

DRAFT

**Department of Energy Standard Operating
Procedure for Demolition of Facilities in
Area IV at the Santa Susana Field
Laboratory**

September 2011

DRAFT

Table of Contents

1. Introduction and Background	1
2. Pre-Demolition	2
2.1 Documentation Review	2
2.2 Pre-Demolition Inspections	3
2.3 Pre-Demolition Planning	3
2.4 Radiological Surveys	4
2.5 Demolition Preparation and Abatement	4
3. Demolition Phase.....	7
3.1 Development of Statement of Work	7
3.2 Procurement and Acquisition	7
3.4 Field Oversight	9
4. Management of Demolition Materials and Waste Disposal	9
4.1 Waste Characterization	10
4.2 Radioactive Waste Management	11
4.3 Mixed Low Level Waste	13
4.4 Hazardous Waste	13
4.5 Non-Hazardous Waste	13
4.6 Recycling of Demolition Materials	14
4.7 Transportation of Waste	15
5. Post -Demolition Activities	16
5.1 Final Status Survey.....	16
5.2 Backfill Operations.....	16
5.3 Reporting.....	16
6. Generalized Demolition Project Schedule	17

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

1. Introduction and Background

The Department of Energy's (DOE) Office of Environmental Management (EM) is responsible for the safe remediation, restoration, and mitigation of DOE liability from past operations at the former Energy Technology Engineering Center (ETEC) site. The ETEC is located in Area IV of the Santa Susana Field Laboratory (SSFL). The ETEC conducted research for nuclear and energy development projects.

The DOE signed an Administrative Order on Consent (AOC) with the State of California (Department of Toxic Substances Control (DTSC)) in December 2010. The AOC defines the process for soil characterization, cleanup, and the end state for Area IV of the Santa Susana Field Laboratory (SSFL). This document describes the process/procedure that will be used to demolish the DOE structures in Area IV and to manage the disposal of materials generated by the removal of these structures. This process/procedure is a key element of the implementation plan for the AOC.

DOE's ETEC research and test activities have been terminated and all DOE buildings and structures in Area IV have been determined to be surplus to DOE's needs. Removal of these features provides the unique opportunity to inspect, screen, and or sample the soil directly beneath the facilities to comply with the AOC.

The demolition procedures that will be used to demolish DOE structures in Area IV of SSFL will involve:

- Pre-demolition Phase (Section 2)
- Demolition Phase (Section 3)
- Management of Demolition Materials and Waste Disposal (Section 4)
- Post Demolition Activities (Section 5)

A generalized schedule of demolition projects is presented in Section 6.

It should be noted that by implementing this procedure DOE is targeting removal of man-made structures associated with their former site operations. This program is not intended to include any soil removal action that might otherwise be considered site remediation and subject to the requirements of the AOC.

The purpose of this document is to provide a top level overview of the proposed process to be used for the demolition of remaining DOE facilities in Area IV. For each facility, a detailed workplan will be prepared, including maps, figures, a description of buildings and extent of removals, and the locations/results of pertinent waste characterization samples. The workplan will consider the radiological and chemical hazards before and during demolition. Activities will be conducted to minimize potential for spreading contamination during demolition. All demolition projects will be appropriately documented including a final report as described in Section 5.3.

The Department of Toxic Substances Control (DTSC) will be informed of demolition activities at least 30 days in advance of commencement of demolition operations for any demolition project. DTSC personnel are encouraged to visit the site to perform inspections and discuss the demolition schedule and project activities.

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

2. Pre-Demolition

Pre-demolition activities include the following:

- Documentation Review
- Pre-demolition Inspections
- Pre-demolition Planning
- Radiological Surveys
- Abatement

2.1 Documentation Review

During the document review phase of each demolition project an evaluation will be conducted of the potential hazards that may be encountered. Such hazards include potential exposure to contaminants that have been identified as a result of previous demolition activities in Area IV and throughout the site during the RFI process; and the presence of subsurface features by inspection of facility utility maps and conducting geophysical surveys. The activities presented below will be performed as applicable.

2.1.1 Historical information pertaining to activities, processes, and chemical and radiological use at the planned demolition project site will be obtained to the extent possible and reviewed to identify potential wastes and constituents of concern.

2.1.2 The review will focus on potential chemical/radiological residues and/or contamination that may be present on facility structural elements, floors, concrete/asphalt pavement, and pads, ceilings, and equipment.

2.1.3 An attempt will be made to determine the nature and extent of any chemical or radiological leaks and other releases.

2.1.4 Applicable analytical data that may be available from storm water discharge monitoring, groundwater monitoring, facility investigations, site surveys, past demolition projects, and remediation activities will be reviewed to identify potential demolition material impacts.

2.1.5 Facility drawings, maps, logs, photographs, etc. will be reviewed to identify tanks and pressure vessels with potential residual material.

2.1.6 National Historic Preservation Act (NHPA) Process

Demolition activities will be performed in accordance with the NHPA and in consultation with the State Historic Preservation Program Office (SHPPPO).

2.1.7 National Environmental Policy Act (NEPA)

Demolition activities will be performed to comply with NEPA.

2.1.8 Endangered Species Act (ESA)

Demolition activities will be performed to comply with the ESA and in consultation with the Federal Fish and Wildlife Service.

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

2.2 Pre-Demolition Inspections

During the inspections phase, physical inspections of demolition project sites will be conducted as needed to identify potential wastes and factors that may affect how those wastes are characterized. The results of the inspections will be used to develop waste management strategies that assure wastes are addressed in compliance with requirements and are handled as safely and efficiently as possible. Inspections will be carried out by site personnel and/or licensed contractors as required.

Depending upon the particular site features being demolished the following inspections may be performed:

- Asbestos and lead-based paint surveys
- Tank, pressure vessel, and equipment/infrastructure surveys
- General site safety and issues surveys (including equipment and infrastructure with potentially hazardous materials)
- Confined space surveys
- Concrete assessment surveys
- Energetics surveys
- Underground features surveys
- Electronic waste surveys
- Coolant, hydraulic oil, refrigerant, and other fluid surveys

Waste management strategies based on the outcomes of inspections that have been performed will be incorporated into the overall demolition project plan. If specific, non-routine features of concern are identified at the demolition project site, additional inspections may be conducted before a management strategy is developed.

Undocumented below grade, shallow depth man-made features, including storage tanks and buried liquid containment features (septic tanks, sumps, drains) will be located and investigated.

A pre-demolition investigation will take place. This investigation will include (1) the use of non-invasive underground investigation locating, marking and mapping services (2) the use of archival information investigation, and (3) the use of site based knowledge.

2.3 Pre-Demolition Planning

Pre-demolition planning activities include the following, as applicable:

2.3.1 Project Impact Evaluation Sheets will be required for work performed by contractors (example attached). These documents describe the tasks involved in the project, anticipated hazards, expected waste generation, and the health, safety, and environmental protection requirements that must be implemented. These documents undergo review and sign-off by Environment, Health, and Safety management and delegated subject matter experts.

2.3.2 Storm Water Pollution Prevention Plans (SWPPP) are developed for construction area's that are greater than one acre in size as required by the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated With

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

Construction Activity (General Permit) Water Quality Order 99-08 DWQ. The SWPPP Notice of Intent (NOI) is filed with the State Water Quality Control Board.

SWPPP's include appropriate Best Management Practices (BMP's) to address sediment runoff. BMP measures may include, when required:

- Erosion control fiber rolls (wattles) and silt fences that are maintained throughout demolition activities.
- Constant evaluation of the post demolition landscape for sediment runoff.
- Implementation and maintenance of final measures for long term control during site restoration. Hydroseed or Hydromulch is sprayed over the entire worksite to control storm water runoff and provide dust control, as it stimulates vegetation growth.

A Notice of Termination (NOT) for the SWPPP is submitted to the state water board once the area has regained 70% of its vegetation or when appropriate BMP measures as discussed have been implemented.

2.4 Radiological Surveys

Screening of buildings for radioactivity prior to demolition is a DTSC requirement. Surveys for any buildings/structures that have not yet been screened for radioactivity will be performed by CDM prior to demolition. Refer to RADIOLOGICAL SURVEY PLAN FOR BUILDINGS WITHIN AREA IV OF THE SANTA SUSANA FIELD LABORATORY, prepared by CDM.

- The survey plan describes the instrument measurements, collection of samples and analyses to be performed for the radiological Constituents of Potential Concern (COPCs) that have been determined to be present in Area IV of the SSFL.
- The building surface and volumetric data will be used to evaluate the risks of building demolition and debris transport.
- The survey results will be used to determine if any building debris requires management as radioactive waste in accordance with Section 4.2 below.

2.5 Demolition Preparation and Abatement

Demolition preparation activities are performed prior to commencement of demolition, as needed. Radiological buildings will be demolished and debris will be managed as low level radiological waste. Demolition preparation activities include furniture, office equipment, and removal of liquids from equipment. These materials will be screened for radioactivity prior to recycling or disposal. All non-radiological buildings and structures in Area IV will be screened for radiological contamination prior to demolition.

The following activities will be performed prior to commencement of demolition, as needed:

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

2.5.1 Tank and Pressure Vessel Draining, Purging, and Disposition

The contents of tanks and pressure vessels located at demolition sites will be evacuated through depletion, transfer to other storage, or venting as applicable. With the exception of those designated for continued use that may be damaged by atmospheric exposure, tanks and vessels will be left open to the atmosphere once the contents have been evacuated.

Any water generated from demolition activities will be contained, characterized, and managed appropriately.

Tanks that have held hazardous materials or wastes, and which are designated for disposal or recycling as scrap metal, will only be rinsed or otherwise cleaned in compliance with Section 67383.3 in Title 22 of the California Code of Regulations.

Transportation of tanks and vessels off-site will be accomplished in compliance with Title 49 of the Code of Federal Regulations.

2.5.2 Removal of Potentially Hazardous Materials from Facility Lines and Equipment

Piping, tubing, compressors, pumps, hoists, and other equipment with refrigerants, oil or hydraulic fluid will be drained by a licensed contractor, if necessary, until no additional material can be removed. The contents will be captured, characterized, and transported as appropriate to a disposal or recycling facility.

Lines and equipment that have held hazardous materials or hazardous wastes, and which are designated for disposal or recycling as scrap, will be managed as required by Title 22 of the California Code of Regulations during demolition, and will not be rinsed or otherwise cleaned beyond gravity draining, physical scraping, wiping, pigging, etc.

2.5.3 Removal of Equipment, Appliances, and Fixtures

Prior to demolition, affected buildings and surrounding areas will be emptied of removable equipment and other non-fixed, unattached, or removable items that may present safety and/or waste management issues.

Lamps, ballasts, switches, mercury containing articles, and other items that are Universal Wastes or which may be otherwise hazardous will be removed, segregated and containerized as required, and transported to an appropriate recycling or disposal facility. Examples of these items include:

- Fluorescent tubes and other lamps
- Lamp ballasts/capacitors
- Thermostats
- Batteries
- Fire alarms
- Electronic switching equipment
- Pressure measurement instruments
- Other potentially regulated items

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

2.5.4 Loose Paint Abatement

Paint on buildings and equipment is assumed to be lead-based, unless evidence is available demonstrating otherwise.

Buildings and structures with areas of peeling or flaking paint large enough to impact demolition waste characterization will either undergo lead paint abatement or the subsequent demolition waste will be managed as hazardous waste.

When lead abatement is performed, the removed material will be collected, containerized and managed as hazardous waste.

If significant amounts of paint are dislodged during demolition activities, this, too, will be collected and managed as hazardous waste.

2.5.5 Asbestos Abatement

When non-friable or friable asbestos is detected during the asbestos survey, a licensed asbestos abatement contractor will be employed to remove the asbestos. This may include:

- Floor tiles
- Caulking and mastic
- Pipe insulation
- Counter tops
- Building siding
- Oven insulation

Management and disposal of each type of asbestos waste is carried out as required by regulations.

2.5.6 Removal of Potentially Hazardous Surface Deposits and Residues

During the pre-demolition surveys, trash and debris, deposits of potentially hazardous materials, and potentially hazardous residues of various kinds may be observed. These materials may be removed prior to demolition if the impact on waste characterization of the underlying material is significantly ameliorated, or the entire mass, including material and deposit/residue, will be characterized as whole to determine whether it is hazardous waste or not.

No sifting or invasive separation methods will occur in debris piles intermixed with soil, to ensure that soil conditions will not be disturbed without DTSC concurrence. Only visible debris or trash will be removed from piles.

Only physical/mechanical removal methods will be employed to remove deposits and residues. These methods may include:

- HEPA vacuuming potentially hazardous materials that are finely divided.
- Scraping and/or shoveling grease and other very viscous materials into containers.

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

- Spreading absorbents over oil and other low viscosity materials and picking up spent material with a shovel or broom and dust pan. Absorbents may be physically worked into deposits, residues, and stains before it is picked up.
- Wiping up low viscosity materials with rags, paper toweling, absorbent pads, etc.
- Cutting out sections that may be contaminated with hazardous materials and managing the sections separately from the mother material as suspect hazardous waste.

Potentially hazardous deposits and residues will not be rinsed or washed from materials that are to become wastes.

3. Demolition Phase

For each facility, a detailed workplan will be prepared, including maps, figures, a description of buildings and extent of removals, and the locations/results of pertinent waste characterization samples. The workplan will consider the radiological and chemical hazards before and during demolition. Activities will be conducted to minimize potential for spreading contamination during demolition.

3.1 Development of Statement of Work

For each demolition project a detailed Statement of Work (SOW) will be developed. The SOW will include a detailed description of structures to be demolished, expected waste streams and volumes, health and safety requirements, schedule, site restoration requirements, and waste management and disposal requirements. The end state for each demolition project will be clearly described in the SOW. The expected end state for all demolition projects is a stabilized site ready for transition to the soils investigation efforts outlined in the AOC (i.e., 2010 Consent Order).

3.2 Procurement and Acquisition

Qualified contractors will be invited to bid on specific demolition projects. Bid and contract documents will be based on the detailed SOW for each project. Contractor selection will be based on best value analysis, considering technical approach, safety record, cost, and schedule.

3.3 Demolition Operations

All demolition activities will be performed by utilizing qualified OSHA HAZWOPER and radiation trained (for demolition of radiological buildings) contractor personnel. Prior to commencement of demolition operations contractors will provide a demolition work plan, schedule of field activities, and health and safety plan, and waste management plan for all field work for review and approval by the site operator.

3.2.1 Mobilization

Contractor will mobilize and maintain sufficient labor, equipment, and support resources on-site to complete the SOW as defined in the schedule of field activities. Requirements for utilities, access, and contractor support services will be provided by the site operator will be included in

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

the SOW for each project. Contractor mobilization activities will be coordinated with the site operator.

3.2.2 Field Operations

Contractor will implement field activities in accordance with the technical approach described in the contract SOW and schedule of field activities. Contractor is responsible for implementing work in compliance with approved schedule of field activities, health and safety plan, and storm water pollution prevention plan.

Field operations will include, but not be limited to, the following measures:

- Contractor will supply sufficient field oversight to maintain worker safety, radiological protections and procedures, storm water controls, and efficient project implementation.
- Demolition will be conducted in a manner to minimize comingling of waste types.
- Demolition will be conducted to avoid disturbance of underlying soil.
- Materials such as stained concrete will be segregated for subsequent characterization and disposal.
- Generation of soil shall be minimized. If contaminated soil removal for offsite disposal is necessary as the result of site stabilization or worker safety concerns, soil will be containerized and DTSC will be consulted prior to removal.
- Demolition will be conducted to minimize comingling of waste types, handling of debris, and potential spread of contamination by size reducing, packaging, and shipping debris as they are generated. Stockpiling will be minimized.
 - Above-grade structures, concrete slabs, below-grade concrete vault foundations, and asphalt paving will be demolished by conventional means (with appropriate radiological controls for identified portions of radiologically contaminated facilities) and loaded into roll-offs or super-sacks as deemed most efficient by the subcontractor.
 - Below-grade concrete vault foundations from radiological facilities will be demolished by saw-cutting. The blocks will be removed, wrapped, and shipped to the determined waste disposition site. Alternatives to saw-cutting will be considered (if proposed by the contractors as a value engineering cost proposal). Any incidental debris generated through cutting or excavation will be packaged in roll-offs or super-sacks as deemed most cost efficient by the subcontractor.
- Below-grade vault removal may require soil excavation to provide access and maintain set-back requirements for safe excavation. The removed soils will be managed in accordance with the AOC requirements.

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

- In the event that an undocumented (i.e. not identified or discovered previously) underground storage tank (UST) or other liquid containment, conveyance, or discharge feature is discovered during actual demolition activities work, demolition work in the vicinity of the discovered feature will cease immediately. DOE will notify DTSC in writing (email or written) within 24 hours of the discovery. DOE will also inform all other applicable agencies as required. The discovery will remain undisturbed until an appropriate investigation has been performed and an appropriate course of action is developed and shared with DTSC.
- DTSC will be notified of observations relevant to the ongoing soil investigation and remediation efforts, such as the presence of unusual soil conditions or staining.

3.2.3 Dust control and dust protection measures are employed when the generation of dust resulting from demolition activities must be mitigated. The methods considered to mitigate airborne are presented below.

- Water sprays for dampening work areas during demolition activities.
- Water sprays for dampening un-mulched demolition areas during time periods when wind conditions creates dust as appropriate. If the forecast calls for windy evening conditions, water sprays will be used to dampen subject work areas just prior to the end of the work day.
- Truck bed covers to contain dust in loads being transported offsite.
- Hyromulch or Hydroseed (using native plant seeding), silt fencing, erosion control wattles, burlap / straw / jute blankets and netting in post-demolition areas to aid in permanent dust mitigation.
- Any water generated from demolition operations at radiological facilities will be evaporated using an onsite evaporation system.

3.4 Field Oversight

All field operations will be overseen by DOE, in consultation with the DTSC. DOE will have a Facility Representative overseeing day to day operations, including compliance with health and safety requirements. DOE will monitor project progress and provide overall direction. DTSC will have access to the site to monitor compliance with regulatory requirements and to evaluate potential impacts of demolition on the soil investigation.

4. Management of Demolition Materials and Waste Disposal

This section describes DOE's procedure for waste characterization, packaging, shipping, and disposal of wastes generated during building demolition. These activities will be conducted within the framework established by Local, State, and Federal regulations and overseen by DTSC. Demolition materials will be characterized and categorized as Low Level Radioactive Waste (LLW), Mixed Low Level Radiological Waste (MLLW), Hazardous Waste, Non-Hazardous Waste, or Recyclable Materials. All

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

non-radiological buildings and structures in Area IV will be screened for radiological contamination prior to demolition.

4.1 Waste Characterization

All demolition materials will be characterized as non-hazardous or hazardous wastes in accordance with EPA SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"; Title 40 of the Code of Federal Regulations; Title 22 of the California Code of Regulations; and Chapter 6.5 of Division 20 of the California Health and Safety Code.

4.1.1 Radiological Screening

Demolition materials will also be characterized as low level radioactive waste or non-radiological material. Building structures, equipment, and materials, including road base, will undergo a pre-demolition radiation screening following the procedures outlined in the CDM Radiological Survey Plan.

For each building element, if the pre-demolition screening detects no contamination exceeding regulatory limits, no further screening of post-demolition debris will be performed. If contamination is detected above regulatory limits, demolition will proceed in accordance with the requirements for LLW and MLLW presented below.

A waste certification package will be prepared that includes the survey results and certifies that the building debris/wastes can be disposed/recycled without further radiological controls.

4.1.2 Characterization Studies

Certain types of uniformly characteristic demolition wastes at SSFL warrant characterization studies of waste streams that apply to a larger population than a single demolition site. These studies yield results that may be generalized and may be used to supplement generator process knowledge with additional empirical data. Some examples of relevant characterization studies include:

- Stained and painted concrete floors and walls
- Utility poles
- Road base
- Concrete transformer pads

4.1.3 In-Situ Characterization of Demolition Wastes

Materials may be characterized before they become wastes, only when the boundaries of the area that will become waste are clearly identified, and when this will assist efforts to segregate non-hazardous from hazardous wastes or incompatible wastes during the demolition.

In situ characterization of intact materials that are subject to demolition will be based on definitive, documented generator process knowledge and/or a sampling plan that is developed in accordance with EPA SW-846 and provides State certified laboratory analytical results.

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

4.1.4 Characterization of Wastes in Containers

Demolition wastes that are contained in drums, cubic yard boxes, or roll-off bins will be characterized based on definitive, documented generator process knowledge and/or a sampling plan that is developed in accordance with EPA SW-846 and provides State certified laboratory analytical results.

If there is a possibility that the wastes in a container are hazardous, the container will be managed as hazardous waste until characterization results demonstrate the wastes are non-hazardous.

4.1.5 Characterization of Wastes in Trucks and/or Trailers

Wastes will be characterized before they are loaded into trucks and/or trailers for transport to off-site disposal facilities.

4.1.6 Generator Process Knowledge

As prescribed in Section 66262.11(b)(2) and (c)(2) in Title 22 of the California Code of Regulations, generator process knowledge is an important component of waste characterization and is employed in concert with waste sampling and analysis to determine whether the waste is hazardous or non-hazardous.

Generator process knowledge may be used in limiting the number of analytes that are included in laboratory analyses of samples collected from wastes. Documentation supporting generator process knowledge may include:

- Applicable analytical data that was obtained for other purposes such as RFI, remediation confirmation sampling, process monitoring, health and safety environmental monitoring, etc.
- Chemical usage inventories applicable to a specific area.
- Historical analytical data pertaining to specific waste types and the characteristics that are exhibited by the wastes.
- Waste characterization studies that apply to the waste streams in question

4.2 Radioactive Waste Management

The purpose of this section is to describe the requirements for the generation, characterization, storage, and disposal of low level radioactive waste (LLW) and mixed LLW (MLLW) associated with demolition activities. Management of all radioactive waste will be performed to comply with the DOE Order 435.1, Radioactive Waste Management. The purpose of this DOE order is to “ensure that all Department of Energy (DOE) radioactive waste is managed in a manner that is protective of worker and public health and safety, and the environment.”

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

The site restoration activities in Area IV will include D&D of former nuclear facilities, and result in the generation of radioactive waste. The waste management activities at the site will consist of storage, treatment, size reduction, characterization, certification, preparation for off-site disposal, and shipment.

The principal radioactive waste materials expected to be generated are contaminated concrete, contaminated metals, principally steel with small amounts of brass, copper, and aluminum, wood, filters (HEPA, pre and bag filters), and soft trash. The radioactive trash will be predominantly plastic sheeting used for contamination control, plastic shoe covers, latex rubber gloves, duct tape, and paper wipes. Other waste materials will include small hardware from the facilities, concrete rubble and blocks, soil, asphalt, gravel, and rocks removed from yard surface, driveways, and building foundations. In addition waste may include large pieces of equipment and/or machinery, such as compressors, motor generators, and transformers.

Waste shall be generated, characterized, and packaged per specific waste handling procedures that provide the requirements for loading the waste into containers, recording its description, and completing the waste inventory documentation. All operations shall be performed by trained personnel and in accordance with Safety and Quality Assurance requirements. Containers may be stored at the job site, or be placed in storage at a limited access storage area, pending shipment. Waste may be transferred to the RMHF for size reduction, additional characterization, and storage prior to shipment. (The RMHF is a Resource Conservation & Recovery Act (RCRA) permitted treatment and storage facility (TSF)).

The waste management program shall be based on detailed procedures for waste generation, characterization, packaging and shipping, and quality assurance verification. These procedures shall comply with DOE, DOT, EPA, California State, and the disposal sites' waste acceptance criteria (NNSWAC and Energy Solutions WAC, etc). Detailed procedures addressing sampling, characterization, packaging, and shipping will be developed by the contractor and submitted to the site operator for review and approval. These procedures will comply with the following requirements as appropriate:

1. DOE Order 435.1, "Radioactive Waste Management"
2. Code of Federal Regulations (CFR) Title 49 - "Transportation"
3. Code of Federal Regulations (CFR) Title 40 - "Environmental Protection Agency"
4. California Code of Regulations (CCR), Title 22, Sections 66260-66272
5. NNSWAC "Nevada National Security Site Waste Acceptance Criteria"
6. Energy Solutions WAC "Energy Solutions Waste Acceptance Criteria"

There will be no on-site disposal of radioactive waste. All of the generated radioactive waste shall be shipped to off-site disposal sites approved by DOE. Radioactive waste generated will be shipped to the DOE Nevada National Security Site (NNS) and/or the Energy Solutions site. MLLW (if generated) will be shipped primarily to Energy Solutions.

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

Non-radioactive waste generated at the site will be managed as described in Sections 4.4 and 4.5 for hazardous and non-hazardous waste respectively. Actual disposal site locations for all waste will be presented in the more detailed D&D plans for each facility.

4.3 Mixed Low Level Waste

Management of MLLW will include all of the requirements for LLW and in addition will comply with the requirements of Section 4.4, Hazardous Waste.

4.4 Hazardous Waste

Hazardous wastes will be managed in accordance with Title 40 of the Code of Federal Regulations, Title 22 of the California Code of Regulations, and Chapter 6.5 of Division 20 of the California Health and Safety Code. All hazardous wastes will be accumulated in closed containers (including lined roll-off bins), tanks, or lined trucks/trailers that prevent the release of any material. Wastes that are hazardous or potentially hazardous will not be managed using practices such as stockpiling, where the wastes are accumulated outside of lined and closed containers.

Whenever there is the possibility that wastes are hazardous, even if the hazardous nature of the wastes has not been verified, the wastes will be managed as though they are hazardous, until they are verified through characterization to be non-hazardous.

If it is necessary to combine compatible non-hazardous wastes with hazardous or unverified potentially hazardous wastes, the resulting mixture will be managed as hazardous waste regardless of the properties of the waste resulting from the mixture.

Segregation, waste compatibility, container labeling, accumulation times, and all other management requirements for hazardous wastes stated in local, state, and federal regulations identified above will be observed for all wastes as applicable.

Once roll-off bins containing hazardous wastes have been filled at the demolition site, they will be transported only to a staging area that has been designated for that purpose. In all cases, bins containing hazardous wastes will be transported for off-site disposal within the prescribed 90-day accumulation period as required by RCRA permit.

Like all containers of hazardous wastes, roll-off bins will be kept securely closed, except when wastes are actually being transferred into or out of them.

Hazardous wastes that comply with the requirements for Satellite Accumulation Areas as stated in State and Federal regulations may be maintained at the demolition site.

4.5 Non-Hazardous Waste

Demolition materials determined to be non-hazardous waste and non-radiological material will be stored, packaged, shipped, and disposed as solid waste in accordance with local, state, and federal regulations.

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

4.6 Recycling of Demolition Materials

Demolition materials will be recycled whenever possible and practical in compliance with Ventura County's Ordinance 4357 for construction/demolition debris. DTSC will be consulted prior to recycling of materials.

All recycling of demolition material is carried out in accordance with Chapter 6.5, Article 4 of Division 20 of the California Health and Safety Code and Chapters 11 and 16, Division 4.5 of Title 22 of the California Code of Regulations.

During demolition, recoverable metal will be segregated from other demolition wastes and transported to a metal recycling facility.

Tanks and pressure vessels will only be designated for recycling if they comply with the requirements of Section 67383.3 in Title 22 of the California Code of Requirements and they have been rendered non-functional.

Only non-hazardous concrete and asphalt will be designated for recycling. In compliance with Ventura County's Ordinance 4357, concrete and asphalt are designated for recycling whenever the material conforms to regulatory requirements, standard industry practices, and guidelines published by governmental agencies and trade organizations. Consistent with Ordinance 4357, Construction and Demolition Recycling plans and Reports will be provided to the controlling authority.

Concrete that exhibits heavy staining or deposits, or that has a history suggesting significant exposure potential to chemical constituents of concern, including contact with soils in locations where significant environmental impacts have been detected, will be investigated to verify that it is non-hazardous before it is considered for recycling. This may occur in-situ before demolition, or the section of concrete to be investigated further may be segregated and placed in a closed, lined container while characterization activities are in progress.

Concrete and asphalt waste that is determined to be non-hazardous may be transported off-site to a recycling facility or to a landfill that accepts Construction and Demolition (C&D) wastes.

Concrete and asphalt waste that is determined to be non-hazardous, but which has leachable constituents that may be detrimental to its use as a recycled product will be transported off-site to a landfill that accepts Construction and Demolition (C&D) wastes.

Concrete and asphalt waste that is determined to be hazardous, through analytical testing or through generator knowledge, will be managed as hazardous waste and transported off-site to a permitted facility.

Electronic and electrical items are segregated prior to and during demolition, as access and handling considerations allow.

- Potentially usable electronic devices may be separated from other electronic devices for processing by a reconditioning business.

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

- Electronic devices will be managed in accordance with regulations presented in Division 4.5, Chapter 23 of Title 22 of the California Code of Regulations and will be transported to a recycler.
- Recoverable wire will be collected when possible and practical and transported to a recycler.
- Punchboards, cable harnesses, and other electrical wastes that are not attached to electronic devices and that are hazardous for lead content will be managed as hazardous wastes.
- All oil-filled transformers will undergo verification for the presence of PCBs. Verification may consist of certification stamps, plates, or stickers on the transformer body. Verification may require oil sampling and laboratory analysis if PCB certification is not present on the transformer.
- Operational transformers may be saved or sold for reuse. Discarded, non-Polychlorinated Biphenyl (PCB) transformers may be transported to a recycler. Discarded transformers with above threshold concentrations of PCBs will be managed as hazardous waste in compliance with California hazardous waste regulations and Federal Toxic Substances Control Act regulations.

4.7 Transportation of Waste

Tractor-trailer traffic in and out of Santa Susana is controlled to cooperate with local homeowners adjacent to the site and along the access road, Woolsey Canyon Road. The requirements described in this section have been established for this purpose.

- The interval between incoming Tractor-Trailer arrivals to Santa Susana is controlled. Permit loads shall be coordinated with the assigned Boeing Field Coordinator 48-hours in advance of arrival. Drivers will leave sufficient space between vehicles to permit homeowners to enter or leave their properties.
- Drivers will use the turnouts along Woolsey Canyon Road to allow motorists to pass.
- Drivers of tractor-trailers departing Santa Susana shall follow the direction of the Field Coordinator to ensure that transportation plan requirements are met. In general, drivers shall not depart earlier than 7:00 am and not later than 4:00 pm, without specific concurrence from Boeing.
- Drivers shall cover all end dumps and roll off trucks containing debris (e.g. concrete, asphalt, metals) before leaving SSFL. Visual inspections of the surfaces of the tractor-trailers, including tires, will be performed. If caked mud/soil is observed, it will be removed prior to the vehicle departure.
- Departures for tractor-trailers shall be scheduled in such a manner that a ten-minute gap occurs between each vehicle leaving the site (unless a specific instruction is given indicating another interval). To minimize noise impacts, drivers shall not use "Jake-brakes," unless it is necessary. Drivers shall use the area outside the gate to check their brakes as needed, but will not wait for other drivers.

DRAFT - DOE Procedure for Demolition of Facilities in Area IV

September 2011

- Drivers shall not convoy through, or spend the night in, the adjacent neighborhoods.

5. Post -Demolition Activities

5.1 Final Status Survey

Final Status Surveys for building excavations will be performed by EPA upon completion of the building demolitions. Demolition projects will be managed and coordinated with EPA to minimize the time between completion of demolition and commencement of backfilling.

5.2 Backfill Operations

Backfill operations for excavations greater the 3 feet deep will commence following the EPA Final Status Survey and consultation with DTSC. Backfill will not be placed over soil determined to require excavation in order to comply with the AOC and DTSC's requirements for remediation. Excavations less than 3 feet deep will be re-graded using adjacent soils to restore site surface and ensure proper drainage.

The use of imported or relocated backfill material will be approved in advance by DTSC, and verified by sampling by EPA, in accordance with requirements of the AOC.

5.3 Reporting

A post-demolition summary report will be provided to the DTSC following the completion of each demolition project that includes completion of site restoration and waste disposal activities. This report will include post-demolition maps, field reports, screening and sample results, photographic documentation, and complete copies of the debris/waste documents for recycling and disposal.

DRAFT - DOE Procedure for Demolition of Facilities in Area IV
 September 2011

6. Generalized Demolition Project Schedule

The following schedule is typical for demolition projects. A detailed schedule for each project will be developed as part of workplan preparation.

Generalized Demolition Project Schedule		Months											
		1	2	3	4	5	6	7	8	9	10	11	12
TASKS													
1	Notice to Proceed	▲											
2	Pre-Demolition - Documentation Review - Inspections - Planning - Radiological Surveys - Abatement		■										
3	Demolition - Workplan and SOW - Procurement - Demolition Operations			■	■	■	■	■	■				
4	Management of Demolition Materials and Waste Disposal - Waste Characterization - LLW and MLLW - Hazardous and non-hazardous waste - Recyclable materials						■	■	■	■			
5	Post Demolition Activities - Final Status Survey (EPA) - Backfill operations - Post-demolition Summary Report									■	■	■	■