

STATE OF CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

In the Matter of:)	Docket No. HWCA-FY19/20-029
Santa Susana Field Laboratory)	
Simi Hills)	AMENDMENT TO ORDER ON CONSENT
Ventura County, California)	FOR INTERIM RESPONSE ACTION AT
)	THE RADIOACTIVE MATERIALS
CA3890090001 (North Wind Inc./DOE))	HANDLING FACILITY (RMHF) COMPLEX
CAD000629972 (North Wind Inc./DOE))	
)	
The United States Department of Energy)	Health and Safety Code Sections 25100
)	et seq., 25358.3(a), 25355.5(a)(1)(B),
(Respondent))	58009, 58010

On May 19, 2020, the California Department of Toxic Substances Control (DTSC) and the United States Department of Energy (DOE or "Respondent") (collectively, "the Parties"; individually, "Party") entered into an Order on Consent for Interim Response Action at the Radioactive Materials Handling Facility (RMHF) Complex, Docket No. HWCA-FY19/20-029 ("Order"). DTSC and DOE hereby enter into this Amendment to the Order (Amendment) to add the remaining eight DOE buildings in Area IV. All provisions of the Order apply unless otherwise noted below.

Section 1.2, Purpose, is amended to add:

1.2.1 This Amendment adds additional interim response action consisting of building demolition activities for eight additional buildings within Area IV of SSFL to be conducted by DOE under DTSC oversight. The disposal of the debris created by action under this Amendment will be consistent with the waste disposition alternatives established in the 2010 AOC Attachment B, "Final Agreement in Principle" (AIP), page 3. DOE will conduct building demolition activities under DTSC's oversight and will dispose of the resulting building demolition debris from buildings 4019, 4024, 4029, 4133, out of the State of California, at a licensed mixed low-level radioactive waste disposal facility, in accordance with the waste acceptance criteria (WAC) for the receiving facility, consistent with the waste disposition alternatives described in the AIP. Debris from buildings 4038, 4057, 4462, and 4463 will be disposed of out of the State of California and out of an abundance of caution, at an authorized mixed low-level radioactive waste disposal facility (in accordance with the WAC of the receiving facility), such as the facility where waste associated with pre-demolition activities for these buildings were disposed. The purpose of this Amendment is to define and make more specific DOE's obligations with respect to interim remedies in the remaining DOE buildings in Area IV necessitated by previously unanticipated emergency fire, erosion risk, and structural integrity concerns associated with several buildings as identified below.

Section 1.3, RMHF Complex, is amended to add:

1.3.1 Area IV. This Amendment applies to the demolition and removal of above-ground portions of eight additional (DOE-owned) buildings remaining in Area IV at SSFL, specifically, Buildings 4029 and 4133 (the Hazardous Waste Management Facility (HWMF) operated under a Resource Conservation and Recovery Act (RCRA) Part B Permit), Systems for Nuclear Auxiliary Power (SNAP) Buildings 4019 and 4024, the Sodium Pump Test Structures Buildings 4462 and 4463, the Energy Technology Engineering Center (ETEC) Office Building 4038, and the Sodium Test Rig Facility Building 4057. Collectively these buildings are hereafter referred to as “the remaining DOE Area IV buildings.” These buildings are grouped and discussed separately as the two RCRA Permitted buildings (4029 and 4133) and the other six remaining Area IV buildings (4019, 4024, 4038, 4057, 4462, and 4463). Area IV is in the western portion of SSFL and is 290 acres in size. It was used in the mid-1950s for energy (including the testing of nuclear power concepts) and liquid metals research. Nuclear energy research ended in 1982 and liquid metals research ended in 2000. With the end of each program, DOE began the process of decommissioning and demolishing buildings and conducting soil and groundwater characterization. Of the more than 200 structures that once supported DOE’s research, only eight DOE-owned buildings remain in addition to the demolition of ten planned or completed this year that were the subject of the Order. A comprehensive history of Area IV can be found in the DOE Final Environmental Impact Statement for Remediation of Area IV and the Northern Buffer Zone (DOE December 2018). Maps and figures showing the locations of the remaining DOE Area IV buildings are attached as Exhibits A-1, B-1, and C-1. More extensive site history of the activities performed within Area IV can be found on [Envirostor SSFL Area IV Corrective Action database](#).

Section 2.1, Permitting Status, is amended to add:

2.1.1 Area IV HWMF Permitting Status. As identified in Section 1.3.1, two of the remaining buildings comprise the HWMF. DOE is the owner of the HWMF, of which two buildings were authorized under RCRA Part B by DTSC in 1993 for the operation of liquid metal storage and treatment. The RCRA Part B permitted buildings include:

- Building 4029 (also known as Building T029) – Reactive Metals Storage Yard – Constructed in 1959 and originally used as a radiation instrument calibration facility, it was permitted in 1993 for the storage of materials impacted by alkaline metals (primarily sodium and potassium) prior to treatment in Building 4133. It is currently inactive.

- Building 4133 (also known as Building T133) –Hazardous Waste Treatment Facility – Building 4133 was moved to its current location in 1977 for the treatment (removal) of alkaline metals from metal objects using steam. It is currently inactive.

Pursuant to the 2007 Consent Order for Corrective Action, Building 4133 is referred to as Solid Waste Management Unit (SWMU) 7.2 and Building 4029 is referred to as SWMU 7.11.

The remaining six non-RCRA permitted and DOE-owned buildings within Area IV include:

- Building 4019 – Systems for Nuclear Auxiliary Power (SNAP) Criticality Test Facility – Constructed in 1962 for criticality acceptance tests of SNAP reactors before delivery for launch.
- Building 4024 – SNAP Reactor Environmental Test Facility – Constructed in 1960 for testing of four SNAP reactors in a vacuum, designed to simulate conditions of space.
- Building 4038 – ETEC Office Building – Constructed in 1963 and housed ETEC management staff, files, and documents.
- Building 4057 – Sodium Test Rig Facility – Constructed in 1963 and originally used for the testing of liquid sodium properties using two test rigs.
- Building 4462 – Sodium Pump Test Facility (SPTF) – Constructed in 1972 and was used as a component test facility investigating properties of large reactor pumps before installation in a radiological environment.
- Building 4463 – SPTF Pump and Mechanical Part Cleaning Facility – Constructed in 1974 and used to assemble, disassemble and clean pumps tested at the SPTF.

Section 2.2, Radioactive Material, Hazardous Waste, Hazardous Waste Constituents and Hazardous Substances (i.e., Hazardous Substances) Found at the RMHF, is amended to add:

2.2.1 Radioactive Material, Hazardous Waste, and Hazardous Substances Found at the Remaining DOE Area IV Buildings. Buildings 4019, 4024, 4029, and 4133 have a history of radiological use. Buildings 4462 and 4463 also include some residual asbestos containing materials and universal wastes (e.g., light bulbs/tubes and oil). Each of the remaining DOE Area IV buildings may have some minor residual amounts of hazardous waste. Demolishing and removal of the buildings would eliminate any threat to human health and the environment posed by residual contamination located in the above ground portions of the buildings, particularly the threat from a wildfire.

Section 2.3, Exigent Circumstances, is amended to add:

2.3.1 Exigent Circumstances at the remaining DOE Area IV buildings. Out of an abundance of caution, the Parties agree that response action is necessary to protect public health and the environment from potential exposures to radioactive and hazardous substances identified in Section 2.2.1 of the Order, and is necessary to abate radioactive and hazardous substances, and physical hazards from the remaining DOE Area IV buildings, as indicated above.

In addition, Building 4462 was partially demolished in 2007 and that demolition activity has left the building structurally unsound. The high winds experienced during Santa Ana wind conditions have the potential for loosening and freeing metals sheeting from the roof and sides of the building, and may put site workers at risk from falling debris. The completion of demolition of the building will mitigate this risk.

Section 3.2, There could be a "release", is amended to add:

3.2.1 There could be a "release" at the remaining DOE Area IV buildings (including the two buildings at the HWMF).

Section 4.1, Disposal, is amended to add:

4.1.1 Disposal of the remaining DOE Area IV buildings. DOE will conduct building demolition activities under DTSCs' oversight and will dispose of the resulting building demolition debris for buildings 4019, 4024, 4029, 4133, out of the State of California, at a licensed mixed low-level radioactive waste disposal facility, in accordance with waste acceptance criteria (WAC) of the receiving facility, consistent with the waste disposition alternatives described in the AOC Final AIP. Debris from buildings 4038, 4057, 4462, and 4463 will be disposed of out of the State of California, and out of an abundance of caution, at an authorized mixed low-level radioactive waste disposal facility, in accordance with the WAC of the receiving facility, consistent with the waste disposition alternatives established in the AOC Final AIP, such as the facility where waste associated with the pre-demolition activities for these buildings were disposed. This will be done in a manner that is protective of human health and the environment.

Section 4.3, Response Action Sequencing and RCRA Closure, is amended to add:

4.3.1 Response Action Sequencing and RCRA Closure for Area IV. Of the eight remaining DOE Area IV buildings, two of these buildings have a RCRA permit in place.

- a) For RCRA Part B Facilities undergoing closure (Buildings 4029 and 4133), such closure shall be conducted in accordance with a DTSC-approved HWMF RCRA facility Closure Plan, an HWMF building Demolition Plan, and a HWMF Standard Operating Procedure (SOP), and shall achieve RCRA Closure Performance Standards by demonstrating that hazardous

substances have been removed or are left in place at levels that are protective of public health and the environment, so that future characterization and remedial activities associated with the soil and groundwater programs can be performed. Demolition and disposition of waste will be in accordance with requirements for demolition and disposition of waste as contained in this Amendment, which is consistent with the alternatives described in the AIP. All HWMF, and Building 4019 and Building 4024 debris and waste will be disposed of out of the State of California, at a licensed mixed low-level radioactive waste disposal facility, in accordance with the WAC of the receiving facility.

- b) Demolition of the remaining six DOE Area IV buildings and ancillary structures and management and offsite disposal of the waste shall be conducted in a manner that is protective of human health and the environment. For the remaining six buildings, demolition and disposal shall be undertaken in accordance with this Amendment, and such closure shall be conducted in accordance with a DTSC-approved Combined Demolition Plan and SOP specific to the six buildings. The Combined Demolition Plan and SOP will demonstrate that hazardous substances have been removed or are left in place at levels that are protective of public health and the environment, so that future characterization and remedial activities associated with the soil and groundwater programs can be performed. Demolition and disposition of waste will be conducted in accordance with the requirements contained in this Amendment, which is consistent with the alternatives described in the AIP. All Building 4019 and Building 4024 debris and waste will be disposed of out of the State of California, at a licensed mixed low-level radioactive waste disposal facility. Disposal of debris and waste from the four remaining buildings (4038, 4057, 4462, and 4463) that have no radiological function or history of radiological usage will be disposed out of the State of California and out of an abundance of caution, at an authorized mixed low-level radioactive waste disposal facility (in accordance with the WAC of the receiving facility). Hazardous waste associated with pre-demolition activities including asbestos abatement and deactivation associated with these remaining DOE Area IV buildings has been previously disposed of at a licensed or authorized mixed low-level radioactive waste disposal facility. Waste from demolition, as well as small quantities of hazardous waste that may remain in the buildings will be disposed of in the same manner.
- c) Above-grade structures will be removed to a condition of slab-on-grade where the above-grade portions of the structures are removed but the slabs and the foundations are left in place to provide a barrier to the soil and/or subsurface structures. If the structures have below-grade structures, the below-grade structures, foundation and walls will be left in place. Asphalt and concrete surfaces at or below grade inside and adjacent to all buildings

will also be left in place. The demolition plans (one for the HWMF and the second one for the remaining six buildings) will include pre- and post-demolition inspections and will identify and appropriately address issues such as potential for water intrusion and fixed contamination remaining on a slab that is exposed to the weather. A suitable material to prevent water accumulation on the slab will be added after demolition. Additionally, all penetrations, vaults, and entries to basements will be sealed and protected to prevent water intrusion. Any slabs with excess ionizing radiation present following building demolition will have mitigation measures (e.g., shielding) implemented to ensure that the former building areas are left in a condition that is protective of human health and the environment. Either the SOP, the demolition plans, or the HWMF RCRA Closure Plan will discuss the steps that DOE will take through a combination of shielding and administrative/institutional controls (e.g., surveys, postings, and controlled access) to ensure that workers or members of the public do not receive exposures above background levels.

Section 4.4, Reports, is amended to add:

4.4.1 Reports for the Remaining DOE Area IV Buildings. DOE will demolish and remove above-grade structures to a condition of slab-on-grade for all remaining DOE Area IV structures as described in section 4.3.1. Building demolition and debris transportation shall be conducted in a manner that is protective of the local Area IV environment and populations along the transport route. Reports for implementing the following removal actions shall be submitted:

- a) The two buildings at the HWMF require DTSC approval of a RCRA Closure Plan (Buildings 4029 and 4133). In 2015, DOE submitted a draft "Closure Plan Hazardous Waste Management Facility Buildings T029 and T133 ETEC Santa Susana Field Laboratory, Area IV, Ventura County, California, Revision 0." (Referred to herein as the "2015 Draft Closure Plan.")
- b) In August 2016, DOE submitted a "Department of Energy Standard Operating Procedure for Demolition of Facilities in Area IV at the Santa Susana Field Laboratory, Revision C." The 2016 SOP was revised in 2020 for demolition of the ten RMHF buildings and was approved by DTSC on May 19, 2020. DOE will establish and submit HWMF-specific documents (HWMF SOP and HWMF Demolition Plan) to specifically address the two HWMF buildings. DOE will also establish a Combined Demolition Plan and SOP for the remaining six non-RCRA DOE Area IV buildings. DTSC will provide comments on the documents described above and approve them in a timely manner. The parties anticipate DTSC approval of the more narrowly tailored HWMF RCRA Closure Plan and the HWMF SOP and HWMF Demolition Plan within 10 days of the effective date of this Order. The parties anticipate DTSC approval of the Combined Demolition Plan and SOP for the remaining 6 DOE

Area IV buildings within 10 days after receipt of the draft document if DTSC comments have been appropriately addressed. Together, the HWMF Closure Plan, the HWMF SOP, the HWMF Demolition Plan, and the Combined Demolition Plan and SOP for the remaining six non-RCRA DOE Area IV buildings address the remaining eight buildings that were identified in the 2016 SOP and which are subject of this Amendment.

- c) The 2015 Draft Closure Plan and the 2016 SOP were made available for public review, which included DTSC-hosted public hearings, including public comment on August 30, 2018, and September 8, 2018. The DTSC public comment period occurred between August 13, 2018, and October 12, 2018. DTSC has reviewed the comments, developed responses, and provided the documents for DOE's use as an attachment to the Final HWMF RCRA Closure Plan.
- d) The disposal of the additional debris created by activities under this Amendment will be consistent with the waste disposition alternatives established in the 2010 AOC Attachment B, "Final Agreement in Principle" (AIP), page 3. DOE will conduct building demolition activities under DTSC oversight and will dispose of the resulting building demolition debris for buildings 4019, 4024, 4029, 4133, out of the State of California, at a licensed mixed low-level radioactive waste disposal facility, in accordance with the WAC for the receiving facility, consistent with the waste disposition alternatives described in the AIP. Debris from buildings 4038, 4057, 4462, and 4463 will be disposed of out of the State of California and out of an abundance of caution, at an authorized mixed low-level radioactive waste disposal facility (in accordance with the WAC of the receiving facility), such as the one where waste associated with pre-demolition activities for these buildings were disposed. Upon final approval of the HWMF RCRA Closure Plan, HWMF Demolition Plan, and HWMF SOP; and after DTSC completes its review of DOE's Remaining Area IV (six buildings) Combined Demolition Plan and SOP, DOE may proceed with removal and disposal of the non-RCRA permitted facilities. DOE may not begin demolition of the RCRA-permitted facilities until the HWMF RCRA Closure Plan is approved.
- e) As part of the Area IV building and debris removal, DOE will prepare and submit the HWMF Demolition Plan and Remaining Area IV (six buildings) Combined Demolition Plan/SOP to DTSC. The demolition/disposal/SOP plans will describe processes associated with demolishing structures to slab-on-grade; steps taken to mitigate hazards associated with leaving slabs in place; a process for assessing building materials for the presence of hazardous materials and radionuclides; processes for collecting, handling, transporting, and disposing of debris containing hazardous materials; and the identification of the facilities receiving the materials. Building demolition will

be performed using standard mechanized equipment and transported using standard highway trucks.

- f) Pursuant to the Biological Opinion that was issued in August of 2018 by the United States Department of Fish and Wildlife, DOE will coordinate with the California Department of Fish and Wildlife and the United States Fish and Wildlife Service to ensure any demolition would avoid, minimize, or compensate for adverse effects on Federally-listed and proposed species and designated critical habitat. A Mitigation and Monitoring Plan shall be developed to reduce or avoid such impacts, as well as a consultation plan with applicable Tribes for purposes of ensuring appropriate Tribal monitoring and avoidance processes are established.
- g) For any deliverable that DOE submits to DTSC for review or approval, DTSC shall make every effort respond to DOE within 30 days unless otherwise specified in this Amendment.

Section 4.5, Calendar of Tasks and Schedules, is amended to add:

4.5.1 Calendar of Tasks and Schedules for the Remaining DOE Area IV buildings. DOE will provide a schedule to DTSC for the removal of the remaining DOE Area IV buildings at least five days prior to the start of demolition. DOE will provide an updated schedule to DTSC monthly thereafter.

Section 4.8, California Environmental Quality Act (CEQA), is amended to add:

4.8.1 In issuing this Amendment, DTSC complied with CEQA with respect to the remaining DOE Area IV buildings demolition and debris removal.

Section 4.9, One-Year Review, is amended to add:

4.9.1 One-Year Review for the Remaining DOE Area IV Buildings. DOE shall review and reevaluate the building demolition site conditions after a period of one year from the completion of demolition, consistent with its oversight identified in this Order. An annual summary of findings shall be submitted for the annual evaluation of the performance of the site restorative measures for the building demolition sites. The summary shall include a signed statement certifying that each unit has been fully decommissioned and has undergone interim site restoration in accordance with the approved closure plan (for the RCRA--permitted buildings) and approved SOP and associated demolition plans for all Area IV buildings. Since post-closure/post-demolition activities will be conducted at each site consisting of the implementation of the soil and groundwater programs, each site will be left in a safe configuration pending future soil and groundwater remediation.

Section 6.1, Modifications:


6.1.1 Modifications, is amended after "RMHF Complex" to read: However, and notwithstanding the mutual modification, DTSC reserves all rights to issue an

imminent and substantial endangerment order at the RMHF Complex or at the remaining DOE Area IV buildings at any time should it determine that such an order is reasonably necessary to protect the public or the environment.

Except as amended by this Amendment, all provisions of the Order shall remain in full force and effect.

This Amendment shall take effect upon the date when this Amendment is executed by both parties.

Date: 10/30/20 - By: 
Todd A. Shrader
Principal Deputy Assistant Secretary
for Environmental Management
United States Department of Energy

Date: 10/30/20 By: 
Grant Cope
Deputy Director
Site Mitigation and Restoration Program
Department of Toxic Substances Control