

River Corridor Closure Contract

300 Area D4 Project 2nd Quarter Fiscal Year 2006 Building Completion Report

June 2006

Washington Closure Hanford

Prepared for the U.S. Department of Energy, Richland Operations Office
Office of Assistant Manager for River Corridor



TRADEMARK DISCLAIMER

Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

This report has been reproduced from the best available copy. Available in paper copy and microfiche.

Available for a processing fee to U.S. Department of Energy and its contractors from:

U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831-0062
(865) 576-8401
fax: (865) 576-5728
email: reports@adonis.osti.gov
online ordering: <http://www.doe.gov/bridge>

Available for sale to the public, in paper, from:

U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
(800) 553-6847
fax: (703) 605.6900
email: orders@ntis.fedworld.gov
online ordering: <http://www.ntis.gov/ordering.htm>

Printed in the United States of America

DISCLM-5.CHP (11/99)

WCH-R & DC 6/20/06 DD

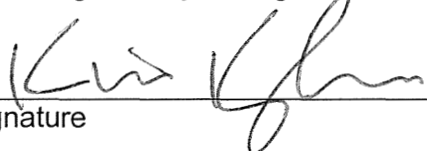
WCH-94
Rev. 0
OU: N/A
TSD: N/A
ERA: N/A

STANDARD APPROVAL PAGE

Title: 300 Area D4 Project 2nd Quarter Fiscal Year 2006 Building Completion Report

Author Name: David S. Smith, TRUTech LLC

Approval: Kim Koegler, Project Engineer



Signature

6/15/06

Date

The approval signature on this page indicates that this document has been authorized for information release to the public through appropriate channels. No other forms or signatures are required to document this information release.

**River Corridor
Closure Contract** 

**300 Area D4 Project 2nd Quarter
Fiscal Year 2006 Building
Completion Report**

June 2006

Author:

David S. Smith

Washington Closure Hanford

Prepared for the U.S. Department of Energy, Richland Operations Office
Office of Assistant Manager for River Corridor



TABLE OF CONTENTS

1.0	SCOPE	1
2.0	FACILITY DESCRIPTION AND CONDITIONS.....	1
2.1	303A, 303E, 303G BUILDINGS	1
2.2	303F BUILDING	3
2.3	303J BUILDING.....	4
2.4	303M URANIUM OXIDE FACILITY	5
2.5	304 URANIUM CONCRETION FACILITY AND 304A CHANGE ROOM.....	6
2.6	311TF TANK FARM.....	7
2.7	314 BUILDING.....	8
2.8	3707D INFORMATION SERVICES BUILDING.....	9
2.9	3712 BUILDING.....	10
2.10	3713 CARPENTER SHOP.....	11
2.11	3715 SPARE PARTS WAREHOUSE.....	12
2.12	3716 STORAGE BUILDING	13
2.13	3722 FABRICATION SHOP.....	14
3.0	PROJECT ACTIVITIES	15
3.1	ENGINEERING AND PERMITS	15
3.2	HAZARDOUS MATERIAL REMOVAL	16
3.3	UTILITY AND DRAIN ISOLATION.....	16
3.4	DEMOLITION OF ABOVE-GRADE STRUCTURES	16
3.5	BELOW-GRADE DEMOLITION.....	17
3.6	SITE RESTORATION.....	18
4.0	COST AND SCHEDULE	18
4.1	COST AND SCHEDULE.....	18
4.1.1	303A Building.....	19
4.1.2	303E Building.....	19
4.1.3	303F Building.....	19

4.1.4	303G Building	19
4.1.5	303J Building	20
4.1.6	303M Building	20
4.1.7	304 Building	20
4.1.8	304A Building	20
4.1.9	311TF Building	20
4.1.10	314 Building	21
4.1.11	3707D Building	21
4.1.12	3712 Building	21
4.1.13	3713 Building	21
4.1.14	3715 Building	21
4.1.15	3716 Building	22
4.1.16	3722 Building	22
5.0	RECYCLED MATERIAL AND WASTE DISPOSAL	22
5.1	WASTE DISPOSAL	22
6.0	OCCUPATIONAL EXPOSURES	23
6.1	PERSONNEL INJURIES	23
6.2	PERSONNEL RADIOLOGICAL EXPOSURES	23
6.3	OTHER INDUSTRIAL HAZARD EXPOSURES	24
7.0	REFERENCES.....	24

FIGURES

1.	303A Building.....	1
2.	303E Building.....	2
3.	303G Building.....	2
4.	303F Building.....	3
5.	303J Building.....	4
6.	303M Building.....	5
7.	304 Building (304A is attached to the left side).....	6
8.	311TF Tank Farm.....	7
9.	314 Building.....	8
10.	3707D Information Services Building.....	9
11.	3712 Building.....	10
12.	3713 Carpenter Shop.....	11
13.	3715 Spare House Warehouse.....	12
14.	3716 Storage Building.....	13
15.	3722 Fabrication Shop.....	14
16.	Former Site of the 314 Building.....	18

TABLES

1. Initial Hazard Categorization Evaluations and Results..... 15
2. Waste Transferred to ERDF..... 23

METRIC CONVERSION CHART

Into Metric Units			Out of Metric Units		
<i>If You Know</i>	<i>Multiply By</i>	<i>To Get</i>	<i>If You Know</i>	<i>Multiply By</i>	<i>To Get</i>
Length			Length		
inches	25.4	millimeters	millimeters	0.039	inches
inches	2.54	centimeters	centimeters	0.394	inches
feet	0.305	meters	meters	3.281	feet
yards	0.914	meters	meters	1.094	yards
miles	1.609	kilometers	kilometers	0.621	miles
Area			Area		
Sq. inches	6.452	sq. centimeters	sq. centimeters	0.155	sq. inches
sq. feet	0.093	sq. meters	sq. meters	10.76	sq. feet
sq. yards	0.836	sq. meters	sq. meters	1.196	sq. yards
sq. miles	2.6	sq. kilometers	sq. kilometers	0.4	sq. miles
acres	0.405	hectares	hectares	2.47	acres
Mass (weight)			Mass (weight)		
ounces	28.35	grams	grams	0.035	ounces
pounds	0.454	kilograms	kilograms	2.205	pounds
Ton	0.907	metric ton	metric ton	1.102	ton
Volume			Volume		
teaspoons	5	milliliters	milliliters	0.033	fluid ounces
tablespoons	15	milliliters	liters	2.1	pints
fluid ounces	30	milliliters	liters	1.057	quarts
cups	0.24	liters	liters	0.264	gallons
pints	0.47	liters	cubic meters	35.315	cubic feet
quarts	0.95	liters	cubic meters	1.308	cubic yards
gallons	3.8	liters			
cubic feet	0.028	cubic meters			
cubic yards	0.765	cubic meters			
Temperature			Temperature		
Fahrenheit	subtract 32, then multiply by 5/9	Celsius	Celsius	multiply by 9/5, then add 32	Fahrenheit
Radioactivity			Radioactivity		
picocuries	37	millibecquerel	millibecquerels	0.027	picocuries

1.0 SCOPE

This report documents the deactivation, decontamination, decommissioning, and demolition (D4) of 16 buildings in the 300 Area of the Hanford Site. The D4 of these facilities included characterization, engineering, removal of hazardous and radiologically contaminated materials, equipment removal, utility disconnection, deactivation, decontamination, demolition of the structure, and stabilization or removal of the remaining slab and foundation as appropriate.

2.0 FACILITY DESCRIPTION AND CONDITIONS

The 16 buildings detailed in the report were located in the 300 Area of the Hanford Site, which is owned and operated by the U.S. Department of Energy (DOE), in Benton County, Washington. The 300 Area was constructed and operated as a reactor fuel fabrication and laboratory complex.

2.1 303A, 303E, 303G BUILDINGS

The 303A, 303E, and 303G Buildings, built during World War II, were used to store fresh metal (unirradiated uranium) and chemicals, as well as uranium scrap (Figures 1 through 3). They are all the same size (120 m²/1,296 ft²). They are all constructed with concrete block walls, concrete foundation and floor slab, and a reinforced concrete roof.

Figure 1. 303A Building.

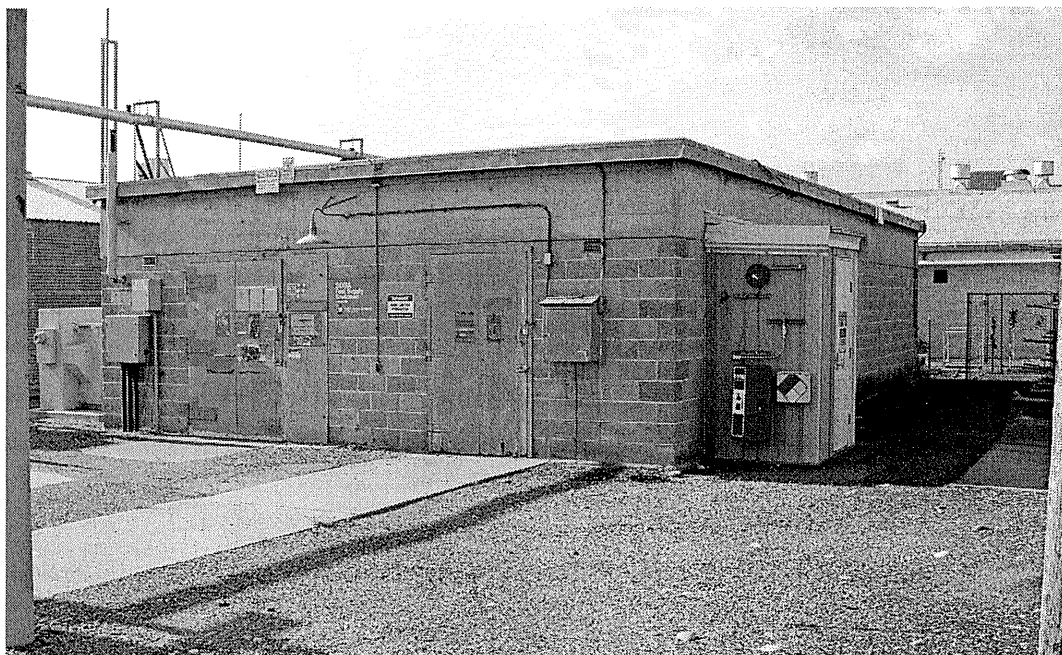
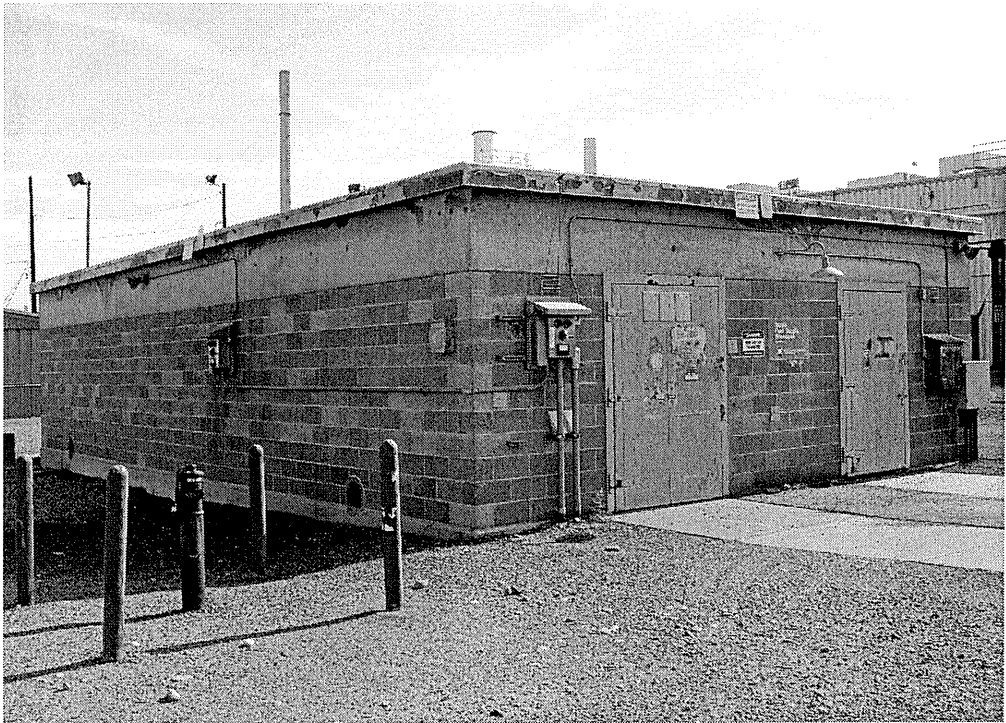


Figure 2. 303E Building.



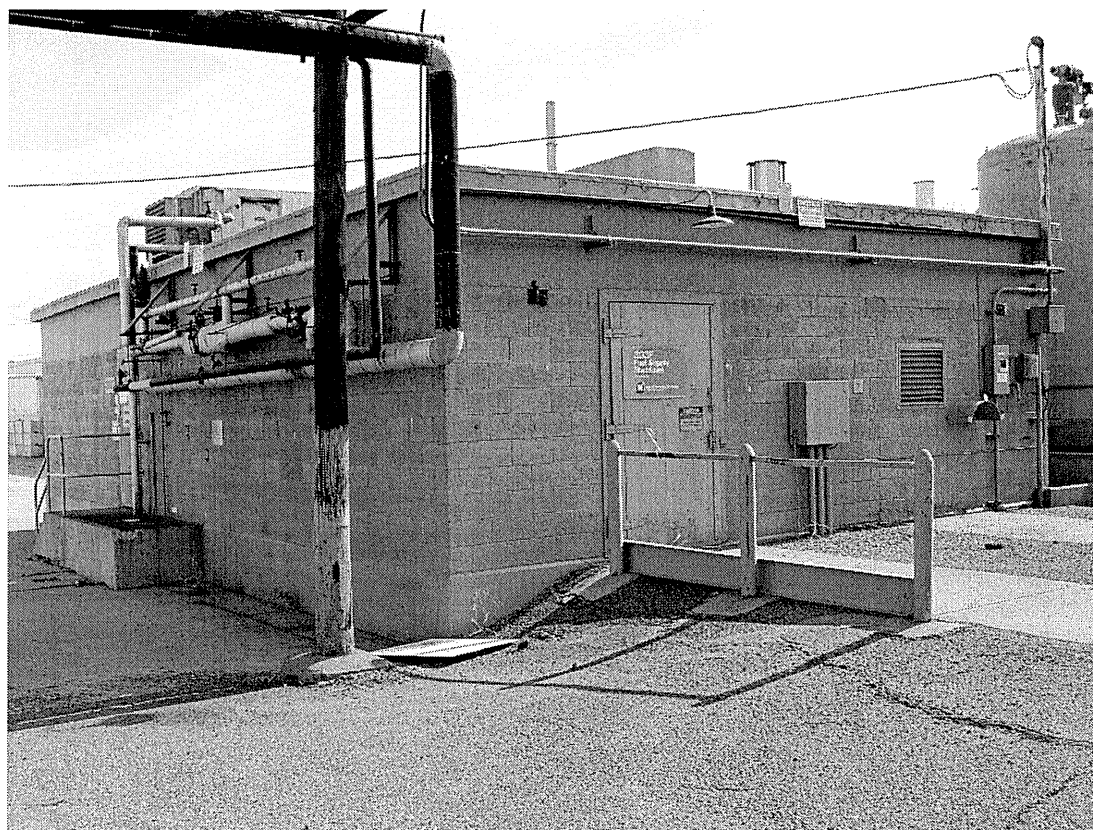
Figure 3. 303G Building.



2.2 303F BUILDING

The original purpose of the 303F Building was the storage of fresh metal (uranium billets), chemicals, and uranium scrap (Figure 4). The 120.4-m² (1,296-ft²) building was built during World War II and is constructed with concrete block walls, concrete foundation and floor slab, and a reinforced concrete roof. From 1954 to 1973, the building was used as a chemical makeup facility. From 1973 to 1999, the building was used as a pumphouse as part of the 300 Area Waste Acid Treatment System (WATS) *Resource Conservation and Recovery Act of 1976* (RCRA) treatment, storage, and disposal (TSD) unit.

Figure 4. 303F Building.



2.3 303J BUILDING

The 303J facility was a 339-m² (3,651-ft²) one-story wood frame structure built on a concrete foundation and floor slab (Figure 5). It was built in 1942 and 1943, and until 1954 was used as a pilot process test and fuel fabrication facility. Most recently it was used for storage and office space.

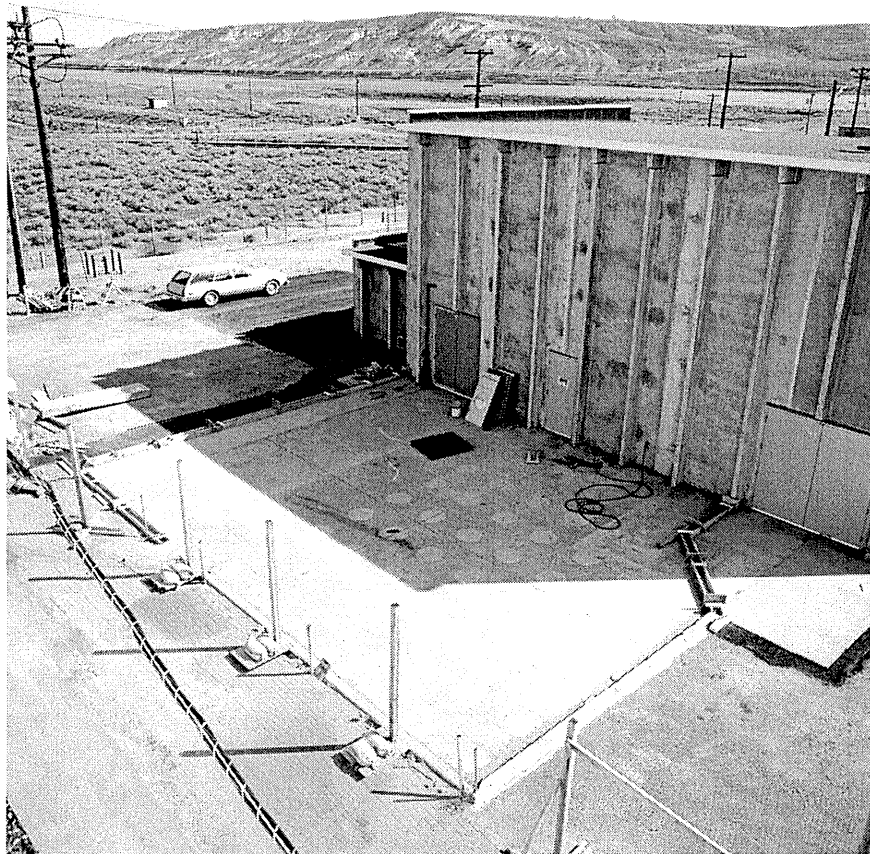
Figure 5. 303J Building.



2.4 303M URANIUM OXIDE FACILITY

The 303M Building was built in 1983 to house a facility for converting uranium metal chips and fines from the N Reactor fuel fabrication process into uranium oxide by calcination (burning). The 195-m² (2,095-ft²) facility had a concrete floor slab, pre-cast concrete wall panels, and a precast concrete slab roof with tar-and-gravel surface (Figure 6). Operations ceased in February 1987.

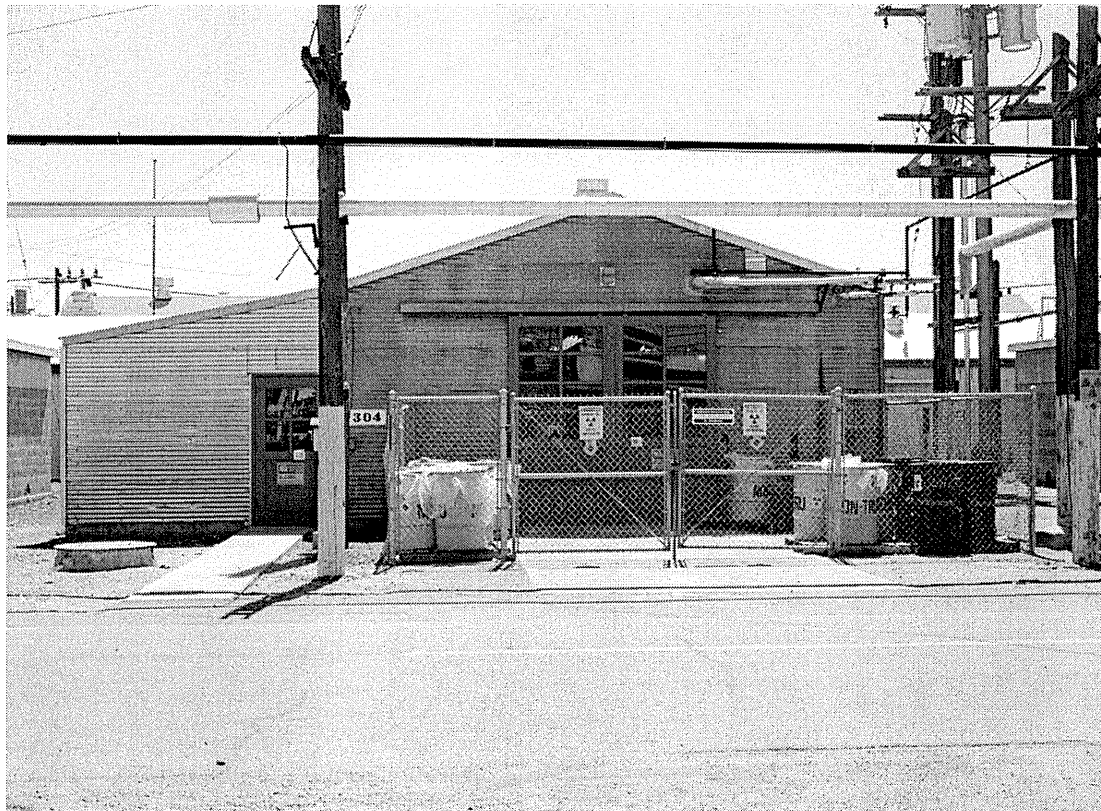
Figure 6. 303M Building.



2.5 304 URANIUM CONCRETION FACILITY AND 304A CHANGE ROOM

The 304 Building was built in 1952 and served as a pilot plant for testing new fuel fabrication processes known as "lead dip" and "hot die sizing" (Figure 7). This operation moved in 1962 to the 313 Building, and the 304 Building was used to store uranium scraps waiting for reclamation. The 122-m² (1,312-ft²) facility has been known as the Concretion Facility since 1971, at which time a process to solidify pyrophoric uranium scraps in a concrete matrix was initiated. Most recently, it was used for storage. It was a metal frame building with sheet metal siding. The 304A Building was a 18-m² (197-ft²) sheet metal change room added to the 304 Building on the east side.

Figure 7. 304 Building (304A is attached to the left side).



2.6 311TF TANK FARM

The original purpose of the 311TF Tank Farm Building was for chemical storage and to support methanol recovery operations in support of fuel fabrication (Figure 8). In 1973 it became part of the 300 WATS. The 311TF Building portion of the 300 Area WATS RCRA TSD unit was clean closed in 1999. The 84-m² (900-ft²) 311TF Tank Farm Building was built in 1954 and consisted of four aboveground chemical storage tanks, two below-ground methanol storage tanks, and the small methanol still house. The tanks were located inside a concrete containment curb or catch basin. One additional tank was built for use in the WATS program in 1985. The 311TF Building and the two below-ground methanol storage tanks were removed in 1989.

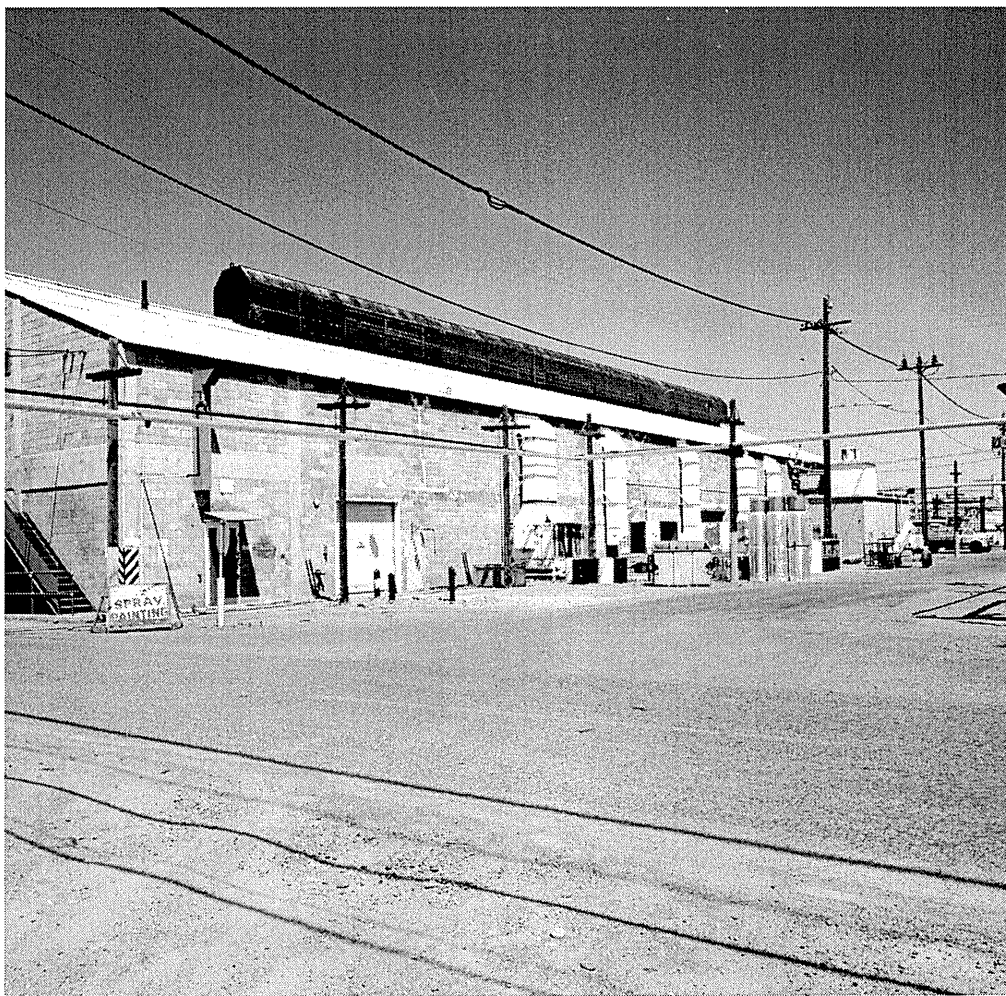
Figure 8. 311TF Tank Farm.



2.7 314 BUILDING

The 314 Building, referred to as the Press Building or the Metal Extrusion Building, originated as one of two primary fuel fabrication structures at the Hanford Site (Figure 9). It was a World War II-era structure that housed fuel element preparation activities from 1944 to 1971. Several additions have been constructed over the past years along the north side of the building. The 2,699-m² (29,092-ft²) 314 Building was modified in the 1970s and used by Pacific Northwest National Laboratory for a variety of research projects and crafts services.

Figure 9. 314 Building.



2.8 3707D INFORMATION SERVICES BUILDING

This facility was a single-story wood-framed office building (Figure 10). The 848-m² (9,127-ft²) 3707D facility has had at least three uses and configurations. The first configuration, from 1943 to about 1953, was as a 120-m² (1,296-ft²) fuel-storage facility, designated as 303-D. In 1953, the facility was expanded to about 23 m (76 ft) by 35m (115 ft), giving an enclosed space of about 790m² (8,505 ft²). The 303-D structure remained as the core of the building with additions on the east, west, and south. The new functions included a change building with lockers, showers, a lunch room, and offices. Finally, in 1971, the building was converted to a design center. The original 303-D portion of the building was referred to as the “tracing vault,” where drawings were stored. An external fire door was added to the vault. In this configuration, most of the areas were used as offices and rooms for drafting tables.

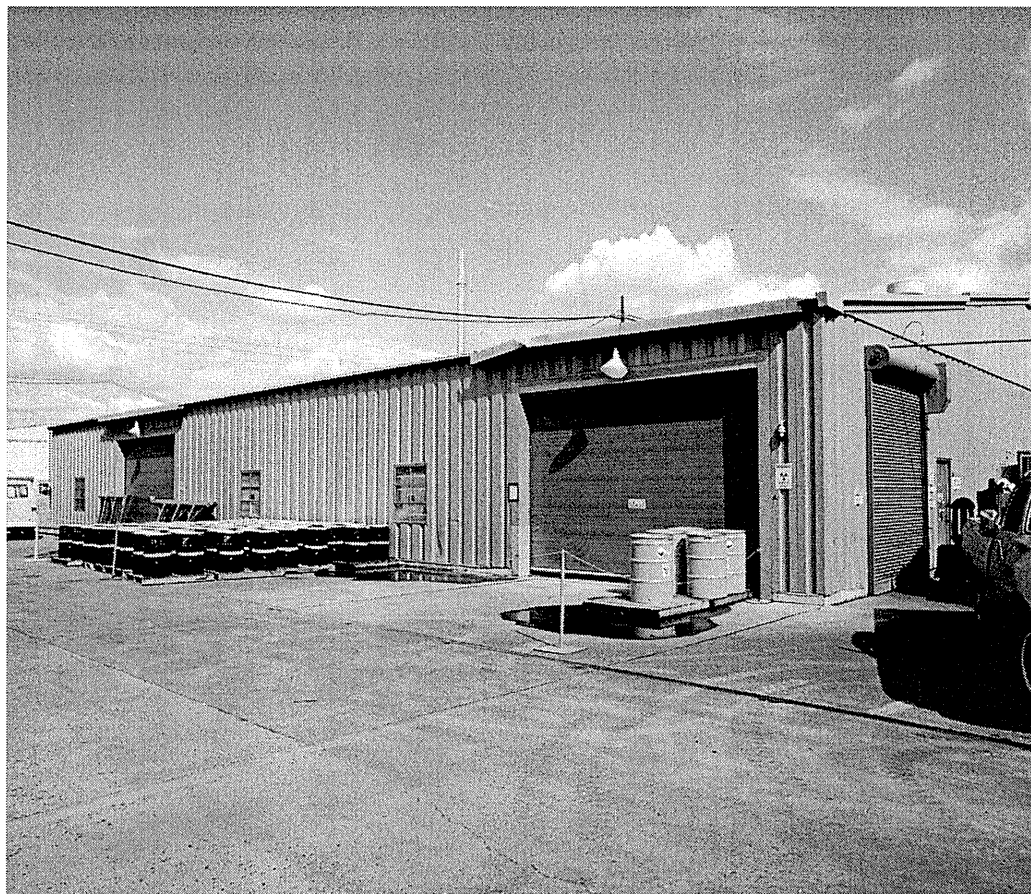
Figure 10. 3707D Information Services Building.



2.9 3712 BUILDING

The 3712 Building is a one-story steel frame structure on a concrete floor slab with metal panel walls and roof (Figure 11). It was used to store “green” (i.e., nonirradiated) fuel for N Reactor. The building was 903 m² (9,720 ft²) in area.

Figure 11. 3712 Building.



2.10 3713 CARPENTER SHOP

The original use for this facility was as a receiving storeroom (Figure 12). Later, it was converted into a carpenter shop. It is a 445-m² (4,800-ft²) one-story wooden frame building with concrete foundation walls with concrete spread footings, wooden beams, and interior wood posts.

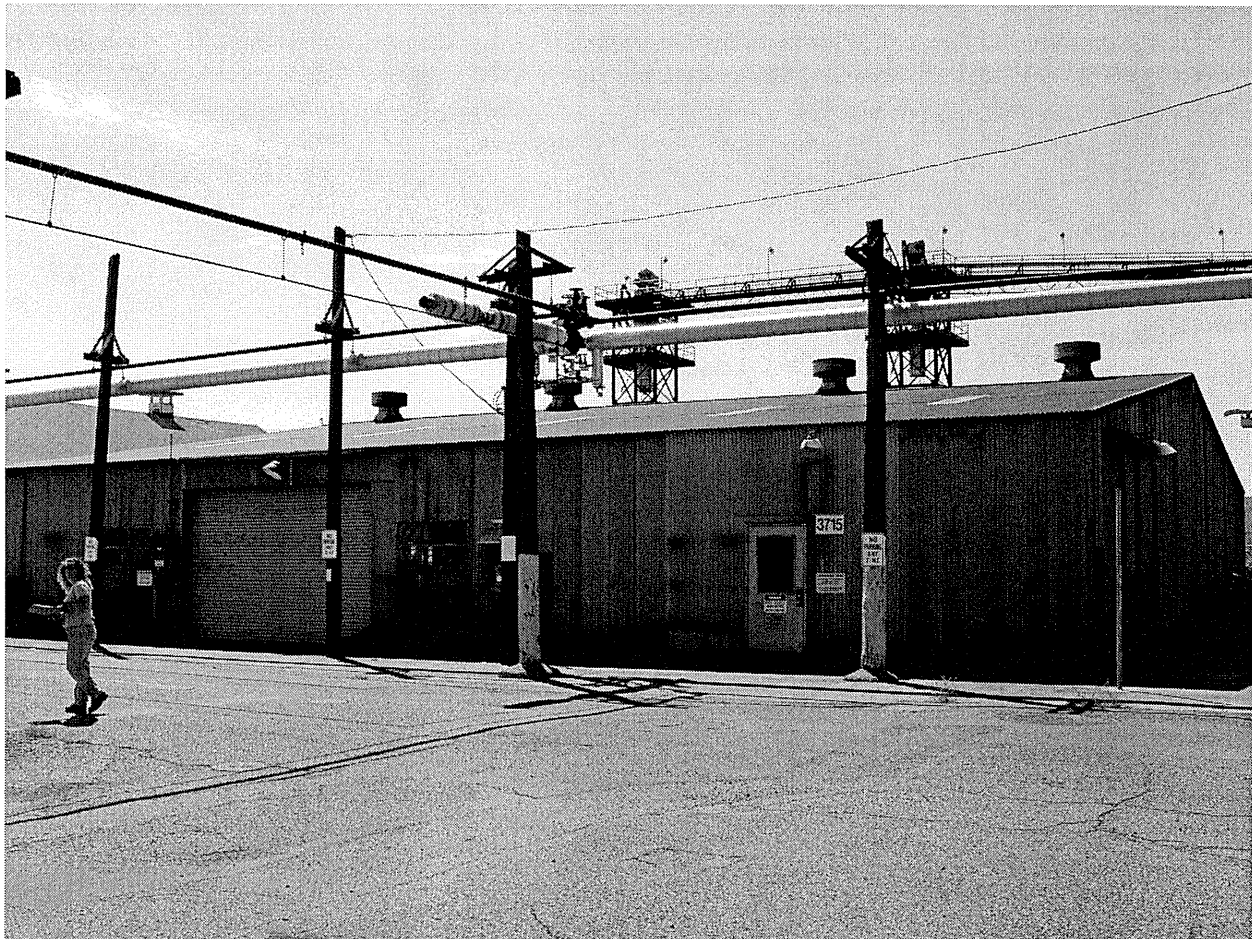
Figure 12. 3713 Carpenter Shop.



2.11 3715 SPARE PARTS WAREHOUSE

This facility was a single-story corrugated sheet-metal building on a concrete slab used for storage (Figure 13). The 595-m² (6,400-ft²) facility was built sometime between 1959 and 1961.

Figure 13. 3715 Spare House Warehouse.



2.12 3716 STORAGE BUILDING

The original purpose of the 3716 Building was to support development of alternative reactor fuel fabrication processes (Figure 14). The last use of this 445-m² (4,800-ft²) facility was to store “green” (i.e., nonirradiated) N Reactor fuel. This one-story building consists of 1.2-m (4-ft)-high concrete walls mounting a metal frame structure with insulated aluminum wall and roof panels

Figure 14. 3716 Storage Building.



2.13 3722 FABRICATION SHOP

This facility was originally built as a receiving warehouse (Figure 15). It was later converted into a fabrication shop. It was a 590-m² (6,346-ft²) one-story wooden frame structure with a reinforced concrete slab floor.

Figure 15. 3722 Fabrication Shop.



3.0 PROJECT ACTIVITIES

3.1 ENGINEERING AND PERMITS

The *Removal Action Work Plan #1 for 300 Area Facilities* (DOE-RL 2005) was prepared to satisfy the requirements of the action memorandum (EPA and DOE 2005), outlining how compliance with, and enforcement of, applicable regulations will be achieved for cleanup of 300 Area facilities. Additionally, the removal action work plan (DOE-RL 2005) and environmental control plan (WCH 2006a) serve as the decommissioning plan and project management plan for the 300 Area project. The removal action work plan was prepared in accordance with Section 7.2.4 of the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) (Ecology et al. 1989) and was approved by the DOE, Richland Operations Office and the regulators.

Three plant forces work reviews (PFWRs) were prepared for the demolition of these 16 buildings. The majority were included in 8850-024-05, Rev. 0, "North 300 Area Minor Building Removal," which covers the 303A, 303E, 303F, 303G, 303J, 304, 304A, 311TF, 3707D, 3712, 3713, 3715, 3716, and 3722 Buildings. PFWR 8850-021-06, Rev. 0, "300 Area Building Removal North," covers 303M, and PFWR 8850-001-05, Rev. 1, "Decontamination and Demolition of the 313, 314, 314F Buildings," covers the work in 314. The D4 work on all 16 buildings was determined not to be applicable to the *Davis-Bacon Act of 1931* pay scale (BHI 2004).

Table 1 shows the buildings and associated initial hazard categorization (IHC) documents, along with the results of each evaluation.

Table 1. Initial Hazard Categorization Evaluations and Results. (2 Pages)

Building	IHC Number	Results
303A, 303E, 303F, 303G, 303J, 304, 304A, 311TF	IHC-2006-0001, Rev. 0 (WCH 2006a)	Below Category 3 ^a for radiological and below threshold quantities ^b for nonradiological
303M	IHC-2005-0029, Rev. 4 (BHI 2005d)	Below Category 3 ^a for radiological and below threshold quantities ^b for nonradiological
314	IHC-2004-0006, Rev. 0 (BHI 2004)	Below Category 3 ^a for radiological and below threshold quantities ^b for nonradiological
3707D, 3713, 3722	IHC-2005-0031, Rev. 0 (BHI 2005e)	Below Category 3 ^a for radiological and below threshold quantities ^b for nonradiological
3712	IHC-2005-0025, Rev. 0 (BHI 2005a)	Below Category 3 ^a for radiological and below threshold quantities ^b for nonradiological
3715	IHC-2005-0027, Rev. 0 (BHI 2005c)	Below Category 3 ^a for radiological and below threshold quantities ^b for nonradiological

Table 1. Initial Hazard Categorization Evaluations and Results. (2 Pages)

Building	IHC Number	Results
3716	IHC-2005-0026, Rev. 0 (BHI 2005b)	Below Category 3 ^a for radiological and below threshold quantities ^b for nonradiological

^a Category 3 threshold quantity as defined in Table A.1 of *DOE Standard – Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports* (DOE-STD-1027-92, Change Notice No. 1 [DOE 1997]).

^b “Threshold quantities” as defined in *29 Code of Federal Regulations (CFR) 1910.119 or 40 CFR 68.130*.

The IHC for 303M went through several revisions due to concerns regarding the quantity and enrichment of uranium (uranium-235) in the bag filter housings. Initially, in Rev. 0, the building inventory was estimated to be 40 kg in both the east and west filters combined. In Rev. 1, the inventory was increased to approximately 220 kg, based on survey data. Additionally, enrichment was estimated to be 3.1 wt% uranium-235 rather than the 1.25% originally estimated. After further isotopic analysis of the bag filter samples, Rev. 2 revised the wt% back to 1.25% uranium-235. Rev. 3 and Rev. 4 further revised the criticality evaluation, eventually determining that criticality was not credible under normal or abnormal conditions, and eliminating all criticality controls.

3.2 HAZARDOUS MATERIAL REMOVAL

The scope of the demolition project included removing and properly disposing of hazardous materials (e.g., oils, grease, asbestos-containing material, mercury, lead, and polychlorinated biphenyls). All known hazardous materials were removed from inside and outside of the buildings prior to demolition. Some asbestos-containing roofing material was left in place during demolition.

3.3 UTILITY AND DRAIN ISOLATION

Once hazardous material removal was completed in the buildings and the utilities were no longer needed, all electrical, water, and telecommunications services were disconnected from the buildings (if they had not been disconnected previously). Floors drains were inspected for mercury and then sealed to provide isolation. Sanitary sewers to the building were disconnected during early deactivation activities, and all drains were grouted.

3.4 DEMOLITION OF ABOVE-GRADE STRUCTURES

In general, after the hazardous materials and equipment removal activities were performed and utilities isolated, the above-grade structures were ready for demolition. The building structures were demolished using excavator-mounted hydraulic shears and a bucket-and-thumb. The debris was segregated for loading and disposal. Building debris was processed and sampled until industrial hygiene monitoring confirmed that loading and unloading waste did not generate airborne beryllium. Standard Environmental Restoration Disposal Facility (ERDF) roll-on/roll-off containers with two 6-mil liners were used to package and ship debris. Beryllium controls required that a pool of containers were designated for use in the 300 Area only. These

containers were part of a "closed-loop" disposal system and remain exclusively for use in the 300 Area.

Two buildings, 303M and 314, were somewhat more complicated and required additional technical planning and coordination.

Like all other buildings in the 300 Area D4 project, radiological and industrial hygiene surveys were conducted in the 314 Building prior to demolition. Unlike most other buildings, however, levels of radiological, beryllium, and mold contamination were found that required special controls during the hazardous material removal and demolition processes, and all waste from the 314 Building was considered both radiologically and beryllium contaminated. Demolition took place between October and December 2005, with load out continuing into January 2006. Further details regarding the end state of the 314 Building can be found in *Post-Demolition Summary Report for the 314/314B Buildings* (WCH 2006c).

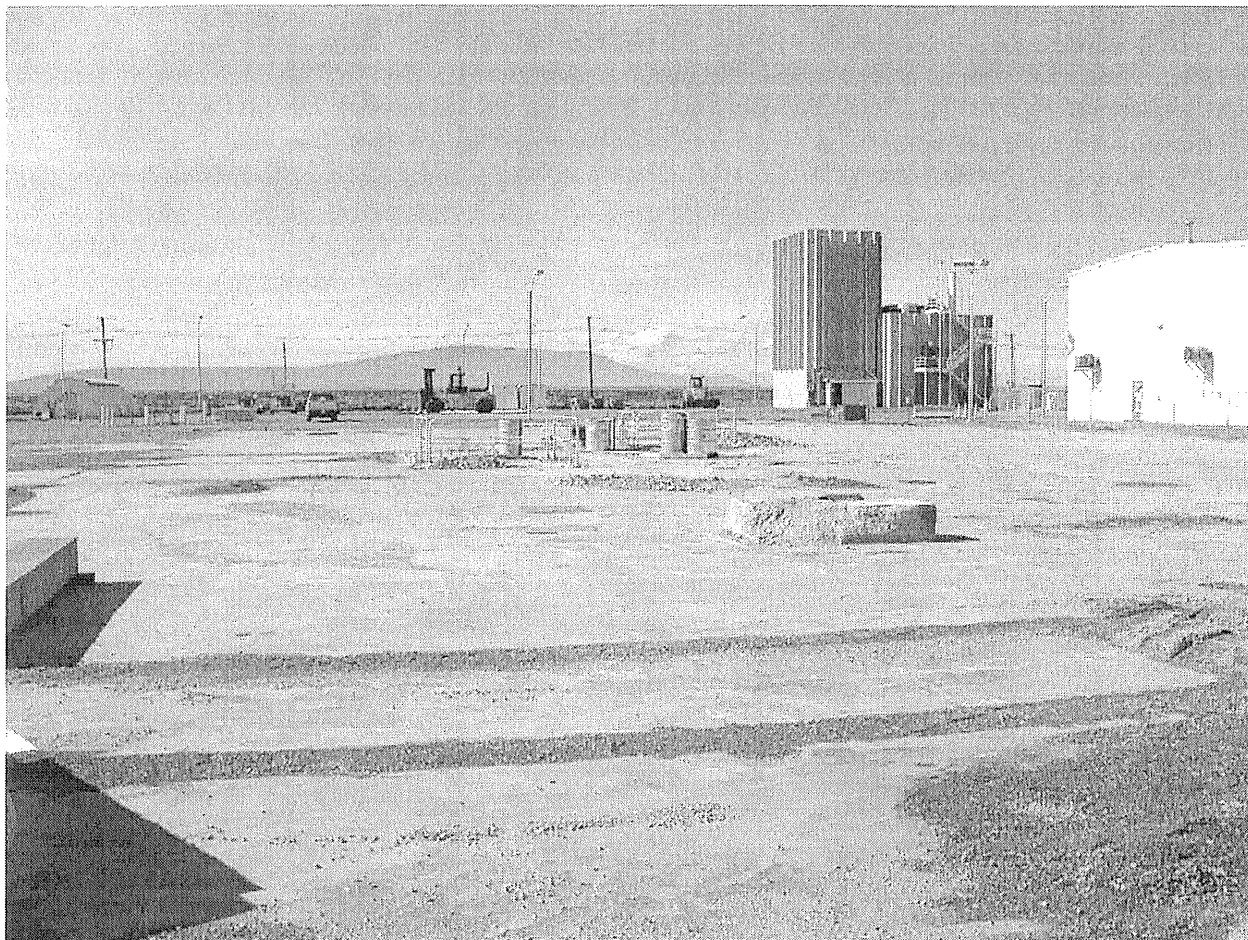
Although the demolition of the 303M Building was fairly straightforward, the 303M bag filter housings in particular required special planning and controls due to the quantity of uranium dust they contained (estimated to be approximately 220 kg). Early plans required the removal of the roof and bag filter housings using a high-capacity crane. However, as work progressed inside the building, it was determined that removal of the roof was too risky, so the project team decided to remove the south wall of the 303M Building and then remove the bag filter housings with a forklift. After the south wall was demolished, further discussions with project management, engineering, and the demolition crew (especially the excavator operator) provided an even safer approach: removal of the bag filters using the grapple attachment on the excavator. This approach was reviewed with management, craft supervision, and craft personnel, and the bag filter housings were removed intact. A small spill of uranium powder occurred as one of the bag filter housings was set on the ground, but this event was anticipated and was cleaned up without incident. The bag filter housings will be shipped to ERDF in a special Type A container in May and June 2006.

3.5 BELOW-GRADE DEMOLITION

All buildings were demolished to slab on grade, and the slab was left in place. All slabs will be removed at a later date, either by the D4 Closure Project or the Field Remediation Closure Project.

The foundation and floor slab for the 314 Building has been approved for deferral by DOE and the U.S. Environmental Protection Agency for remediation under the 300-FF-2 *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* action (EPA and DOE 2006). Several below-grade areas remain in place and were backfilled with clean fill material from borrow pit 6. These areas include the basement area in the southwest corner of the building, a 10.7-m (35-ft)-deep pit in the east central area of the slab, a 3-m (10-ft)-deep pit in the north-central portion of the slab, a 1.8-m (6-ft)-deep pit in the east-central area of the slab, a concrete ventilation duct under the slab, and several small trenches. The slab is posted as Fixed Contamination Area, but is no longer posted for beryllium (Figure 16).

Figure 16. Former Site of the 314 Building.



3.6 SITE RESTORATION

Upon completion of the above-grade demolition activities, remaining basements and trenches were backfilled with clean fill from borrow pit 6. If beryllium contamination remained on the slab surface, it was either fixed with latex paint or covered with clean fill. Otherwise, the slabs (or depressions, if slabs were removed) were posted as Underground Radioactive Material Areas (URMAs).

4.0 COST AND SCHEDULE

4.1 COST AND SCHEDULE

The following section details start and finish dates for major D4 activities in each of the 16 buildings as well as the total labor costs. These costs do not include deactivation or surveillance and maintenance work performed by Fluor Hanford, Bechtel Hanford, Inc., and

other contractors prior to turnover of the building to Washington Closure Hanford. They also do not include overhead or distributed costs, equipment and material costs, or work performed by subcontractors.

Note that some activities began prior to the current reporting quarter (second quarter of fiscal year 2006). Entries reading "NC" mean that no costs were collected or charged specifically to this activity.

The total labor cost (before overhead and distributed costs) for all 16 buildings was \$1,361,733.

4.1.1 303A Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost</u>
Engineering Planning	November 7, 2005	February 15, 2006	NC
Characterization	December 19, 2005	February 2, 2006	\$14,374
Building Deactivation	January 23, 2006	March 6, 2006	\$3,278
Building Demolition	February 16, 2006	February 16, 2006	\$6,968
Waste Loadout	February 24, 2006	March 2, 2006	NC
		TOTAL	\$24,620

4.1.2 303E Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost</u>
Engineering Planning	November 22, 2005	February 2, 2006	NC
Characterization	February 21, 2006	March 2, 2006	NC
Building Deactivation	February 21, 2006	March 2, 2006	\$170
Building Demolition	March 15, 2006	March 16, 2006	\$8,408
Waste Loadout	March 16, 2006	March 20, 2006	NC
		TOTAL	\$8,578.00

4.1.3 303F Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost</u>
Engineering Planning	January 19, 2006	February 15, 2006	NC
Characterization	February 1, 2006	February 23, 2006	\$698
Building Deactivation	February 1, 2006	March 2, 2006	\$4,303
Building Demolition	March 29, 2006	March 30, 2006	\$13,807
Waste Loadout	March 29, 2006	March 30, 2006	NC
		TOTAL	\$18,808.00

4.1.4 303G Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost</u>
Engineering Planning	January 9, 2006	February 8, 2006	NC
Characterization	January 24, 2006	February 2, 2006	\$322
Building Deactivation	January 24, 2006	February 2, 2006	\$2,959
Building Demolition	February 9, 2006	February 9, 2006	\$3,417
Waste Loadout	February 13, 2006	February 15, 2006	NC
		TOTAL	\$6,698.00

4.1.5 303J Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost</u>
Engineering Planning	January 9, 2006	March 9, 2006	NC
Characterization	January 9, 2006	February 23, 2006	\$2,483
Building Deactivation	January 9, 2006	February 16, 2006	\$25,517
Building Demolition	March 7, 2006	March 8, 2006	\$20,490
Waste Loadout	March 8, 2006	March 14, 2006	NC
		TOTAL	\$48,490.00

4.1.6 303M Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost</u>
Engineering Planning	October 5, 2005	March 5, 2006	NC
Characterization	January 16, 2006	March 2, 2006	\$42,683
Building Deactivation	December 21, 2005	February 23, 2006	\$110,638
Building Demolition	March 6, 2006	March 22, 2006	\$88,465
Waste Loadout	March 13, 2006	***	NC
		TOTAL	\$241,786.00

*** As of the end of the second quarter of fiscal year 2006, building debris loadout has not been completed for this building.

4.1.7 304 Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost</u>
Engineering Planning	January 9, 2006	February 15, 2006	NC
Characterization	January 24, 2006	February 2, 2006	\$149
Building Deactivation	January 24, 2006	February 2, 2006	\$3,784
Building Demolition	January 24, 2006	January 24, 2006	\$1,861
Waste Loadout	March 1, 2006	March 2, 2006	NC
		TOTAL	\$5,794.00

4.1.8 304A Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost</u>
Engineering Planning	January 9, 2006	February 15, 2006	NC
Characterization	January 24, 2006	February 2, 2006	NC
Building Deactivation	January 24, 2006	February 2, 2006	\$273
Building Demolition	January 24, 2006	January 24, 2006	\$4,992
Waste Loadout	March 1, 2006	March 2, 2006	NC
		TOTAL	\$5,265.00

4.1.9 311TF Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost</u>
Engineering Planning	January 9, 2006	February 2, 2006	NC
Characterization	January 25, 2006	February 2, 2006	\$316
Building Deactivation	January 25, 2006	February 2, 2006	NC
Building Demolition	February 8, 2006	February 9, 2006	\$6,246
Waste Loadout	February 13, 2006	February 16, 2006	\$122
		TOTAL	\$6,684.00

4.1.10 314 Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost</u>
Engineering Planning	August 29, 2005	September 30, 2005	NC
Characterization	August 29, 2005	September 30, 2005	\$10,004
Building Deactivation	August 29, 2005	September 30, 2005	\$25,649
Building Demolition	September 26, 2005	December 5, 2005	\$505,603
Waste Loadout	December 6, 2005	January 12, 2006	NC
		TOTAL	\$541,256.00

4.1.11 3707D Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost</u>
Engineering Planning	January 23, 2006	March 23, 2006	NC
Characterization	January 23, 2006	March 23, 2006	\$24,591
Building Deactivation	January 23, 2006	March 23, 2006	\$15,838
Building Demolition	March 20, 2006	March 22, 2006	\$26,267
Waste Loadout	March 20, 2006	March 28, 2006	NC
		TOTAL	\$66,696.00

4.1.12 3712 Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost*</u>
Engineering Planning	October 3, 2005	October 20, 2005	NC
Characterization	October 17, 2005	November 21, 2005	\$73,250
Building Deactivation	December 1, 2005	December 15, 2005	\$80,550
Building Demolition	December 27, 2005	January 17, 2006	\$101,400
Waste Loadout	January 23, 2006	February 2, 2006	NC
		TOTAL	\$255,200.00

* Costs for the 3716 Building are included with the 3712 Building.

4.1.13 3713 Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost</u>
Engineering Planning	January 9, 2006	February 2, 2006	NC
Characterization	January 9, 2006	February 2, 2006	\$13,340
Building Deactivation	January 9, 2006	February 2, 2006	\$19,188
Building Demolition	February 8, 2006	February 9, 2006	\$13,847
Waste Loadout	February 14, 2006	February 23, 2006	NC
		TOTAL	\$46,375.00

4.1.14 3715 Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost</u>
Engineering Planning	October 5, 2005	February 2, 2006	NC
Characterization	January 23, 2006	February 2, 2006	\$92
Building Deactivation	December 5, 2005	February 2, 2006	\$2,575
Building Demolition	February 16, 2006	February 23, 2006	\$17,302
Waste Loadout	February 24, 2006	February 23, 2006	NC
		TOTAL	\$19,969.00

4.1.15 3716 Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost *</u>
Engineering Planning	October 3, 2005	October 20, 2005	--
Characterization	October 17, 2005	November 21, 2005	--
Building Deactivation	December 1, 2005	December 15, 2005	--
Building Demolition	December 27, 2005	January 17, 2006	--
Waste Loadout	January 31, 2006	February 8, 2006	--

* Costs for the 3716 Building are included with the 3712 Building, above.

4.1.16 3722 Building

	<u>Start Date</u>	<u>Completion Date</u>	<u>Cost</u>
Engineering Planning	January 9, 2006	February 9, 2006	NC
Characterization	January 9, 2006	February 2, 2006	\$4,468
Building Deactivation	January 9, 2006	February 2, 2006	\$19,368
Building Demolition	January 9, 2006	February 14, 2006	\$25,999
Waste Loadout	February 14, 2006	March 2, 2006	NC
		TOTAL	\$49,835.00

5.0 RECYCLED MATERIAL AND WASTE DISPOSAL

One of the objectives of the 300 Area D4 Project is to support recycling and waste minimization. However, beryllium and radiological contamination throughout the site will prevent most of the material and equipment from the buildings to be salvaged and/or transferred off site. Therefore, all of the debris for buildings identified in this report was shipped to the ERDF for disposal.

5.1 WASTE DISPOSAL

Waste transferred to the ERDF is listed in Table 2.

Table 2. Waste Transferred to ERDF.

Building	Number of Shipments	Waste Volume (ft ³)	Tons
303A	16	3390	172.1
303E	12	2543	167.6
303F	14	2966	181.8
303G	11	2331	171.5
303J	29	6145	150.2
303M	29 ^a	6145	273.3
304	1	212	8.8
304A	b	b	b
311TF	c	c	c
314	134	28393	1459.2
3707D	49	10383	388.2
3712	36	7628	238.6
3713	38	8052	142.6
3715	12	2543	46.9
3716	14	2966	83.6
3722	53	11230	256.9

^a Waste load out for this building was not completed by the end of March 31, 2006.

^b Waste volume included with the 304 Building.

^c Waste volumes for this building were included in other shipments.

6.0 OCCUPATIONAL EXPOSURES

6.1 PERSONNEL INJURIES

Washington Closure Hanford personnel worked a total of approximately 44,414 hours (manual and nonmanual, not including subcontractors) on the project with no Occupational Safety and Health Administration recordable injuries and no lost workday cases.

6.2 PERSONNEL RADIOLOGICAL EXPOSURES

No clothing or skin contamination incidents occurred during D4 of the sixteen 300 Area buildings. In addition, the as low as reasonably achievable goal of 0 person-mrem was achieved. All boundary air sample results were below procedural action levels for the duration of the project.

6.3 OTHER INDUSTRIAL HAZARD EXPOSURES

None.

7.0 REFERENCES

29 CFR 1910, "Occupational Safety and Health Standards," *Code of Federal Regulations*, as amended.

40 CFR 68, "Chemical Accident Prevention Provisions," *Code of Federal Regulations*, as amended.

BHI, 2004, *Initial Hazard Categorization (ICH) Documentation Form*, IHC-2004-0006, Rev. 0, Bechtel Hanford, Inc., Richland, Washington.

BHI, 2005a, *Initial Hazard Categorization (ICH) Documentation Form*, IHC-2005-0025, Rev. 0, Bechtel Hanford, Inc., Richland, Washington.

BHI, 2005b, *Initial Hazard Categorization (ICH) Documentation Form*, IHC-2005-0026, Rev. 0, Bechtel Hanford, Inc., Richland, Washington.

BHI, 2005c, *Initial Hazard Categorization (ICH) Documentation Form*, IHC-2005-0027, Rev. 0, Bechtel Hanford, Inc., Richland, Washington.

BHI, 2005d, *Initial Hazard Categorization (ICH) Documentation Form*, IHC-2005-0029, Rev. 4, Bechtel Hanford, Inc., Richland, Washington.

BHI, 2005e, *Initial Hazard Categorization (ICH) Documentation Form*, IHC-2005-0031, Rev. 0, Bechtel Hanford, Inc., Richland, Washington.

WCH, 2006a, *300 Area Facilities D4 Environmental Control Plan*, WCH-84, Rev. 0, Washington Closure Hanford, Richland, Washington.

WCH, 2006b, *Initial Hazard Categorization (ICH) Documentation Form*, IHC-2006-0001, Rev. 0, Washington Closure Hanford, Richland, Washington.

WCH, 2006c, *Post-Demolition Summary Report for the 314/314B Buildings*, IOM 126699 dated March 8, 2006, Washington Closure Hanford, Richland, Washington.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9601, et seq.

Davis-Bacon Act of 1931, 40 U.S.C. 276a, et seq.

DOE, 1997, *DOE Standard – Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*, DOE-STD-1027-92, Change Notice No. 1, U.S. Department of Energy, Washington, D.C.

DOE-RL, 2005, *Removal Action Work Plan #1 for 300 Area Facilities*, DOE/RL-2004-77, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Ecology, EPA, and DOE, 1989, *Hanford Federal Facility Agreement and Consent Order*, 2 vols., as amended, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington.

EPA and DOE, 2005, *Action Memorandum #1 for the 300 Area Facilities*, CCN 118781, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

EPA and DOE, 2006, *Approval To Defer Removal Of The 314 And 314b Building Foundations*, CCN 125721, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901, et seq.

DISTRIBUTION

U.S. Department of Energy
Richland Operations Office

R. F. Guercia A3-04

Washington Closure Hanford

J. M. Carranco L7-15
R. G. Egge X5-50
K. J. Koegler L1-07
D. S. Smith L1-07
J. M. Swartz L1-07
D. M. Yasek L1-07

Document Control H0-30
DOE-RL Public Reading Room H2-53
Hanford Technical Library P8-55