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Rev. 0

River Corridor
Closure Contract

100 Area D4 Project Building Completion Report – July 2007 to December 2008

April 2009

Washington Closure Hanford

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

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Title: 100 Area D4 Project Building Completion Report – July 2007 to December 2008

Author Name: M. T. Stankovich, D4 100 Area Characterization Specialist

Approval: M. E. Allen, D4 100 Area Project Engineer

Mark E Allen
Signature

4-14-09
Date

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Author:

M. T. Stankovich

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METRIC CONVERSION CHART

Into Metric Units			Out of Metric Units		
If You Know	*Multiply By*	*To Get*	*If You Know*	*Multiply By*	*To Get*
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 decontamination, decommissioning (D&D), and demolition of the 105-NB, 163-N, 183-N, 183-NA, 183-NB, 183-NC, 184-N, 184-NA, 184-NB, 184-NC, 184-ND, 184-NE, 184-NF, 1312-N, 1330-N, 1705-N, 1705-NA, 1706-N, 1712-N, 1714-N, 1714-NA, 1714-NB, 1802-N, MO-050, MO-055, MO-358, MO-390, MO-900, MO-911, and MO-950 facilities in the 100 Area of the Hanford Site. The D4 activities for these facilities include utility disconnection, planning, characterization, engineering, removal of hazardous and radiological contaminated materials, equipment removal, decommissioning, deactivation, decontamination, demolition of the structure, and removal of the remaining slabs.

2.0 FACILITY DESCRIPTION AND CONDITIONS

2.1 105-NB MAINTENANCE BUILDING ADDITION

The 105-NB Mechanical Shop Addition was a 105-ft by 80-ft (32-m by 24.4-m) one-story steel frame building with painted steel siding attached to the north side of the 105-N Reactor Administration Offices (Figure 1). The building was on a reinforced concrete slab foundation and had a steel gable roof. The building was used to house an expanded maintenance shop.

Figure 1. 105-NB Maintenance Building Addition.

2.2 163-N DEMINERALIZER PLANT

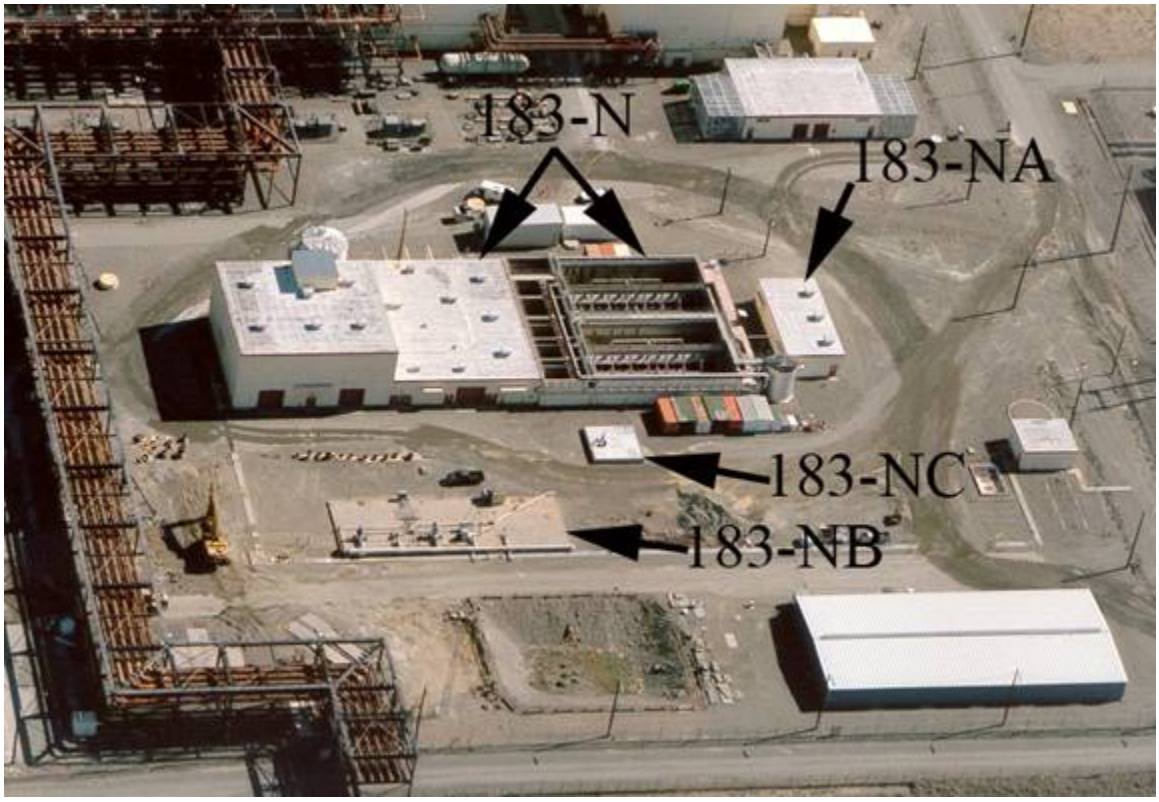
The 163-N Demineralizer plant encompassed 11,675 ft^2 (1,084.6 m^2) gross area (Figure 2). The processing and laboratory space took up 10,475 ft^2 (973.2 m^2). It was a one-story, high-bay, steel-frame building with corrugated metal siding. The building was on a reinforced concrete slab foundation and was used to demineralize, de-gas, and pump filtered and treated water into a 3.8 million liter (1 million gallon) storage tank. The facility is physically adjacent to the 183-N facility.

Figure 2. 163-N Demineralizer Plant.

2.3 183-N WATER FILTER PLANT

The 183-N Water Treatment Plant is a 20,700-ft^2 (1,923.1-m^2) one-story, concrete masonry and steel-sided building on a reinforced-concrete foundation (Figure 3). This square footage estimate covers the 183-N Building up to its union with the 163-N Building. The 183-N Building consists of the service bay, the chemical treatment and pipe gallery bay, the coagulation basin and filters, and the coagulator drive bay. The coagulation basin is also referred to as the settling basin.

Figure 3. 183-N Water Filter Plant.



2.4 183-NA WATER FILTER PLANT PUMP HOUSE

The 183-NA Pump House was a rectangular one-story concrete masonry structure with reinforced concrete panel flat roof and a poured concrete foundation (Figure 4). 183-NA was approximately 20 ft (6 m) to the east of the 183-N Coagulators and measured 66 ft by 33 ft (20 m by 10 m). The building was used to house the pumps for water filter operations.

Figure 4. 183-NA Water Filter Plant Pump House.

2.5 183-NB WATER FILTER PLANT CLEARWELLS

The 183-NB Clearwell was a buried, rectangular, reinforced concrete structure approximately 120 ft by 40 ft by 12 ft (36.5 m by 12.1 m by 3.6 m deep), with the top surface protruding approximately 0.3 m (1 ft) above grade (Figure 5). Several pumps and associated control equipment were mounted on top of the concrete surface. The facility was used to store filtered water.

Figure 5. 183-NB Water Filter Plant Pump House.

2.6 183-NC FILTER BACKWASH SUMP

The 183-NC Filter Backwash Sump was an 8.5-m by 8.5-m (28-ft by 28-ft) box-shaped, reinforced concrete sump with the top surface protruding about 0.9 m (3 ft) above grade (Figure 6). The top surface is diamond plate steel.

Figure 6. 183-NC Filter Backwash Sump.

2.7 184-N PLANT SERVICE POWER HOUSE

The 184-N Plant Service Power House was a rectangular, four-story building with channeled steel siding over a structural steel frame (Figure 7). The stairwells, offices, control room, and the mezzanine walls were concrete masonry units. Floors were reinforced concrete and metal grating. The roof was pre-cast concrete planks supported by a structural steel beam-girder system and covered with 4-ply built-up roof with 2 in. insulation. The powerhouse dimensions were 96 ft by 112 ft (10,752 ft^2) by 70 ft high. The main building equipment was a 575,000 Btu/hr Foster Wheeler boiler and 15,000 kW turbine generator.

Figure 7. 184-N Plant Service Power House.

2.8 184-NA AUXILIARY POWER ANNEX BUILDING

The 184-NA Auxiliary Power Annex Building was a rectangular, one-story metal-frame building with channeled steel siding and reinforced concrete floor (Figure 8). The roof was comprised of pre-cast concrete panels supported by a structural steel beam-girder system. The west wall was a common wall with 184-N. The annex building dimensions were 60 ft by 75 ft (4,500 ft^2) by 40 ft high. The main building equipment was two Combustion Engineering package boilers, blowers for combustion air, and compressed air system.

Figure 8. 184-NA Auxiliary Power Annex Building.

2.9 184-NB AIR HANDLING MAIN BUILDING

The 184-NB Air Handler Main Building was a pre-engineered rectangular, steel-sided building with a reinforced concrete floor located approximately 14 ft (4 m) north of 184-N (Figure 9). Aerial photographs indicate the roof membrane is the same as 184-N and 184-NA. The north wall was all louvers. The Air Handler Main Building dimensions were approximately 24 ft by 39 ft (936 ft^2). Building equipment included an HVAC system for 184-N.

Figure 9. 184-NB Air Handling Main Building.

2.10 184-NC AIR HANDLING ANNEX BUILDING

The 184-NC Air Handler Annex Building was a pre-engineered rectangular steel sided building with a reinforced concrete floor located south of 184-NA (Figure 10). Aerial photographs indicate the roof membrane is the same as 184-N and 184-NA. The east wall was all louvers. The Air Handler Main Building dimensions were approximately 33 ft by 24 ft (784 ft^2). Building equipment included an HVAC system for 184-NA.

Figure 10. 184-NC Air Handling Annex Building.

2.11 184-ND FUEL/DIESEL OIL DAY TANKS

The 184-ND Fuel/Diesel Oil Day Tanks consisted of two 50,000-gal oil storage tanks and one 15,000-gal catch tank (Figure 11). They were located inside a reinforced concrete containment basin. There was no roof to this facility. The day tank dimensions were approximately 81 ft by 41 ft (3,400 ft^2). These tanks were used for day use of fuel/diesel for boilers in 184-N and 184-NA.

Figure 11. 184-ND Fuel/Diesel Oil Day Tanks.

2.12 184-NE COMPRESSED GAS SHEDS

The 184-NE Compressed Gas Sheds were two corrugated metal gas bottle storage sheds attached to the south wall of 184-N (Figures 12 and 13). The sheds north wall was common with 184-N. The floors were reinforced concrete or steel plates. The roofs were corrugated steel panels. The 184-NE-1 West Shed was approximately 4 ft by 17 ft (62 ft^2) and the 184-NE-2 East Shed was approximately 4 ft by 11 ft (40 ft^2). Gas cylinders were stored in the sheds and gas fed into 184-N.

Figure 12. 184-NE-1 Compressed Gas Shed.

Figure 13. 184-NE-2 Compressed Gas Shed.

2.13 184-NF CHEMICAL INJECTION PUMP SHED

The 184-NF Chemical Injection Pump Shed was a channeled metal light-weight steel-framed structure attached to the southwest corner of 184-N (Figure 14). The east wall was common to 184-N. The floor was reinforced concrete. The roof was a metal shallow gable roof. The building housed the chemical makeup system for 109-N.

Figure 14. 184-NF Chemical Injection Pump Shed.

2.14 1312-N LIQUID EFFLUENT RETENTION BASIN

The 1312-N Facility was an excavated basin 513 ft by 264 ft by approximately 26 ft deep (156 m by 80 m by 8 m), lined with 60-mil high-density polyethylene (Figure 15). The 1312-N Liquid Effluent Retention Basin (also referred to as the Liquid Effluent Retention Facility) was constructed as a part of the post-Chernobyl safety upgrades to N Reactor (N Reactor Accelerated Safety Enhancement Program). It was designed to retain reactor coolant and other contaminated water in the event of a loss of emergency coolant accident scenario.

Figure 15. 1312-N Liquid Effluent Retention Basin.

2.15 1330-N WASTE STORAGE FACILITY

The 1330-N Waste Storage Facility was a curbed and fenced concrete pad (Figure 16). The pad was covered by an open metal shed, installed over the pad in the late 1980s that was divided into three storage areas each with its own locked gate. The entire unit was approximately 150 ft by 60 ft (46 m by 18 m). The south and west sides of the unit had sheet metal siding. The east and north sides were open. An asphalt parking/driving area was on the north side; gravel surrounds the rest of the facility.

Figure 16. 1330-N Waste Storage Facility.

2.16 1705-N INSTRUMENT AND ELECTRICAL FACILITY

The 1705-N Instrument and Electrical Facility was a rectangular, one-story steel-frame building with a poured concrete foundation (Figure 17). The walls and gable roof were corrugated metal. The east wall is shared with 1705-NA and the north wall is shared with 1706-N. The 1705-N Facility was part of the original N Reactor complex to provide space for a variety of operations and support services including a module shop, communication shop, instrument shop, electrical shop, small appliance storage, document storage, conference room, and restrooms. The 1705-N Instrumentation and Electrical Facility was a 50-ft by 152-ft (15-ft by 46-m) pre-engineered, one-story metal building attached to the north wall of 105-N Reactor Building. The building covered 9,240 ft^2 (858 m^2).

Figure 17. 1705-N Instrument and Electrical Facility.

2.17 1705-NA MAINTENANCE SHOP ANNEX

The 1705-NA Maintenance Shop Annex was a rectangular, one-story steel-frame building with a poured concrete foundation and corrugated metal exterior wall and flat roof surfaces (Figure 18). The west wall of 1705-NA is shared with 1705-N. It was originally used for maintenance work on motors and later as office space. The 1705-NA Maintenance Shop Annex was a 20-ft by 130-ft (6-m by 40-m) steel-framed building with metal siding and covered a 2,583-ft^2 (240-m^2) area.

Figure 18. 1705-NA Maintenance Shop Annex.

2.18 1706-N STORAGE BUILDING/MAINTENANCE SHOP

The 1706-N Storage Building/Maintenance Shop was a rectangular, one-story steel-frame building with a poured concrete foundation (Figure 19). The 1706-N Storage Building/Maintenance Shop was a 30-ft by 75-ft (9-m by 23-m) pre-engineered, steel-framed building with metal siding that covered 2,228 ft^2 (207 m^2). The walls and gable roof were corrugated metal. Attached to the east side of 1706-N was an open air shed with a steel roof supported by galvanized pipes. Chain link fencing attached to the pipes prevented unauthorized access to the shed. The south wall of 1706-N was shared with 1705-N. A loading ramp with embedded snow melting units was located along the west side of the building. The 1706-N Building was constructed in 1984 to serve as a storage facility for the 100-N Area. Within a few years it was being used as an electrical motor repair shop.

Figure 19. 1706-N Storage Building/Maintenance Shop.

2.19 1712-N INSULATION SHOP

The 1712-N Insulation Shop was constructed around 1962 as part of the original N Reactor complex (Figure 20). It was a rectangular, two-story steel frame building with a reinforced poured concrete foundation, corrugated metal exterior wall surface, and a corrugated metal gable roof. The second story was enclosed on one-half and opened from the first floor to the roof on the second story in the second half. Interior walls were 2-in. by 4-in. studs with cement asbestos or gypsum wallboard. A small wood and corrugated sheet metal lean-to type storage shed was attached to the northwest corner of 1712-N. An asbestos dust collector was located on a concrete pad at the northeast corner of 1712-N. The 1712-N Insulation Shop was the primary work location for the 100-N Area insulators. The facility held equipment for shaping and cutting insulation for 100-N piping systems and equipment.

Figure 20. 1712-N Insulation Shop.

2.20 1714-N WAREHOUSE AND RECEIVING

The 1714-N Building was constructed in 1966 (Figure 21). 1714-N was a rectangular, one-story metal frame building with reinforced concrete grade beams, a poured concrete foundation, corrugated metal exterior wall surface, and metal gable roof. It measured 40 ft by 80 ft (12.2 m by 24.4 m). The 1714-N Warehouse was initially used for warehousing small tools and parts used at 100-N. Later it was used to store radioactive materials.

Figure 21. 1714-N Warehouse and Receiving.

2.21 1714-NA WAREHOUSE

The 1714-NA Receiving and Inspection Warehouse was constructed in 1982 to support 100-N Area receiving and inspection activities (Figure 22). It was a rectangular, one-story metal frame building with a reinforced poured concrete foundation, corrugated metal exterior wall surface, and metal gable roof. The 1714-NA Building is 51 ft by 80 ft (15.5 m by 24.4 m), 4,080 ft^2 (379 m^2).

Figure 22. 1714-NA Warehouse.

2.22 1714-NB WAREHOUSE

The 1714-NB was a rectangular, one-story wood frame building with a poured concrete foundation, plywood siding, and a gable corrugated metal roof (Figure 23). The building was 24 ft by 40 ft (7.3 m by 12.2 m). 1714-NB was attached to and directly north of the 1714-NA Building. The 1714-NB was constructed to provide space for small tools, parts, and equipment for daily use. It was later used for storage of radioactive materials.

Figure 23. 1714-NB Warehouse.

2.23 1802-N PIPE TRESTLE

The 1802-N Pipe Trestle includes the piping and support structure that supplied steam from the 109-N Building to the Hanford Generating Plant (HGP) and steam condensate return lines from the HGP back to 109-N (Figure 24).

Figure 24. 1802-N Pipe Trestle.

2.24 MO-050 MOBILE OFFICE

MO-050 (1115-N) was one of several mobile offices that were installed in the 100-N Area in the 1980s (Figure 25). It consisted of eight sheet metal and plywood trailers on I-beam trailer frames. The MO-050 facility was used to house support personnel offices in the 100-N Area. In addition to office space, MO-050 also contained a lunchroom/kitchen, 32 offices, restrooms, and 2 classrooms.

Figure 25. MO-050 Mobile Office.

2.25 MO-055 MOBILE OFFICE

MO-055 (1114-N) was one of several mobile offices that was installed in the 100-N Area in the 1980s (Figure 26). It consisted of four sheet metal and plywood trailers on I-beam trailer frames. The MO-055 facility was used to provide office space for site support personnel in the 100-N Area. The building was attached to the MO-911 (1114-NA) mobile office. Together with M0-911, the two facilities contained 20 offices, restrooms, and a kitchen.

Figure 26. MO-055 Mobile Office.

2.26 MO-358 MOBILE OFFICE (TRAINING SIMULATOR)

MO-358 (1116-N) was one of several mobile offices that was installed in the 100-N Area in the 1980s (Figure 27). It consisted of 10 sheet metal and plywood trailers on I-beam trailer frames. The 1116-NB Air Compressor Building was a small wooden shed located off the northwest corner of the 1116-N Building. As the name suggests, the structure housed an air compressor needed to operate the 1116-N Training. The 1116-N Building was used as a training simulator for the 100-N Area and housed a replica of the 100-N Reactor control room. In addition, it contained seven offices, a kitchen, and restrooms.

Figure 27. MO-358 Mobile Office (Training Simulator).

2.27 MO-390 MOBILE OFFICE (FIELD TRAILER)

The MO-390 trailer appears to have originally been located in the 200 West Area near the 271-U Building during the mid-1990s (Figure 28). It was relocated around 1997 to the 100-B/C Area for the 105-C Interim Safe Storage project. In 2000, the MO-390 trailer was brought to the 100-N Area where it remained until it was demolished in 2007. It was a single-wide trailer that measured 10 ft by 32 ft (3.1 m by 9.8 m). In the 100-N Area, the MO-390 trailer functioned as a Radiological Control Technician trailer in support of the 100-NR-1 TSD site project. Apparently, MO-390 was labeled as MO-766 in 2004 and used as a counting room and storage trailer in support of 100-N crib remediation. In 2007, just before the MO-390 building was demolished, it was observed to have signs on it that read "MO-766." Using the serial codes of the trailers, it was determined that MO-766 was actually located near ERDF, with a sign that read "MO-740." The real MO-740 building has not been located. It seems likely that MO-390 functioned as MO-766 since 2004 when MO-766 was supposed to have been installed.

Figure 28. MO-390 Mobile Office (Field Trailer).

2.28 MO-900 MOBILE OFFICE

MO-900 (1124-N) was one of several mobile offices that were installed in the 100-N Area in the 1980s (Figure 29). It consisted of two sheet metal and plywood trailers on I-beam trailer frames. As was the case with most of the mobile trailer buildings on the Hanford Site, the primary purpose of MO-900 was to provide office space. The building housed four offices, a kitchen, and restrooms. The facility was later used for records storage.

Figure 29. MO-900 Mobile Office.

2.29 MO-911 MOBILE OFFICE

MO-911 (1114-NA) was one of several mobile offices that were installed in the 100-N Area in the 1980s (Figure 30). It consisted of two sheet metal and plywood trailers on I-beam trailer frames. The building was connected to the MO-055 (1114-N) mobile office. The MO-911 facility was used to provide office space for field support personnel in the 100-N Area. Together with MO-055, the two facilities contained 20 offices, restrooms, and a kitchen.

Figure 30. MO-911 Mobile Office.

2.30 MO-950 MOBILE OFFICE

MO-950 was a single-wide mobile office trailer facility in the 100-N Area (Figure 31). MO-950 was located in the southeastern portion of the 100-N Area and was associated with the laydown yard. The MO-950 facility provided office space at the 100-N laydown yard.

Figure 31. MO-950 Mobile Office.

3.0 PROJECT ACTIVITIES

3.1 ENGINEERING AND PERMITS

The Removal Action Work Plan for 100-N Area Ancillary Facilities (DOE-RL 2006) was prepared to satisfy the requirements of the action memorandum (Ecology et al. 1999), outlining how compliance with and enforcement of applicable regulations will be achieved for cleanup of 100 Area facilities. Additionally, the removal action work plan (DOE-RL 2006) and the *Environmental Control Plan for 100-N D4/ISS Activities* (WCH 2006) serve as the decommissioning plan and project management plan for the 100 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 U.S. Department of Energy, Richland Operations Office and regulators.

The plant forces work review was completed for demolition of the following buildings:

- 105-NB Building (8850-015-06), completed in December 2005
- 163-N and 183-N/NA/NB/NC Buildings (8850-009-05), completed in March 2005
- 184-N/NA/NB/NC/ND/NE/NF (8850-005-06), completed in October 2005
- 1312-N Basin (8850-030-06), completed in March 2006
- 1330-N (8850-008-08), completed in April 2008
- 1705-N/NA and 1706-N Buildings (8850-016-06), completed in December 2005
- 1712-N and 1714-N/NA/NB Building (8850-006-04), completed in July 2004
- 1802-N (8850-023-05), completed in August 2005
- MO-050, MO-358, and MO-900 Buildings (8850-045-06), completed in June 2006
- MO-055 and MO-911 Buildings (8850-058-06), completed in September 2006
- MO-390 Building (8850-009-08), completed in August 2008
- MO-950 Building (8850-023-07), completed in August 2007.

The deactivation and D&D work on all 30 buildings was determined not to be applicable to the *Davis-Bacon Act of 1931* pay scale.

An Initial Hazard Categorization (IHC) was performed on each building before demolition as follows:

- 1330-N is documented in IHC-2004-001
- 105-NB Building is documented in IHC-2005-0032
- 163-N and 183-N/NA/NB/NC Buildings is documented in IHC-2005-0037
- 184-N/NA/NB/NC/ND/NE/NF, 1312-N, 1705-N/NA, 1706-N, 1712-N Buildings and 1802-N Pipe Trestle is documented in IOM 095435
- 1714-N/NA/NB Building is documented in IHC 2006-0029
- MO-050, MO-050, MO-358, MO-390, MO-900, MO-911, and MO-950 Building is documented in IHC-2006-036.

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 [PCBs]). All known hazardous materials were removed from inside and outside of the building prior to demolition.

3.3 UTILITY AND DRAIN ISOLATION

All electrical, water, and telecommunications services were disconnected from the buildings. Then hazardous material removal was completed in the buildings. 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 STRUCTURES

After the utilities were isolated, hazardous materials and equipment removal were performed and the above-grade structures were ready for demolition. The building structures were demolished using excavator-mounted hydraulic shears and a bucket-and-thumb. The foundations for these facilities were likewise removed. The debris was segregated for loading and disposal. Standard Environmental Restoration Disposal Facility (ERDF) roll-on/roll-off containers with 6-mil liners were used to package and ship debris.

3.5 SITE RESTORATION

Upon completion of demolition activities, excavations were backfilled with clean fill. As-left conditions are in Table 1.

Table 1. Site Conditions. (3 Pages)

Building	Remaining Conditions	Postings
105-NB	All structure and slab removed and backfilled	Downposted, then reposted for 105-N Administration Office demolition
163-N 183-N 183-NA 183-NB 183-NC	All structure and slab removed and backfilled except 163-N Sump #2	Downposted
184-N 184-NB 184-NC 184-NE 184-NF	All structure and slab removed and backfilled, the following sites around 184-N needing further action by Field Remediation: 100-N-28, Resin Disposal Pit Liquid Waste Site 2 100-N-24, Hydrogen Dry Well Liquid Waste Site 100-N-55, 153-N Building Drywell	Downposted, then reposted for 109-N ISS demolition project

Table 1. Site Conditions. (3 Pages)

Building	Remaining Conditions	Postings
184-NA	Main structure and slab removed and backfilled, the following sites around 184-NA needing further action by 100 Area D4 and Field Remediation: Stack pedestal UPR-100-N-36, 184NA, Diesel Generator Area	Downposted, then reposted for 109-N ISS demolition project
184-ND	Main structure and slab removed and backfilled, sites around 184-ND needing further action by Field Remediation: Diesel/Fuel Oil Pipelines UPR-100-N-22, 184-N Diesel Oil supply Line Leak No. 1 UPR-100-N-23, 184-N Diesel Oil supply Line Leak No. 2 UPR-100-N-21, 184-N Diesel Tank Overflow UPR-100-N-19, 184-N Day Tank Fuel Oil Spill UPR-100-N-42, 184-N Day Tank Liquid Unplanned Release	Downposted, then reposted for 109-N ISS demolition project
1312-N	Structure and slab removed, site backfilled	Downposted
1330-N	Structure and slab removed, site backfilled	Downposted
1705-N	Structure and slab removed, site backfilled	Downposted, then partially reposted for 105-N Administration Office demolition
1705-NA	Structure and slab removed, site backfilled	Downposted, then partially reposted for 105-N Administration Office demolition
1706-N	Structure and slab removed, site backfilled	Downposted, then partially reposted for 105-N Administration Office demolition
1712-N	Structure and slab removed, site backfilled	Downposted, then partially reposted for 105-N Administration Office demolition
1714-N	Structure and slab removed, site backfilled	Downposted, then partially reposted for 105-N Administration Office demolition
1714-NA	Structure and slab removed, site backfilled	Downposted, then partially reposted for 105-N Administration Office demolition
1714-NB	Structure and slab removed, site backfilled	Downposted, then partially reposted for 105-N Administration Office demolition
1802-N	Structure and slab removed, site backfilled	Downposted, then partially reposted for 109-N ISS Demolition Project
MO-050	Structure and slab removed, site backfilled, needing remediation of underground utilities	Downposted

Table 1. Site Conditions. (3 Pages)

Building	Remaining Conditions	Postings
MO-055	Structure and slab removed, site backfilled, needing remediation of underground utilities	Downposted
MO-358	Structure and slab removed, site backfilled, needing remediation of underground utilities	Downposted
MO-390	Structure and slab removed site backfilled	Downposted
MO-900	Structure and slab removed, site backfilled, needing remediation of underground utilities	Downposted
MO-911	Structure and slab removed, site backfilled, needing remediation of underground utilities	Downposted
MO-950	Structure and slab removed site backfilled	Downposted

4.0 COST AND COMPLETION

The total project cost for the demolition of 30 buildings was approximately $5,879,630. The cost breakdown and completion dates for these 30 buildings are listed in Table 2.

Table 2. 100-N Cost and Completion Breakdown. (2 Pages)

Building	Total Cost	Transition Date
105-NB	$233,176	March 02, 2008
163-N	$1,280,599	April 10, 2008
183-N 183-NB 183-NC	$2,184,671	February 23, 2008
183-NA	$4,625	February 23, 2008
184-N 184-ND	$1,798,122	September 12, 2008*
184-NA	$269,757	September 12, 2008*
184-NB	$63,976	September 12, 2008*
184-NC	$12,368	September 12, 2008*
184-NE	$1,959	September 12, 2008*
184-NF	$2,311	September 12, 2008*
1312-N	$1,038,516	February 21, 2008
1330-N	$124,784	October 23, 2008*
1705-N	$521,526	February 23, 2008
1705-NA	$13,013	February 23, 2008

Table 2. 100-N Cost and Completion Breakdown. (2 Pages)

Building	Total Cost	Transition Date
1706-N	$42,491	February 23, 2008
1712-N	$8,230	February 23, 2008
1714-N	$26,935	February 23, 2008
1714-NA	$3,260	February 23, 2008
1714-NB	$6,497	February 23, 2008
1802-N	$1,465,484	November 04, 2008*
MO-050	$149,726	June 02, 2008
MO-055	$51,421	June 02, 2008
MO-358	$108,693	June 02, 2008
MO-390	$9,182	June 02, 2008
MO-900	$61,691	June 02, 2008
MO-911	$115,794	June 02, 2008
MO-950	$11,075	June 02, 2008

* Backfill completion dates

5.0 RECYCLED MATERIAL AND WASTE DISPOSAL

One of the objectives of the 100 Area demolition project was to support recycling and waste minimization. However, radiological contamination primarily due to biological vectors (i.e., mud daubers wasps) is prevalent throughout the site. This prevented the salvage or offsite transfer of material and equipment from the buildings. Due to the contamination, all of the building debris was shipped to ERDF for disposal.

5.1 WASTE DISPOSAL

Waste volume transferred to ERDF from the 100-N Building demolition project is listed in Table 3.

Table 3. 100-N Demolition Project Waste Transferred to ERDF. (2 Pages)

Building	Number of ERDF Containers	Waste Volume (m3)
105-NB	119	956
163-N	637	4,983
183-N	697	5,749

Table 3. 100-N Demolition Project Waste Transferred to ERDF. (2 Pages)

Building	Number of ERDF Containers	Waste Volume (m3)
183-NA 183-NB 183-NC		
184-N 184-ND 184-NE 184-NF	886	6,691
184-NA	93	560
184-NB	43	301
184-NC	9	54
1312-N	214	1,326
1330-N	118	877
1705-N	171	1,384
1705-NA	10	60
1706-N	101	806
1714-N 1714-NA 1714-NB 1712-N	51	494
1802-N	649	4,699
MO-050	72	435
MO-055	70	469
MO-358 MO-950	126	792
MO-390	4	25
MO-900	14	84
MO-911	12	77

6.0 OCCUPATIONAL EXPOSURES

6.1 PERSONNEL INJURIES

WCH personnel worked a total of approximately 102,475 hours (manual and non-manual, not including subcontractors), from July 2007 to December 2008, on the D4 100 Area project with one Occupational Safety and Health Administration recordable injury.

6.2 PERSONNEL RADIOLOGICAL EXPOSURES

No clothing contamination and no skin contamination incidents occurred during demolition of the thirty 100 Area buildings. Workers in support of all 100-N D4 Area work project received 56 person-mrem. All boundary air sample results were below procedural action levels for the duration of the project.

7.0 LESSONS LEARNED

7.1 CONTROLLING EMPLOYEE ACCESS IN WORK ZONES

In an effort to minimize employee injuries, WCH continued to implement a procedure requiring a temporary fence around demolition areas. This helped to control employee access in and around work zones. It is also effective in establishing the minimum distance people can be from demolition. The superintendent and the field safety representative now control the area and limit access inside the fence line. This greatly reduced the risk of injury in and around the work zone.

8.0 REFERENCES

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

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