLE (CONT.)

Photos of potentially releasable material and equipment (M&E) in Building 606 North



RELEASE OF MATERIALS FOR NON-RADIOACTIVE DISPOSAL OR RECYCLE (CONT.)

- All structural materials and major pieces of equipment in 606 North and J-5 are considered “impacted” or “non-impacted”
  - Perform a visual inspection
  - Review historical information
  - Assess process knowledge
  - Perform radiation measurements
- Document “non-impacted” determination
- Perform additional surveys if necessary
- Determine disposal route

RELEASE OF MATERIALS FOR NON-RADIOACTIVE DISPOSAL OR RECYCLE (CONT.)

Release Process

1. Contractor generates MARSAME survey packages
   - Surface radioactivity and volumetric radioactivity where applicable
2. USACE reviews and approves a survey package
3. ADEC approval is required for survey packages for in-state options
4. Removal or demolition
5. Transportation and disposal or recycle
   - Fort Greely, Delta Junction, Fairbanks

PERMITS AND REGULATORY COMPLIANCE

Permits/Compliance	Approved/Issued By
Facilities Work Request (DA FORM 4283)	Fort Greely
Dig (Form ENV ECR-01)	Fort Greely
Air Quality Construction (minor)	ADEC
AK Landfill Permit Modifications	ADEC
Air (asbestos, equipment, radioactive materials)	U.S. Environmental Protection Agency (USEPA) Region 10
RCRA Generator ID	USEPA Region 10
Waste Generator	States receiving Low Level Radioactive Waste (LLRW) / Disposal sites
Discussion Question: Are other permits / approvals needed?	

WELL CLOSURES

Well Number	Date Installed	Type	Size	Depth
11	1959	Supply	18”	332’
12	1959	Supply	18”	332’
13	1959	Recharge	18”	332’

Supply wells will be decommissioned in accordance with 18 AAC 80.015(e)

- Alaska Best Management Practices – Maintaining or Decommissioning Water Wells and Boreholes
- ANSI/AWWA Standard A100-06, Water Wells, and Appendix H to ANSI/AWWA Standard A100-06 (Decommissioning of Test Holes, Partially Completed Wells, and Abandoned Completed Wells)

Discussion Question: Is Well 13 considered a Class V Injection Well requiring closure by USEPA Region 10?

- Class V: Injection of Non-hazardous Fluids into or Above Underground Sources of Drinking Water

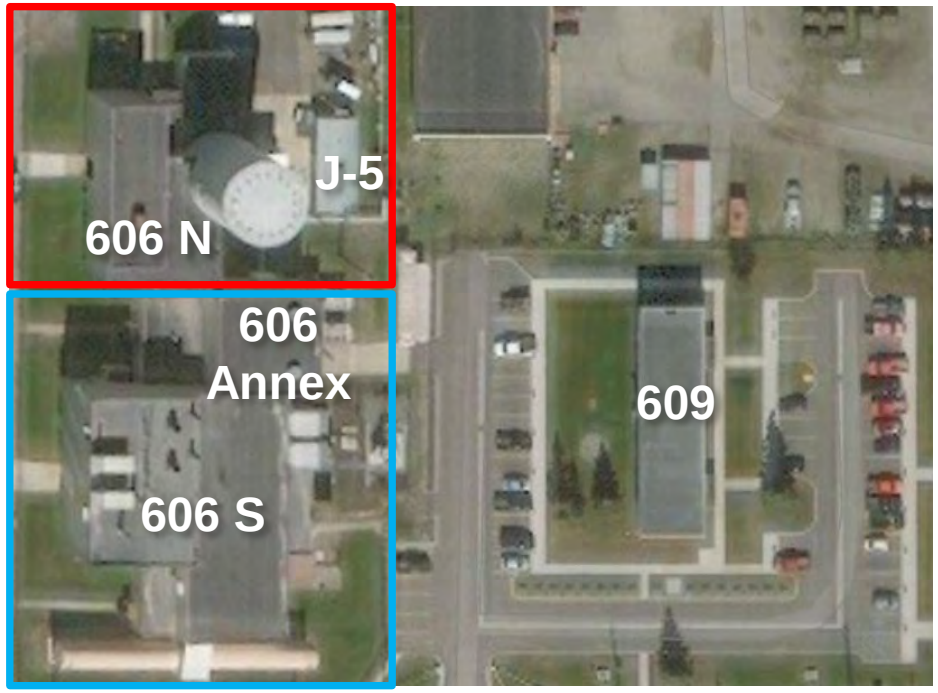
USACE AND CONTRACTOR PRESENCE AT FORT GREELY

Building 609

- USACE and Contractor offices
- Contractor counting laboratory
- General material storage
- Parking

Staffing

- 5 to 6 full-time USACE staff
- 25 to 50 full-time Contractor staff
- Local hires and subcontractors
- Seasonal fluctuations



USACE AND CONTRACTOR PRESENCE AT FORT GREELY (CONT.)

Building 606 North

- Disconnect and reconnect electrical power
- Isolate from Building 606 South Annex
- Establish new perimeter security fence and gates
- Utilize storage and working spaces as long as possible
- Provide controlled access to radioactive materials / contaminated areas

Parking Lot North of Building 606

- Provide equipment / truck access
- Stage equipment

[Pre-decisional information enclosed in this presentation]

WASTE STAGING AND LAYDOWN AREAS

- Parking Lot North of Building 606
- Nearby On-Post Waste Staging Area
  - Discussion Question: What are the requirements for the site and what sites are available?
  - Site is yet to be determined
  - Minimum of 2 acres
  - Site improvements
    - Grading, gravel or concrete pad
    - Security fence
    - Remote security monitoring

ON-POST TRANSPORTATION

- Waste will move from Building 606 North to nearby, on-post waste staging / storage area
- All waste will be properly packaged before leaving the Building 606 North area
- Route from Building 606 North will be determined after on-post waste staging area is determined
- Waste transportation on-post will avoid residential areas, recreational facilities, and other sensitive on-post uses to the extent possible
- Before leaving for off-post transportation, waste will be marked, labeled, and placarded as required to meet Alaska Department of Transportation & Public Facilities (ADOT&PF) and International Maritime Dangerous Goods (IMDG) / International Air Transport Association (IATA) regulations (as required)
- Off-post transportation logistics are under development

[Pre-decisional information enclosed in this presentation]

ON-POST TRANSPORTATION

- Route shown is for waste that will be shipped directly off-post from Building 606 North (not staged)
- North and west to Robin Road
- South to Big Delta Avenue
- West to Richardson Highway

[Pre-decisional information enclosed in this presentation]

Agenda Recap Day 1

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[Pre-decisional information enclosed in this presentation]

TECHNICAL SESSION 2

Waste Management Planning and Transportation

- Waste Streams
- Waste Storage
- Disposal Options
- Transportation of Hazardous and Radioactive Waste

[Pre-decisional information enclosed in this presentation]

WASTE STREAMS - DEFINITIONS

- Non-radioactive materials (discussed in Technical Session 1)
  - Available for in-state disposal or recycling
- Non-radioactive regulated waste
  - Resource Conservation and Recovery Act (RCRA) hazardous waste (Subtitle C) – waste that “exhibits any of the characteristics of hazardous waste identified in subpart C” of 40 Code of Federal Regulations (CFR) Part 261
    - Elemental lead used for shielding, mercury (light ballasts), lead-based paint waste
  - Toxic Substances Control Act (TSCA) waste (40 CFR Subpart R)
    - PCBs (in paints and oils), asbestos containing material (ACM)

WASTE STREAMS - DEFINITIONS (CONT.)

- Low Level Radioactive Waste (LLRW)
  - The category of all activated and contaminated radioactive wastes that does not contain a RCRA hazardous waste characteristic
  - Excludes spent nuclear fuel, high-level radioactive waste, and transuranic waste
- Mixed Low Level Radioactive Waste
  - LLRW that also includes a RCRA hazardous waste characteristic (e.g., radioactively contaminated lead shielding)
- Exempt Waste
  - Waste that perhaps exceeds the radiological free-release criteria but qualifies for regulatory exemption

WASTE STREAMS - GENERATION

- Regulated materials abatement
  - asbestos, lead-based paint, etc.
- Removal of non-radioactive M&E
  - old electrical equipment (non-PCB), misc. water tanks, wiring, conduit, pipes for non-radioactive liquids, etc.
- Removal of radioactive waste, encasement grout mixture, and encased radioactive materials
  - Includes the Reactor Pressure Vessel (RPV)
- Demolition (non-radiological and radioactive)
  - Concrete, steel, siding, etc.
- Soil remediation

[Pre-decisional information enclosed in this presentation]

WASTE STREAMS - GENERATION

Wastes generated due to decommissioning activities

- Wastes from decontamination of building materials
  - Radiologically contaminated concrete dust
  - Removed paints containing PCBs and/or lead
  - Water from dust control and concrete cutting
- Radiologically contaminated containment materials (plastics, framework, ventilation, filters etc.)
- Personal Protective Equipment
- Soil from over-excavations (sloping or benching)

WASTE STREAMS – VOLUMES (APPROXIMATE)

Type of Waste	LLRW (CY) estimates	Non-LLRW (CY) estimates	Approximate number of trucks or containers
Building Debris	140	1,030	100
Concrete Debris	1,530	1,660	270
Soil	970	400	120
Material and Equipment	320	390	60
Class C Radioactive Waste (the RPV)	40	-	1

TEMPORARY HAZARDOUS AND RADIOACTIVE WASTE STORAGE

- Containerized waste storage areas (adjacent and nearby locations) will be selected with the concurrence of Fort Greely.
- Waste storage areas will be designed to ensure security of materials while in storage and compliance with applicable regulations (e.g., TSCA/RCRA).
- Laydown areas will be either concrete or gravel and located in the general vicinity of the project as to avoid impacts to the tenants on Fort Greely.
- Waste will be packaged in designated areas near the point of generation.

TEMPORARY HAZARDOUS AND RADIOACTIVE WASTE STORAGE

(continued)

- At the storage location, packaged waste will be placed in designated areas based on waste types: clean, hazardous, radioactive, mixed waste, and TSCA.
- Containers will be marked, labeled, and placarded as required for compliant storage and transportation.
- Radiation surveys will be performed at the storage location to ensure the waste meets all safety requirements for human health and the environment, and to ensure it meets shipping requirements.

Discussion Question:

How do generators manage their associated RCRA/TSCA timeclocks with Alaska's DOT seasonal shipping restrictions?

TEMPORARY HAZARDOUS AND RADIOACTIVE WASTE STORAGE

(continued)

Larger components (steam generator, pressurizer, RPV removed from the Vapor Container (VC) will be placed into specialty containers to accommodate the size and radioactivity of the component.

[Pre-decisional information enclosed in this presentation]

DISPOSAL OPTIONS

- Non-radioactive materials could be available for in-state disposal and recycling
  - ADEC approval is required for survey packages prior to release
- Potential in-state disposal options include:
  - Fort Greely construction and demolition landfill
  - Delta Junction
  - Fairbanks North Star Borough landfill

DISPOSAL OPTIONS (CONT.)

Radioactive waste

- Waste Control Specialists (WCS) located near Andrews, Texas
- Energy Solutions, Utah
- Nevada National Security Site (NNSS), Nevada

- Very low activity material available for alternate disposal (exempt)
  - U.S. Ecology, Idaho
  - WCS, Texas (RCRA cell)

Regulated waste (non-radioactive)

- Thermal treatment at U.S. Ecology/NRC Alaska's Moose Creek facility
- Regional landfills in the Pacific Northwest states

- Asbestos
  - Fort Greely landfill
  - Fairbanks North Star Borough landfill (accepted on a scheduled basis)

[Pre-decisional information enclosed in this presentation]

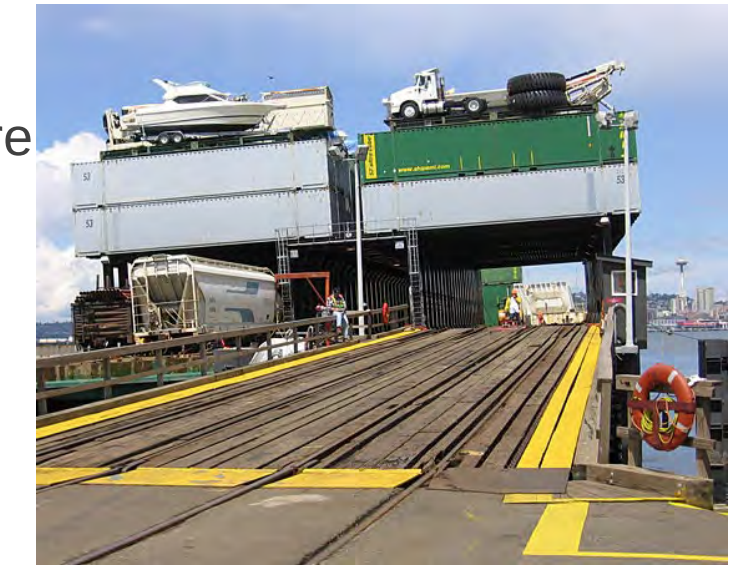
WASTE TRANSPORT OPTIONS

- Non-radioactive construction debris may be sized and loaded directly into containers or trucks at the work site and transported to the appropriate in-state facility.
- Waste shipped to the lower 48 states may involved a combination of truck, train, and overwater vessel.
- Requires compliance with U.S. Department of Transportation and International Maritime Dangerous Goods regulations.

WASTE TRANSPORT OPTIONS (CONT.)

Waste destined for the lower 48 may be transported by:

- Step 1: Trucked in shipping containers to a rail yard in Fairbanks where it can be transloaded onto rail cars
- Step 2A: Transported by train to the Port of Whittier where the rail cars will be loaded onto barges
- Step 2B: Transported by train to the Port of Alaska in Anchorage where the containers will be loaded onto barges or container ships
- Step 3: Shipped to Port of Seattle via common water routes
- Step 4: Transported by rail or truck to the selected disposal facilities



WASTE TRANSPORT OPTIONS BEING CONSIDERED (CONT.)

- Truck shipments from Ft. Greely to Fairbanks Depot, Alaska
  - Twice weekly shipments (average)
  - 6-hour roundtrip drive (filled/empty containers)
- Rail shipments from Fairbanks Depot to Whittier or Anchorage Port, Alaska
  - 2 weekly shipments available
  - 1 day duration
- Barge or Container ship to Seattle, WA
  - Twice weekly service
  - Departs Wednesday and Friday
  - Fairbanks to Tacoma 13-day transit one way

[Pre-decisional information enclosed in this presentation]

WASTE TRANSPORT OPTIONS (CONT.)

- Early coordination with shipping companies or the Alaskan Railroad is necessary to address potential issues:
  - Insurance
  - Labor issues at ports
  - Staging areas near ports
- Alternate transport options may be offered by future bidders, to include truck transport through Canada and/or air transport.
- If a future bidder feels they can offer a more cost-effective, low-risk transport option, it will be evaluated during the bidding process. Regulatory impacts will be assessed at that time.

OTHER WASTE TRANSPORT CONSIDERATIONS

- Larger components (Steam Generator, Pressurizer, RPV) may encounter restrictions for overweight loads.
- Heavy loads are restricted on Alaskan roadways during the spring months to avoid damage to the roadways.
- RPV is most radioactive and heaviest single waste shipment.
  - Examples of security precautions include tracking, route review and approval, and notification of local authorities over the shipment route.
- Each overweight load will be evaluated during the planning phases to ensure that potential transport issues such as escort vehicles, roadway stipulations, rail and barge schedules are coordinated.

TECHNICAL SESSION

3

National Environmental Policy Act (NEPA)

- NEPA Overview
- Public Involvement
- Best management practices to prevent or minimize potential adverse impacts.

NATIONAL ENVIRONMENTAL POLICY ACT PROCESS

- The National Environmental Policy Act (NEPA) requires federal agencies to assess the environmental and socioeconomic effects of their proposed actions prior to making decisions.
- NEPA also provides opportunities for the public to learn about and comment on federal proposed actions.

NEPA – ENVIRONMENTAL ASSESSMENT

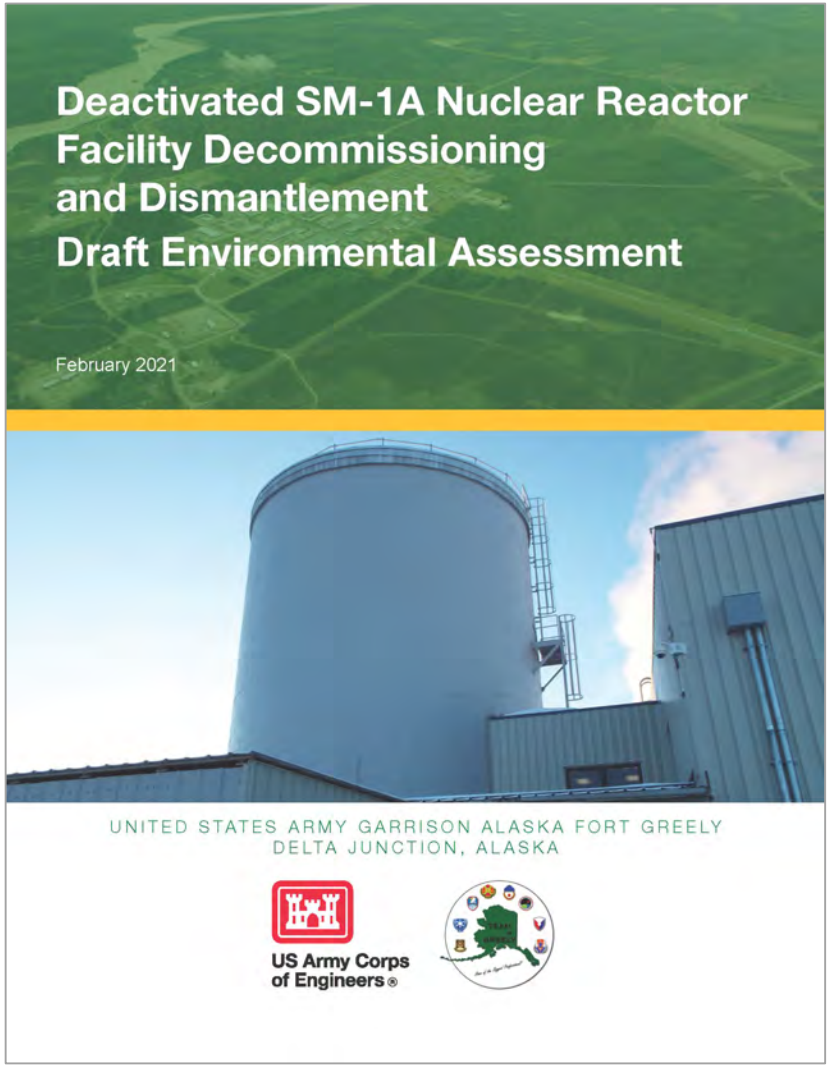
- USACE is preparing an Environmental Assessment (EA) to analyze the potential impacts from the proposed decommissioning (the "Proposed Action").
- An EA is a concise public document that provides sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS). The EA includes 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 persons consulted.

NEPA EA – INTENT AND DECISION

- The EA informs decision-makers and the public of the Proposed Action's potential environmental effects and considered alternatives prior to making a federal decision.
- This decision-making process includes identifying measures USACE would commit to minimize potential environmental effects, required by NEPA, Council on Environmental Quality (CEQ) regulations, and Army NEPA regulations.
- The decision to be made is should USACE implement the Proposed Action and, if necessary, incorporate measures to minimize potential adverse effects and enhance beneficial effects on resources, as applicable.

NEPA - SCOPE OF THE EA

- The 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.
- Assesses alternatives for implementing the Proposed Action and potential impacts from the No Action Alternative.



[Pre-decisional information enclosed in this presentation]

OTHER REQUIREMENTS CONSIDERED BY NEPA* FOR SM-1A

- National Historic Preservation Act (54 USC Section 300101 et seq.)
- Clean Water Act (33 USC Section 1251 et seq.)
- Clean Air Act of 1990 (42 USC Section 7401 et seq., as amended)
- Resource Conservation and Recovery Act (42 USC Section 6901 et seq.)
- Toxic Substances Control Act (15 USC Section 2601 et seq.)
- Endangered Species Act (16 USC Section 1531 et seq.)
- Migratory Bird Treaty Act (16 USC Section 703 et seq.)
- Section 438 of the Energy Independence and Security Act (Public Law 110-140)
- 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)
- Applicable State and Local regulations

**This list is not comprehensive; other requirements may apply*

NEPA EA – PURPOSE AND NEED

- The **purpose** of the Proposed Action is to safely remove, transport, and dispose of all 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 NRC at 10 CFR § 20.1402 and adopted by the Army; and terminate the SM-1A decommissioning permit issued by the U.S. Army Nuclear and Countering Weapons of Mass Destruction Agency.

- The **need** for the Proposed Action is to complete the decommissioning of SM-1A within 60 years 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.

NEPA EA – ALTERNATIVES

- 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.
  - Would not meet the Purpose and Need but is analyzed to provide a comparative baseline in accordance with 40 CFR §1502.14.
- Proposed Action Alternative
  - Would implement the Proposed Action to meet the Purpose and Need by completing decommissioning by 2032, releasing the site for unrestricted use, and terminating the SM-1A decommissioning permit.
- 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.

NEPA EA – EFFECTS ANALYSIS

The Draft EA evaluates the Proposed Action's potential effects on the following resources:

- Cultural Resources
- Water Resources
- Socioeconomics and Environmental Justice
- Biological Resources
- Air Quality
- Transportation and Traffic
- Utilities
- Soils
- Non-Radioactive Regulated Materials and Solid Waste
- Radiological and Occupational Safety and Health

[Pre-decisional information enclosed in this presentation]

NEPA EA – PUBLIC INVOLVEMENT

USACE outreach regarding the proposed decommissioning of SM-1A is ongoing:

- Scoping letters were sent to stakeholders and Alaska Native tribes to solicit feedback to be considered in the EA.
- Meeting held in September 2020 in Fairbanks to solicit input and inform Alaska Native tribes.
- Will include a minimum 30-day public review and comment period for the Draft EA, as well as public meetings (with virtual options in consideration of the COVID-19 pandemic).
  - An extension to the public review and comment period may be requested by the public.
- Publication of Draft EA will be announced via a Notice of Availability (NOA) in local and on-post newspapers; printed and electronic copies will be available.
- All substantive comments received during the Draft EA public review period will be addressed in the Final EA.

[Pre-decisional information enclosed in this presentation]

NEPA EA – PUBLIC MEETING PLAN

- The public comment period is scheduled for February 26, 2021 (when the Draft EA is released) through March 28, 2021.
- USACE will conduct in-person public meetings March 9 in Fairbanks, AK at the Westmark Hotel, and March 11 in Delta Junction, AK (pending identification of a meeting location to allow social distancing for COVID-19 pandemic considerations).
  - Meetings will include presentations, Q&A, posters, and comment forms.
- USACE will provide print copies of the Draft EA to interested stakeholders. Electronic copies will be available for download on the project website and other internet and social media links.
  - Stakeholders may request print copies prior to release of the Draft EA; stakeholder update and request-by date forthcoming.
  - USACE SM-1A Project website: https://www.nab.usace.army.mil/SM-1A/

[Pre-decisional information enclosed in this presentation]

NEPA EA – PUBLIC MEETING PLAN (CONT.)

- USACE will host a Virtual Public Meeting room set up in the style of an in person public meeting, with posters, information, and “How to Comment” links.
  - Additional virtual options (such as virtual/online meetings/Q&A sessions; WebEx television broadcast) are being considered.
- Print copies of the Draft EA will be available at the Delta Community Library in Delta Junction, the Fort Wainwright Library, the Noel Wien Public Library in Fairbanks, and the Z. J. Loussac Library in Anchorage (libraries may not be open, in accordance with current COVID-19 pandemic health mandates).
- Substantive comments on the Draft EA will be addressed in the Final EA.
- Public participation in the SM-1A NEPA process is strongly encouraged.

EA – AGENCY AND TRIBAL INVOLVEMENT

- 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/State Historic Preservation Office
- USACE is consulting with federally-recognized Alaska Native tribes in accordance with DOD Instruction 4710.02, Interactions with Federally Recognized Tribes.
- Substantive public and agency comments received during the NEPA process will be addressed in the Final EA, as appropriate.

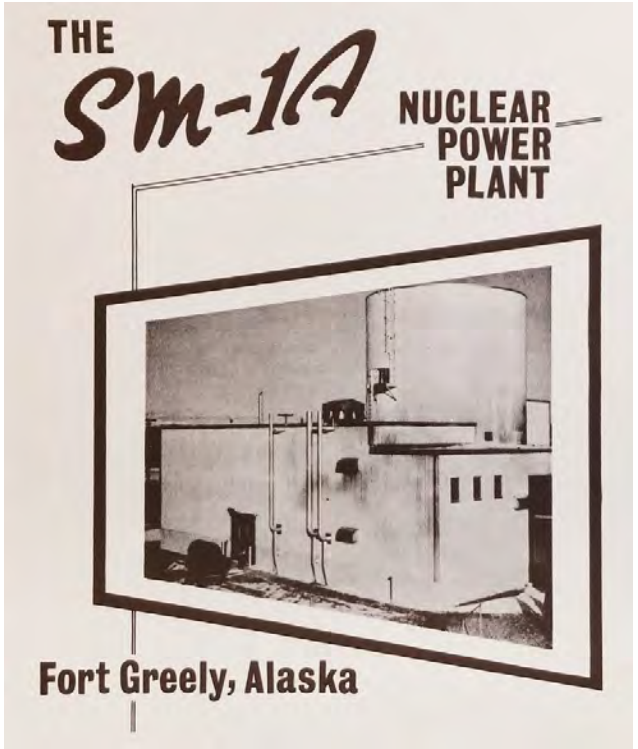
NEPA – BEST MANAGEMENT PRACTICES

General

- Proactively minimize environmental impacts.
- USACE will comply with all applicable federal, state, and local regulatory and permitting requirements.

Cultural Resources

- Execute a Memorandum of Agreement (MOA) in consultation with the Alaska State Historic Preservation Office (SHPO) and consulting parties (36 CFR § 800.6(c)).



- Adhere to established U.S. Army Garrison Alaska policies and procedures in the event of unanticipated discoveries, consistent with 36 CFR § 800.13(b).

NEPA – BEST MANAGEMENT PRACTICES

Water Resources

- Obtain coverage under the Alaska Construction General Permit (CGP) and adhere to a site-specific Stormwater Pollution Prevention Plan (SWPPP).
- Prepare and adhere to a project- and site-specific Spill Prevention, Control, and Countermeasures (SPCC) Plan.
- Capture and containerize waste fluids and dispose of at permitted on- and/or off-post facilities.
- Provide spill containment and cleanup kits for use in the event of an unintended release of contaminants or waste material.

NEPA – BEST MANAGEMENT PRACTICES

Biological Resources

- Adhere to Fort Greely policies and practices to prevent or minimize the introduction and spread of invasive plant species.
- Use spotters or escort vehicles to minimize the risk of collisions with wildlife during on-post vehicle operations.
- Coordinate with Fort Greely to determine the appropriate course of action if an active Migratory Bird Treaty Act-protected bird nest is observed on the SM-1A site.

NEPA – BEST MANAGEMENT PRACTICES

Air Quality

- Cover payloads in truck beds and trailers in transit.
- As weather conditions allow, periodically sweep or spray water on pavement and unpaved roads, and cover or spray water on soil stockpiles.
- Use ultra-low sulfur diesel, as available, to minimize oxides of sulfur emissions.
- Minimize operating and idling time to reduce emissions from heavy construction equipment and vehicles.
- Obtain applicable air quality permits in compliance with federal, state, and local regulatory requirements.

NEPA – BEST MANAGEMENT PRACTICES

Transportation and Traffic

- Package and ship all radioactive and non-radioactive waste in accordance with the Waste Management Plan and applicable regulatory requirements.
- Use licensed contractors to transport waste in accordance with applicable regulatory requirements for disposal at permitted on- and/or off-post facilities.
- Implement a project-specific, on-post transportation management plan for decommissioning personnel and heavy trucks.
- Coordinate with on-post emergency responders regarding waste shipments.
- Schedule decommissioning-related traffic for off-peak hours to minimize congestion.

NEPA – BEST MANAGEMENT PRACTICES

Soils

- Adhere to a project- and site-specific SWPPP to minimize soil migration and sedimentation of receiving waterbodies.
- Replace excavated soils with clean fill soils meeting applicable Fort Greely requirements.
- Implement an environmental monitoring plan and conduct soil sampling to support release of the site for unrestricted use.
- Conduct FSSs on soils after decommissioning is complete to ensure all remaining soils meet applicable unrestricted release criteria.
- Revegetate or restore disturbed soils on the SM-1A site to a permeable condition where feasible to prevent or minimize any potential soil erosion.

NEPA – BEST MANAGEMENT PRACTICES

Non-Radioactive Hazardous Materials and Non-Hazardous Solid Waste

- Prepare and adhere to a project- and site-specific SPCC Plan.
- Adhere to a Hazardous Material Abatement Plan to manage and dispose of ACM, lead-based paints (LBP), PCBs, mercury, and/or other hazardous materials.
- Use, manage, store, and dispose of hazardous materials and regulated solid wastes in accordance with applicable regulatory requirements.
- Provide spill containment and cleanup kits for use in the event of an unintended release of contaminants or waste material.

NEPA – BEST MANAGEMENT PRACTICES

Radiological and Occupational Safety and Health

- Conduct decommissioning activities in a controlled manner and in accordance with the Decommissioning Plan (DP), Accident Prevention Plan (APP), Radiation Safety Program, Environmental Monitoring and Control Program, and Waste Management and Disposal Plan (WMDP).
- Adhere to worker protection requirements in Engineer Manual (EM) 385-1-1, Safety and Health Requirements and EM 385-1-80, Radiation Protection.
- Monitor occupational radiation exposure for personnel working in restricted areas.
- Execute MOAs with on- and/or off-post fire and emergency response services and/or emergency health care providers as necessary to provide fire and life safety support.

NEPA – BEST MANAGEMENT PRACTICES

Utilities

- Coordinate with potentially affected facilities in advance, and sequence or stagger temporary utility service shutoffs, to minimize operational impacts.

Socioeconomics and Environmental Justice

- BMPs identified for other resources would minimize potential adverse impacts on nearby communities and ensure that impacts on environmental justice communities are not disproportionately adverse.

TECHNICAL SESSION

4

National Historic Preservation Act (NHPA)

- Regulatory overview
- Section 106 Consultation
- Analysis of effects to Historic Properties
- Mitigation for Adverse Effects

[Pre-decisional information enclosed in this presentation]

NATIONAL HISTORIC PRESERVATION ACT

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider effects of undertakings on resources listed in or eligible for inclusion in the National Register of Historic Places (NRHP).

NATIONAL HISTORIC PRESERVATION ACT

Key components of Section 106 requirements include:

- **Consult** with federal agencies, State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officers, Advisory Council on Historic Preservation, and other consulting parties
- **Identify** historic properties and determine eligibility for the NRHP
- **Assess effects** to eligible historic properties in consultation with interested parties and determine if effects are adverse
- **Resolve adverse effects** by avoiding, minimizing, or mitigating impacts

SECTION 106 OF THE NHPA CONSULTATION

USACE is the Lead Federal Agency

- U.S. Army Garrison Alaska Involvement

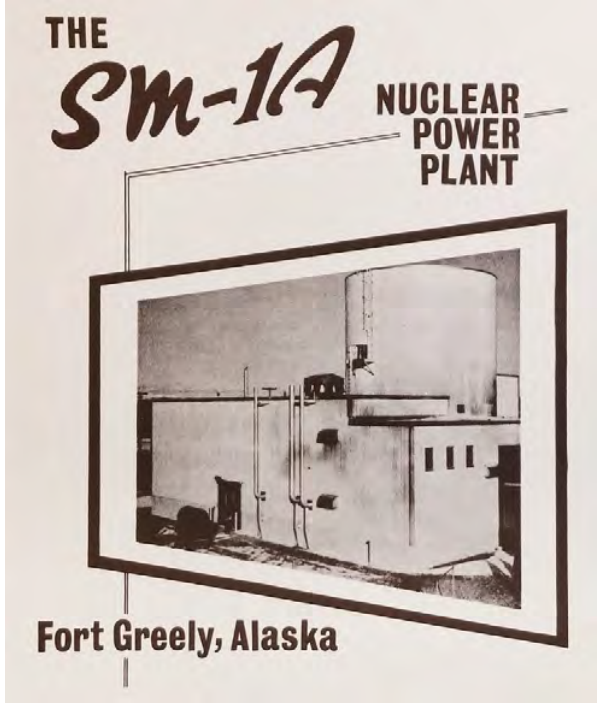
USACE Consulting Parties

- Alaska SHPO / Office of History and Archeology
- Tribal Governments and other interested parties
- ACHP invited, but declined participation at this time

USACE Consultation

- Defined the Area of Potential Effect (June 2020)
- TPP Involvement
- Cultural Resources Technical Report & Adverse Effect Determination (December 2020)

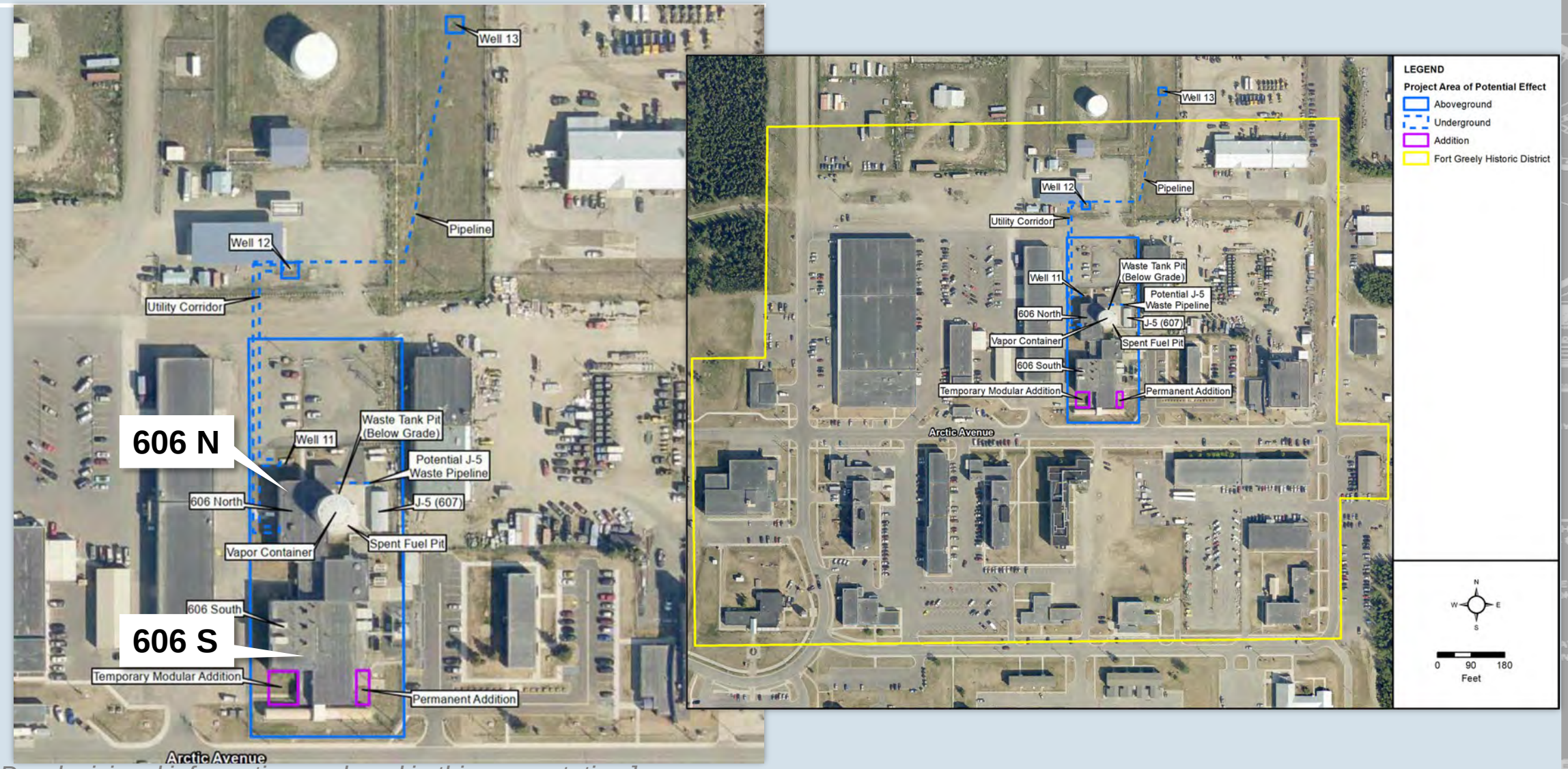
MOA (expected Spring 2021)



[Pre-decisional information enclosed in this presentation]

AREA OF POTENTIAL EFFECT AND HISTORIC DISTRICT

Discussion Question: Questions or feedback on the Area of Potential Effect?



[Pre-decisional information enclosed in this presentation]

CULTURAL RESOURCES TECHNICAL REPORT

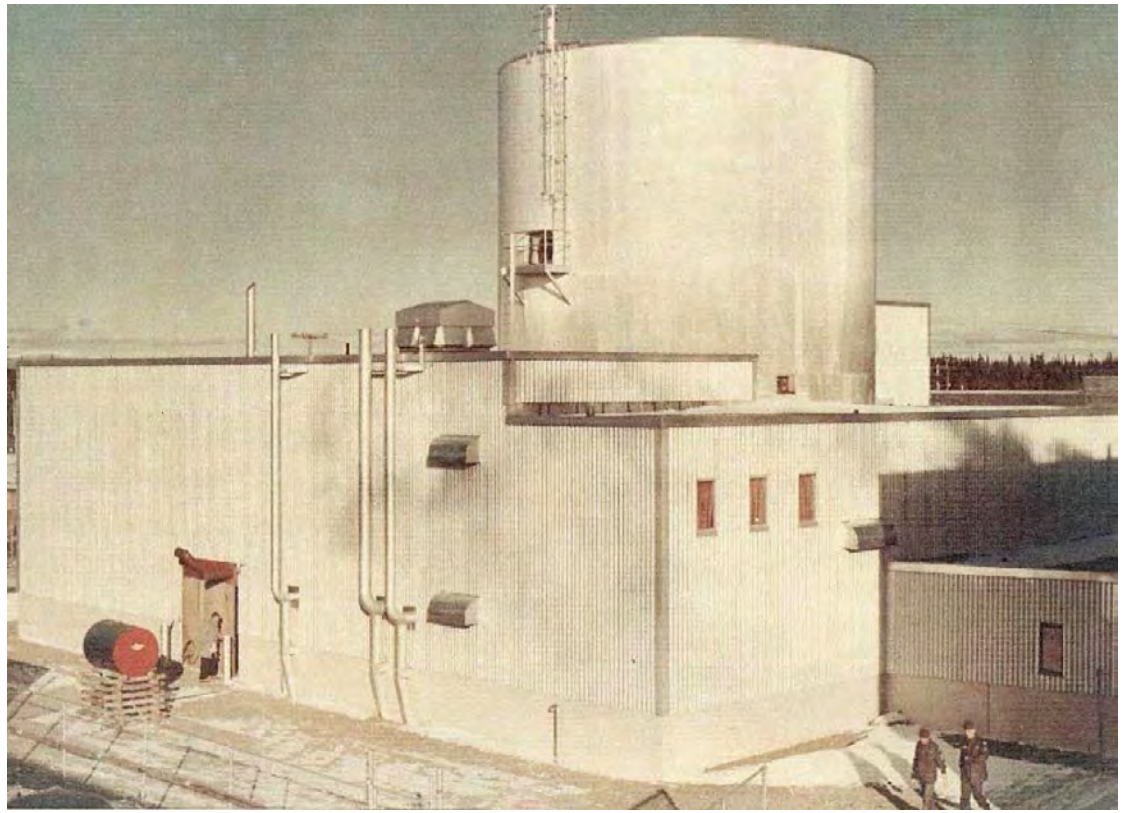
The Cultural Resources Technical Report addressed the following:

- Determination of Eligibility for the SM-1A Reactor Facility
- Determination of Adverse effects to historic properties
- Low probability for archaeological resources in the project area

NATIONAL REGISTER ELIGIBILITY OF REACTOR FACILITY

USACE updated the determination of eligibility for the SM-1A Reactor Facility

- Determined Individually Eligible for the NRHP
- Prepared Alaska Heritage Resources Survey Site Form Update



[Pre-decisional information enclosed in this presentation]

ADVERSE EFFECTS TO HISTORIC PROPERTIES

- Demolition of SM-1A Reactor Facility
- Demolition of a contributing resource in the Fort Greely Historic District

Discussion Question:
Questions or feedback about Project effects to historic properties?

ARCHAEOLOGY

- Low probability for archaeological resources due to previous ground disturbance.
- Project will follow management practices and protocols for unanticipated discoveries consistent with **36 CFR § 800.13(b) and the 2020-2025 U.S. Army Garrison Alaska Integrated Cultural Resources Management Plan**.

MEMORANDUM OF AGREEMENT

- Consulting parties
- Status update
- Proposed Mitigation for Adverse Effects
  - Historic American Engineering Record (HAER)-like document
  - Oral history interviews
  - Commemorative plaque restoration
  - Historical marker

CLOSING SESSION: OPEN DISCUSSION

- Summary of Technical Sessions
- Decommissioning Planning Scope
- Key Deliverables
- USACE Resources and Federal Oversight
- Project Stakeholders
- Continued Stakeholder Engagement
- Open Discussion of Any Outstanding Issues or Items
- Closing Remarks

TECHNICAL SESSION 1

Decommissioning Planning

Summary

- Planning documents will be finalized in 2021
- Decommissioning permit issued by the ARO
- Decommissioning expected to begin in 2023
- Standard process for releasing a significant amount of building materials for recycle or in-state disposal
- Decommissioning will impact Buildings 606 North, Building 607 (J-5), the areas around the buildings, the parking area north of Building 606, a separate waste staging area, and Wells 11, 12, and 13
- Conducted in compliance with Fort Greely and ADEC permits, Army and USEPA regulations, and NRC guidance

[Pre-decisional information enclosed in this presentation]

TECHNICAL SESSION 2

Waste Management Planning and Transportation

Summary

- Non-radioactive, non-regulated solid waste, and asbestos waste can be disposed in Alaska
- Radioactive, mixed, RCRA and PCB waste must be shipped to the Lower 48
- Route to Lower 48 disposal sites considered most likely is:
  - Truck to Fairbanks
  - Rail to Anchorage or Whittier
  - Vessel to Seattle
  - Rail or truck to disposal sites

TECHNICAL SESSION 3

National Environmental Policy Act (NEPA)

Summary

- The EA is being prepared in compliance with NEPA to inform the public and decision makers of the Proposed Action's potential impacts on a range of environmental resources.
- The EA will identify BMPs and other applicable measures to minimize potential adverse impacts.
- The Draft EA will be available for public review and comment for at least 30 days.
- Public meetings for the Draft EA will be held in-person and virtually / online.
- Comments received on the Draft EA will be addressed in the Final EA.
- Public participation in the SM-1A NEPA process is strongly encouraged.

[Pre-decisional information enclosed in this presentation]

TECHNICAL SESSION

4

National Historic Preservation Act (NHPA)

Summary

- Consultation is proceeding in accordance with Section 106 of the NHPA.
- USACE submitted a Cultural Resources Technical Report to Alaska OHA/SHPO in December 2020.
- USACE determined that SM-1A is eligible for the NRHP and the Project will have an adverse effect on Historic Properties.
- The Project area has a low probability for archaeological resources.
- USACE is preparing an MOA with consulting parties to mitigate adverse effects to historic properties.

[Pre-decisional information enclosed in this presentation]

SM-1A DECOMMISSIONING PLANNING SCOPE

- Review of historical documents associated with the All-Hazards Analysis
- Prepare planning documents that will support the Army Reactor Office issuing USACE a decommissioning permit for the SM-1A reactor
- Comply with other relevant Federal and State requirements that will support the long-term decommissioning planning
- Ensure adherence of project activities to NRC regulations as adopted by the Army
- Coordinate with appropriate federal, state, public, and tribal stakeholders to support issuance of decommissioning permit and compliance with NEPA requirements

SM-1A KEY DELIVERABLES

- Disposal Plan, Schedule and Cost Estimate
- Decommissioning Plan
- Waste Management and Disposal Plan
- Environmental Assessment
- Section 106 Effects Assessment and Memorandum of Agreement

[Pre-decisional information enclosed in this presentation]

USACE RESOURCES AND FEDERAL OVERSIGHT

Members of the project and oversight team include:

- Professional Engineers
- Certified Health Physicists (Radiation Safety)
- Certified Industrial Hygienists
- Environmental Scientists
- Regulatory Specialists
- Safety Specialists
- Qualified Technicians

- U.S. Army Corps of Engineers will provide quality assurance over the contractor and their quality control program
- U.S. Army Corps of Engineers National Environmental and Munitions Center of Expertise
- Army Reactor Office and Army Reactor Council
- Oak Ridge Associated Universities – Independent Review

PROJECT STAKEHOLDERS

[Pre-decisional information enclosed in this presentation]

CONTINUED STAKEHOLDER ENGAGEMENT

- The Army is committed to transparently sharing accurate information in a timely manner throughout this project and among all relevant stakeholders, making sure information is coordinated and concerns from stakeholders are quickly addressed.
- Multiple opportunities for public engagement are being incorporated into the decommissioning planning, including, in addition to this this meeting:
  - Public engagement as part of NEPA, as well as providing the public the opportunity to comment on the Draft EA once it is available for public review on February 26, 2021. Stakeholder engagement is ongoing, and stakeholders may comment and provide input throughout the duration of the NEPA process.
  - Ongoing Tribal consultation and outreach to Tribal stakeholders and consulting parties as part of the NEPA and NHPA processes. Participants may comment and provide input throughout the duration of the NEPA and NHPA processes.

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 e-mail list by e-mailing:
CENAB-CC@usace.army.mil

Stay engaged with us online:

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[Pre-decisional information enclosed in this presentation]