Appendix H
March 2002 Update

1.0 Introduction

This appendix presents management strategy improvements and clarifications not previously captured in the Project Management Plan (PMP). Further this appendix documents any insights to project closure which enhance cost factors, safety concerns, resource constraints, and/or closure target dates. Upon final demolition of the 771 complex, parts of this appendix may be added to the Decommissioning Closeout Report (DCP) for the 771 Closure Project. Accordingly, this appendix has been structured and written with that end-state in mind.

2.0 Strategy Changes

2.1 Subcontracting Strategy (modification to Page 20-21 of PMP)

The project is organized with K-H managing all work through the use of primarily one single Decommissioning Subcontractor. The 771-project work scope has been broken down into two categories: "Dismatlement Sets" and "Decommissioning Areas". K-H managed contractor forces will complete the Dismantlement Set scope (conducts building operations, deactivation, and hot decommissioning [all SNM has been removed]) and the Decommissioning Subcontractor will complete the Decommissioning Area Scope (cold decommissioning and demolition activities). Under this organization, the following subcontracting strategy is implemented:

- The K-H project management team remains as designated in Figure 2-2 on page 15. Personnel from the Decommissioning Contract (MACTEC) supplement the K-H project management team. Some administrative and specialized technical support may continue to be obtained from separate procurements.
- MACTEC is responsible for
    - dismantlement of remaining process support systems, safety systems, utilities, equipment, piping, electrical systems, and interior partitions, CMU walls, and interior concrete walls/slabs.
    - removal, size reduction (where applicable), packaging, and characterization of all equipment, structural materials, piping, contaminated soil, and any radioactive or hazardous materials.
    - decontamination, demolition, and removal of all building structures.
    - backfill and site restoration.

2.2 Protected Area (PA) Closure Strategy (modification to Page 28 of PMP)

The PA reconfiguration project involved significantly reducing the size of the PA to surround only the 371 Cluster. PA shrinkage was completed in May 2001. The security isolation zone was discontinued and all fencing around the 771 Closure Project was removed. For the 771 Closure Project, these accomplishments considerably eased access to the complex.

On October 1, 1999, the 771 Closure Project downgraded the MAA to a Limited Access Area (LAA). No internal security enhancements to facilitate the PA shrinkage are now necessary. On December 17, 2001 the LAA in Building 771 was downgraded to Property Protection Area (PPA). This downgrade further eased access to work areas through allowing uncleared personnel to be granted unescorted access.

2.3 Technical Strategy (replaces Pages 35-36 of PMP)

The technical approach to the Building 771 cluster is based upon the following goals: early risk reduction, closure of the 771/774 cluster by mid-2004, and efficiency. The approach in the Building 771 cluster is still to conduct deactivation and decommissioning in parallel thus allowing the project team to better utilize the resources and reduce the overall schedule for the project. This approach is more cost-effective as it allows more work to be accomplished with fewer resources. It also significantly reduces exposure of the workers to hazards.

Below is a brief description of the generic sequence of activities that is being conducted. The actual activities and their sequence are described in IWCP packages.

- Characterization to supplement the hazard analysis.
- Develop IWCP package (s).
- Determine if asbestos containing material (ACM) will be disturbed as part of the scope of the set. If so, the set will be abated by qualified site personnel or contractor prior to work start that could disturb the ACM.
- Remove any remaining loose items/equipment from the room.
- De-energize, lock out, tag out, and disconnect electrical power to components/systems to be removed. Electrical system conduit that cannot be de-energized or is required for continued closure activities will be clearly identified. Temporary power may be utilized and will be clearly identified and controlled.
- Temporary ventilation may be used as necessary.
- Tap and Drain of all system piping and potentially process pipe removal will be completed (actual completion in December 2001). The liquid process pipe removal and hot taps were removed and size reduced (within constrains of criticality and radiological controls) under negative air pressure within gloveboxes. Process piping was cut into 2 foot long to 20 foot long sections for shipment.
- Remove equipment (gloveboxes, B-boxes, hoods, tanks, etc.) within the work set. Gloveboxes, B-Boxes and Hoods will be decommissioned using the following approach:
  - Equipment and components will be removed from the internal portions of the contamination containment device (i.e., glovebox) as needed to facilitate waste packaging.

- Internal surfaces on gloveboxes will be wiped down using tack rags, non-ionic clean solution. More aggressive techniques may be used such as abrasive grit, blast, chemical decontamination solution (outlined below), or other methods. When appropriate, the decontamination solution may be applied and removed several times to reduce surface contamination levels. When successfully decontaminated to surface contaminated object (SCO) levels, waste disposal can occur without size reduction.
  - **Cerium Wash** – A cerium acid solution is sprayed onto the contaminated surface. Sodium Hydroxide is then applied to neutralize the cerium (making it no longer an acid thus allowing it to be in contact with cloth). The surface is then wiped removing both the solution and the contamination (including plutonium contamination). The process is repeated, if necessary, until the majority of contamination has been lifted from the surface and the item being decontaminated is consistent with a SCO waste.
- Loose materials, within gloveboxes will be swept up as required.
- Selected annular tanks will be core sampled to verify that if internal contamination levels meet SCO criteria for waste disposal in lieu of size-reduction.
- Based on radiological survey measurements, an encapsulant coating may be applied to fix surface contamination during size reduction operations.
- Lead shielding on the external surfaces of the gloveboxes will be removed to minimize the generation of mixed waste. If mixed item description codes (IDCs) (lead, stainless steel, etc.) are approved, this may not be required.
- Prior to the size reduction of a glovebox, B-Box or hood, most components will be moved into one of the 771 ITCs. The ITCs are equipped with high efficiency particulate air (HEPA) ventilation to control the spread of contamination and minimize worker exposure during size reduction and waste packaging operations. (Due to the size of the component to be reduced, some components may require a containment enclosure to be erected around the equipment for in-place size reduction. However, it is expected that this option will be utilized rarely.)

- Workers may size reduce the component using a variety of methods including nibblers, saws, thermal cutting such as plasma-arc, and other metal cutting techniques. Size reduction is performed to minimize waste volume and allow packaging in approved containers. All waste material will be characterized and packaged in accordance with Site Waste Management procedures.
- After all equipment and systems have been removed the final utility and safety systems will be removed. This will include the ventilation systems and all electrical power within the area. Removing these systems allows for clear access to walls, ceilings, and floors for decontamination and building demolition.
- The now exposed room surface will be decontaminated and abated for lead, ACM, and/or PCBs in painted surfaces, as necessary. If a safety system is necessary, a portable system will be used such as portable air movers. Fire

suppression systems should no longer be required since all flammable surfaces will have been removed leaving only concrete within the area.

- Empty room surfaces will be sampled/surveyed to determine the need for further decontamination and to verify the effectiveness of the decontamination process. Wipe down and/or surface scarification methods such as scabbing or hydrolazing will typically decontaminate room surfaces.
- Under building contamination will be remediated before final building demolition but after the slab has been removed. One exterior wall of the building will be removed (presumably the front) and the exposed ground will be remediated with the remaining walls intact for contamination control purposes. If non-free release material results from this effort, it will be dispositioned in accordance with the applicable waste acceptance criteria (WAC).
- When these activities are completed and the building has been radiologically released, the building will be demolished. The resulting waste will be segregated into two waste streams: free release structural debris and free release non-structural debris. The free-release structural material (mainly concrete) will be stockpiled in accordance with the Concrete Recycling RSOP and eventually recycled. The free released non-structural debris will be packaged and shipped to the Erie landfill.

3.0 **Accomplishments**

3.1 Authorization Basis (AB) Strategy (page 28-29 of PMP)

As planned and documented in the PMP, Building 771 and 774 were transferred to a 771 Decommissioning Basis for Interim Operation (DBIO) in October 2001. Building 771 and 774 are both currently classified as Hazard Category 2 nonreactor nuclear facilities. The DBIO includes all functions originally designated in the PMP.

3.2 Regulatory Strategy (page 33 of PMP)

The DOP modification, described in the PMP, was completed on September 6, 2001. As noted, this modification included the addition of the demolition, the environmental restoration interface, RCRA units closure strategy, and the establishment of remediation waste requirements.

3.3 Relocation of Personnel Strategy (page 34 of PMP)

The phased approach of relocating personnel to temporary offices east of Building 790 is complete. All relocations have been conducted as planned per the PMP.

3.4 Reconnaissance Level Characterization Strategy (Page 47-48 of PMP)

The reconnaissance level characterization has been completed. All characterization work was conducted as planned per the PMP.

4.0 Project Updates

4.1 Building 774 Operations (replacing Pages 39-40 of PMP)

Building 774 is scheduled for demolition with Building 771. Building 774 primarily performed liquid waste treatment for Building 771 and several other site facilities. To meet the demolition schedule, the 774 operations were concluded and Site dependency on Building 774 was relieved in September of 2001.

The demolition of Building 774 will include the removal of the liquid transfer line starting at Valve 1142 (from Building 910) through Buildings 774, 771 and 776 to Valve 2646 (south of Building 778). The treatment-process interfaces which utilized these lines are summarized below. The usual interfaces, such as utilities, are not listed.

Building 910. The Building 910 tanker loading station (owned by the Remediation, Industrial D&D Site Services [RISS] project) received liquids from tankers within the PA, transferred that liquid to Building 774 where it was pumped to Building 374. This process was established so tankers did not need to go out of the PA. This process is no longer required. This transfer line will be disconnected by mid-fiscal year 2002.

Temporary Modular Storage Tanks (MSTs). The MSTs (owned by RISS) collect Solar Ponds Interceptor Trench water. This water was sent through Building 910 to Building 774 for transfer to Building 374. This transfer has been discontinued through Building 774 and accordingly, this item can be removed from the 771 Project Management Plan.

Toxic Substances Control Act (TSCA) Waste Oil Management. The TSCA waste oil storage tanks in Building 774 previously received contaminated oils from various site buildings. These oils were shipped to Oak Ridge in preparation for the tank deactivation. Demolition of these tanks is currently underway and should be completed by mid-fiscal year 2002.

Bottle Box. The Bottle Box treated aqueous, mixed waste stream by using cementation. Bottle Box operations were terminated by October 2001.

The Building 774 strategy was based on the following assumptions that are being updated here for informational purposes.

- The low-level, PCB contaminated oil stored in Building 774 will be shipped to Oak Ridge for treatment. The oily sludge from those tanks will be accepted by Building 374 in drums. *Oils were successfully shipped to*

Oak Ridge. Building 374 has received some oily sludge and will receive the remainder by mid-fiscal year 2002.

- No further oil shipments will be accepted in Building 774. *Implemented.*
- Building 774 will accept a dozen drums of laboratory waste liquids from Building 559 for treatment in the Bottle Box. No other aqueous liquids will be accepted from anywhere outside of the Building 771 cluster. *Drums accepted, restriction implemented.*
- The Bottle Box will operate only until Building 771/774 tap and drain liquids have been dispositioned.. *All tap and drain liquid systems were dispositioned as of November 2001 except System 95, which is the main tank to which all liquids were funneled. Deactivation and decommissioning of System 95 is currently underway.*
- The transfer line that pumps Solar Ponds-related water to Building 374 will be closed. *Closed.*
- Approximately 1,700 gallons of oily sludge and 37,000 gallons of water-based sludge are estimated to be in the Building 774 tanks. The oily sludge is currently an orphan waste. About a third of the water-based sludge are expected to be TRU level; the remainder may be low-level mixed, which is an orphan waste.
- The termination and stripout of the transfer line to Building 374 will be scheduled to support Building 771/774 closure. The closure project may need the capability to empty deluge tansk or pump decontamination liquids, for example, prior to strip out of the line. These lines will be stripped out during fiscal year 2003.
- Internally generated liquids will need to be pumped to Building 374 after the Building 774 pumping equipment is disabled. These liquids will include groundwater from floor sumps and could also include decontamination liquids.
- Interfaces between Building 774 and the rest of the plant assume Site schedule sequences.

4.2 Sludge and Tank Removal Strategy (replacing Pages 41-42 of PMP)

During the production era at Rocky Flats, Building 774 provided waste treatment for Building 771 and other facilities. Many of the processes were aqueous based, but there was also some oil treatment. The tanks in Building 774 are generally larger than in Building 771 and do not contain Raschig Rings. During normal operations, significant amount of sludge accumulated in many of the tanks.

Characterization of a representative portion of all tanks in Building 774 has been completed. Further, a visual inspection of 10 percent of the tanks has been done. The results of these chemical and physical characterizations are the basis for the data shown in Table 3-1. In most cases a qualitative estimate of the amount of sludge is available. The physical characteristics, which must be known to select a sludge-removal technology, are fairly well understood.

Most of the sludge is TRU waste and will require storage on-site outside the 771 Closure Project until disposal to the Waste Isolation Pilot Plant (WIPP) site. The Material Stewardship Project will store and handle the sludges until dispositioning.

However, there are still substantial uncertainties due to the complexity of sludge. These uncertainties lead to a uncertainty in the project's proposed methods, costs, schedule, and handling of the sludge and the tanks that hold sludge.

The Building 774 sludge and tank removal strategy is based on the following assumptions:

- In most cases, sludge must be broken up and manually removed from the tanks.
- The empty tanks and tanks with minimal sludge will be steam cleaned to SCO or LLW.
- In general, the standard manual, mechanical size reduction techniques used in Building 771 dismantlement will also be applied to the tanks.
- Approximately 6 to 10 of the tanks are projected to be TRU and will be size reduced using plasma arc inside containment structures.
- For oily sludge, the sludge will be solidified in drums or in-situ. For aqueous sludge, no treatment will be performed other than absorbent to dry the material or neutralization.

The current baseline assumes that approximately 25-50 percent of the tanks will be decontaminated to low level waste and the tanks will be removed from the building in their entirety. A low level/SCO tank would be sealed and shipped as its own container, placed within a cargo, or size reduced.

Table 4.2 Estimated Sludge in Building 774

Tank	Capacity (gallons)	Size of Tank (feet)	Type of Liquid	Sludge (gallons)
Bottle Box:				
2F	150	2.5 x 4	aqueous	Dry Film
71	150	2.5 x 4	aqueous	Dry Film
T7	50	2.3 x 1.6	aqueous	Negligible
T8	25	1 x 1	aqueous	Negligible
T12	1,000	6 x 6	aqueous	Negligible
OASIS:				
T1	450	4 x 7.5	aqueous	Dry Film
T2	450	4 x 7.5	aqueous	Dry Film
T374A	500	3.7 x 6	aqueous	Dry Film
T13	430	3 x 8.5	oily	Minimal (< 3 gals.)
T14	430	3 x 8.5	oily	Minimal (< 3 gals.)
Downstream:				
201	15,000	9 x 33	aqueous	250 HS
202	15,000	9 x 33	aqueous	2,500 HS
203	15,000	9 x 33	aqueous	100 MS

Table 4.2 Estimated Sludge in Building 774

204	15,000	9 x 33	aqueous	100 MS
T-40	7,300	6.5 x 27	aqueous	750 MS
Old T-40	7,300	10 x 6.5 x 15	aqueous	750 HS
Upstream:				
T1A	2,000	6 x 10.3	aqueous	40 HS
T1RF	2,000	6 x 10.3	aqueous	0
T3	50	1.5 x 4.5	aqueous	Negligible
T4L	1,400	6 x 9	aqueous	<30 MS
T4R	1,400	6 x 9	aqueous	<50 HS
T70	130	3 x 2.6	aqueous	27 MS
T73	300	1.5 x 5	aqueous	2 MS
T9	500	5.3 x 3	aqueous	100 HS
T10	500	5.3 x 3	aqueous	100 HS
210A	500	2.5 x 8	aqueous	75 MS
C1	800	6 x 5.4	aqueous	150 MS
F5 (T52)	1,500	5 x 12	aqueous	200 MS
TSCA:				
102	10,470	9 x 22.8	oily	<120 MS
103	10,470	9 x 22.8	oily	<240 MS
104			Never Used	Never Used
Reagent:				
T205	750	4 x 11.8	aqueous	Residual (dry)
T206	750	4 x 11.8	aqueous	Residual (dry)
T207	750	4 x 11.8	aqueous	Residual (dry)
T208	750	4 x 11.8	aqueous	Residual (dry)
T42	470	5.3 x 3.7	aqueous	Residual (dry)
D351	10	1.5 x 4.3	aqueous	Residual (dry)
NDT 1146	160	3 x 3.4	aqueous	Residual (dry)
NDT 1163	250	3 x 5.5	aqueous	Residual (dry)
T176	22,000	9 x 18	aqueous	Residual (dry)
T38	7,800	11 x 11	aqueous	Residual (dry)
T210B	500	4.8 x 8.6	aqueous	Residual (dry)
Steam/Process Water:				
T107	22,000	22 x 8	aqueous	Negligible
T108	22,000	22 x 8	aqueous	Negligible
NDT 1203	10	.5 x 5	aqueous	Negligible
D352	10	.5 x 5	aqueous	Negligible
NDT 1164	300	3.5 x 4.3	aqueous	Negligible
NDT 1224	100	2.2 x 3.4	aqueous	Negligible
NDT 1225	30	1.6 x 1.9	aqueous	Negligible
NDT 1234	7	.7 x 2.5	aqueous	Negligible
NDT 1232	1	2 x 3.5	aqueous	Negligible
Miscellaneous:				
T11L	400	4 x 7.3	aqueous	320 MS
T11R	400	4 x 7.3	aqueous	320 MS

HS – hardened sludge
MS – mobile sludge

4.3 Building 774 RCRA Closure Strategy (replacing Page 43 of PMP)

All RCRA related equipment will be closed in accordance with the requirements in the DOP through unit removal. Work completion will be documented in a

summary report submitted to CDPHE after the final unit has been removed. The closure of floor areas will be similar to Building 771.

The number of pieces of equipment (12 idle equipment tanks, 30 regulated tanks, and 4 gloveboxes) is much smaller than that in B771, but the unknowns are greater. The amount and consistency of the sludge in several tanks is still known. All sludge with the exception of the oil tanks and old T40 are non-hazardous. The radioactive contamination levels in the tanks is primarily TRU.

Most sludge will need to be removed before disposal of a tank. After gross sludge removal, the tank walls may need additional cleaning, which is proposed to be conducted with a hot pressurized water jet or equivalent (e.g. Cerium Nitrate). The tanks may be size reduced and disposed of as TRU or may be shipped whole as SCO.

Liquefaction of sludge and any type of spray cleaning will require transportation of aqueous waste to Building 374 or AWTS, probably by use of a truck. Disposal of waste liquids and sludges may present some difficulties. Low-level aqueous based waste either acidic or caustic should be able to be managed by Building 374. However, oil based waste will be treated (solidified) in-situ or in Building 771.

There are 6 RCTA tanks that are in excess of 2,000 gallons. If these tanks are not size reduced, partial demolition of the building will be required to remove the tanks. One tank will require some special consideration. T-40 (old) is a vault or cistern type of tank with the floor of Room 203 providing the top of the tank. Access is through a manhole. Access through hone of the walls of the building will be required before this tank can be cleaned and removed. This may require a containment structure during removal activities.

For decommissioning and closure purposes, there are some convenient groupings that could be used to facilitate disposition. In Room 210, there are 5 tanks and 1 glovebox from OASIS that handled waste oil. Also in Room 210 there are 3 tanks and 1 glovebox for the bottle box which have been removed. Room 241 contains 4 large tanks currently permitted for aqueous waste treatment. Room 202 now contains 5 interim status tanks with aqueous waste (3 have been removed). Basement Room 102 contains 6 interim status tanks of the same type and 3 idle equipment tanks. Basement Room 103 contains 2 idle equipment tanks and 1 permitted tank. Room 320 has the 2 PCB oil tanks.

4.4 Oils Strategy (replacing Page 44 of PMP)

Two types of waste oil were present in Building 774 and shipped to treatment or alternate storage.

- In B774, the OASIS process was previously used to treat low-level oil. Now all oils from this system with the exception of the residuals in the tanks, have been treated.
- B774 also stored about 10,000 gallons of PCB-contaminated low-level oil. This oil has been shipped to Oak Ridge for treatment. The oily sludge will also be sent to Oak Ridge.

The following are the assumptions associated with the oil strategy:

- B774 will not re-start the OASIS oil solidification process. The treated oil is being profiled for shipment to the WIPP.
- All On-Site containerized oil, generated prior to September 2001, has been treated in Building 771.
- PCB-contaminated low-level oil has been shipped to Oak Ridge.
- Oak Ridge will also accept radiologically contaminated oil that does not contain PCB contamination.

Building 774 operations has been terminated to support the decommissioning mission. Since OASIS has not operated in some time, the project did not re-start this operation. The previous inventory of this oil has been treated. Other projects may generate oil and any such oil can be handled by those projects in the same manner (solidification) without further reliance on Building 774.

The table on page 45 of the PMP outlining uncertainties is out of date and accordingly removed. These uncertainties have been resolved.

4.5 ER Characterization Strategy (replacing paragraph 1 on Page 45 of PMP)

Decommissioning will interface with ER to achieve an integrated process to minimize risk to workers and the environment, minimize generation of remediation wastes, streamline the technical process and reduce project costs. The first esstintial interface activity was the Phase 1 ER characterization. (Figure 3-2 in Section 3.2.10 documents the key ER interfaces during the demolition process.) The Phase 1 ER characterization was completed in FY01. The first phase characterization was sufficient to determine that soil contamination was not so extensive that the building will need to be removed to remediate the soils. Specifically, under-building contamination was found to be significantly lower than originally estimated even under key areas such as Room 141. Accordingly, estimates for soil extradition has changed from 3,000 cubic yards down to 300 cubic yards. However, follow on Phase 2 characterization will occur when the floor slabs are removed to determine actual the nature and extent of contamination to be remediated.

4.6 Incompatible Liquids (remove pages 51-54 of PMP)

All systems, gloveboxes, tanks, and lines have been characterized. There are no incompatible liquids in the 771 Project.

4.7 Central Size Reduction Strategy (update to pages 55-56 of PMP)

Size reduction has generally followed the plan outlined in the PMP. However, there are now three inner tent chambers (ITC): one manual centralized size reduction station and two plasma centralized size reduction stations.

Additionally, the second paragraph of this section must be rewritten as follows:

> Automated in situ size reduction is not currently planned for the 771 project. Alternative methods to reduce gloveboxes and tanks or to decontaminate these items have been successful to-date. Accordingly, there has not been a need for automated robotic size reduction. However robotic tools are prepared and ready for use, if required.

Finally, the following table (replacing the table on page 56) documents the gloveboxes and tanks that are expected to exceed SCO levels and cannot be moved. This table is based on the current historical knowledge and characterization data.

Gloveboxes - cannot move within B771	Tanks - cannot move within B771	Gloveboxes – cannot move within B774	Tanks - cannot move within B774
▪ 37 & 38, room 149 ▪ 42, room 149 ▪ 29, room 149 ▪ SR12, room 146A ▪ 6 & 7, room 114 ▪ 15, room 114	▪ D927, room 149 ▪ D933, room 149 ▪ Plenum Deluge Tank, room 190 ▪ 309 E & W, room 309	▪ None	▪ F5 ▪ T-40 (new) ▪ T-40 (old) ▪ 102 ▪ 103 ▪ 201 ▪ 202 ▪ 203 ▪ 204

4.8 Surface Contaminated Objects (update to pages 58-60 of PMP)

Disposal of low level waste via SCO I and SCO II has generally progressed as noted within the body of the PMP. However, a few updates need to be made.

First, the procurement of top loading cargo containers, as described in paragraph four, has not proceeded as planned. At this point, we do not foresee ever attaining these cargo containers.

The 771 Closure project has now loaded both SCO I and SCO II waste into cargo containers. (This is an update to the third sentence in paragraph five.)

Finally, the eighth paragraph of this section notes the amount of LLW and TRU waste remaining in the project. This paragraph and the corresponding table are herein replaced by:

The projected low-level waste for the remainder of Building 771/774 dismantlement is about 504,000 cubic feet (14,300 cubic meters). Of this, about 68% of the low-level waste is expected to be packaged as SCO waste (343,200 cubic feet or 9,700 cubic meters). The projected TRU/TRM for the remainder of Building 771/774 dismantlement is about 40,000 cubic feet (1,130 cubic meters). The following table provides examples of items that may meet the SCO requirements after decontamination; the items listed in this table are based on current operating experience.

Examples of the bulk of low-level waste in B771/774 dismantlement	Low-level gloveboxes and tanks remaining to be dismantled in B771/774	Items previously assumed to be TRU that may meet SCO requirements
▪ Ladders ▪ Bench-top equipment such as glassware, pans, scales, furnaces, and instruments ▪ Some cabinets ▪ Desks, tables, and miscellaneious office furniture ▪ Storage bins ▪ Shelves, racks, and brackets ▪ Platforms ▪ Certain pumps, reservoirs, and compressors ▪ Control and power panels ▪ Hoists ▪ Dollies and hand trucks ▪ Miscellaneous small items	▪ Air tank (room 304) ▪ Tank (romm 146A) ▪ Hood (room 151B) ▪ Condensate tank (room 149A) ▪ Two tanks (room 233) ▪ Eleven tanks (set 55B) ▪ Twenty-one tanks (room 247) ▪ Expansion tank (room 246A) ▪ Tank (room 249 north side) ▪ Tank T450-956 (B774 room 202) ▪ Hot water tank (B774 room 302)	▪ Tanks T102 & T103 (B774 room 220, PCB contaminated)

4.9 Ventilation (update to pages 61-63 of PMP)

Facility ventilation is following the plan outlined in the PMP, except that the zones will remain as currently designated (four zones) instead of being reconfigured down to two zones as outlined in the second full paragraph.

4.10 Decontamination (update to pages 64-70 of PMP)

The decontamination plan denoted in the PMP remains primarily unchanged with a couple exceptions. The floor areas in Decommissioning Area AE will be removed in its entirety (100% instead of the 25% noted in paragraph 9 on page 65).

The following table, replacing the table on page 66, provides a corrected estimate of the size of the tasks.

AREA	FLOORS ft^2	WALLS ft^2	CEILINGS ft^2	FLOOR REMOVED ft^2	SURFACE DECON FLOORS ft^2	SURFACE DECON CEILINGS ft^2	SURFACE DECON WALLS ft^2

AA	8,400	22,400	7,800	N/A	800	400	300
AB	5,800	11,000	5,800	N/A	600	300	0
AC	7,500	17,400	7,000	N/A	800	300	500
AD	5,500	14,400	5,500	N/A	500	300	30
AE	26,300	73,200	27,200	6,600	19,700	3,500	3,400
AF	36,200	85,900	31,800	19,000	17,200	2,200	4,400
Rm141	300	1,300	300	300	0	0	0
AH	71,500	123,300	71,100	1,200	28,600	3,600	1,900
AJ	7,600	12,200	5,600	0	400	1,800	600
AL	0	52,800	91,200	0	0	0	2,600
AM	38,600	68,400	22,100	0	5,600	1,100	6,100
AN	5,000	10,800	5,000	0	300	300	1,280
TOTALS	212,700	493,100	280,400	27,100	74,500	13,800	21,110

The table on page 68 providing a summary of the proposed disposition of the Building 771 outbuildings and structures, must be updated to note that the USTs will be removed (instead of abandoned as noted in the PMP) and only portions of Building 775 will be abandoned.

4.11 Environmental (update to pages 92-95 of PMP)

4.11.1 Waste Projections

Table 4.11.1 provides the projected waste quantities throughout the 771 Closure Project. This table information could be modified in subsequent revisions of this appendix.

Waste	FY01				FY02				FY03				FY04
Type	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q
TRU/M	2	3	4.5	4	6.5	12.5	12.5	7.5	2.5	3	1	0.5	0
LLW/M	8	4	8	16	10	106	76	50	44	56	91	58	22
ACM	1	0	1	2	0	0	0	0	0	7	1	38	9
Sanitary	6	0	5	9	0	0	0	0	0	28	6	151	38

All waste quantities are reported in 1,000 cubic feet
TRU/M is radiological and mixed radiological transuranic waste
LLW/M is radiological and mixed radiological low level waste
ACM is asbestos containing waste, the radiological level has not yet been characterized
Sanitary is sanitary waste to be disposed off-site
Building rubble used for recyclable metal are not included.

5.0 **Technical Clarifications** (new addition to PMP)

5.1 Safeguards Termination

Nuclear materials safeguards refer to the programs and policies necessary for control, protection, and accountability of nuclear materials. Because the B771 structure contributes to the physical protection of remaining nuclear material hold-up, and to ensure all hold-up has been properly dispositioned, DOE, RFFO must concur with safeguards termination before demolition of the facilities can occur. This section will discuss the decommissioning activities that must be completed prior to termination, the measurement scans that will validate the absence of Special Nuclear Material (SNM), and termination activities including a termination survey by DOE-RFFO. Also presented will be a discussion on expected Inventory Difference (ID) and on terminating Material Balance Areas (MBAs) 1371-30 and 0389-97.

Before safeguards on a facility can be terminated, all equipment with measured SNM hold-up including gloveboxes, tanks, piping, transfer systems, ducts, plenums, and filters must be removed and packaged. Following equipment strip-out, decommissioning areas will undergo structural decontamination prior to a Pre-Demolition Survey (PDS) and a wall-to-wall measurement scan. Inventory reports on the B771 MBAs from facility inception to termination must be reconciled, and any contribution by B771 to the site historical Inventory Difference (ID) must be documented and presented to DOE, RFFO for disposition. Materials Control and Accountability (MC&A) will conduct a termination review and assessment. Following the MC&A assessment a DOE termination survey will verify the absence of classified and nuclear materials, accept any ID, and approve safeguards termination.

5.2 Wall-to-Wall scan and PDS

Both a PDS and a wall-to-wall scan will confirm the absence of significant quantities of SNM. As an alpha-direct measurement, the PDS cannot detect sub-surface contamination or SNM. The PDS will scan 100% of surfaces in Class 1 areas of B771 and B774, which include about 44,700 square meters of former process areas. Other areas, such as administrative offices and maintenance shops, will be surveyed as Class II and III areas.

The primary objective of a PDS is to ensure that building surfaces meet free release criteria for disposal. For free-release, average alpha contamination on surfaces cannot exceed 100 dpm over 100 cm^2, total contamination cannot exceed 300 dpm per 100 cm^2, and removable contamination cannot exceed 20 dpm over 100 cm^2. The Safeguards Termination Limit (STL) is .5g SNM per square foot, at which alpha contamination would exceed the free-release criteria by many orders of magnitude. Thus, the PDS will validate the absence of SNM from all surfaces.

A gamma-ray spectroscopy survey, the wall-to-wall scan is capable of detecting SNM from behind up to two inches of concrete. Bismuth Germinate Oxide detectors will be operated in all areas where they will record gamma-rays in counts per second. Results will be reported as grams as a point source shielded by two inches of concrete, and will be plotted against a normal distribution. Statistical variability will determine the need for investigations. If only random variability in the data exist, the area will be declared ready for termination validation.

Like the PDS, a graded approach to determining the extent of gamma-ray surveying required for an Area will be employed. In accordance with a detailed plan for the survey, Class I areas will undergo extensive surveying while office areas, locker rooms, and the maintenance shop will undergo less extensive surveying.

5.3 Decommissioning Sequence

Following the strip-out of all equipment, asbestos, and electrical, safety, and utility systems, areas will undergo structural decontamination. Temporary containment structures will be erected where necessary to isolate decontamination areas from the balance of the structure and to provide access controls after surveys. Temporary lighting, power, and utilities will be installed. Interior, non-load bearing block walls, gypsum walls and framing will be packaged for disposal. Paint will be stripped from all surfaces and packaged. Remaining walls, ceilings and floors will be decontaminated using one or more of the techniques described in section 3.2.7. Except for sections of Area AH, the gamma-ray scan will follow structural decontamination activities. The PDS will always follow structural decontamination.

Both a PDS and gamma-ray scans could be performed in an Area well in advance of seeking facility safeguards termination. Isolation controls to prevent re-contamination will be implemented to restrict access to areas that have undergone a PDS and/or gamma-ray scans. Access controls may include structural isolation of the area if possible, installing cypher-locks at each access point, and limiting access to those who have completed a read and sign document. Administrative controls may include posting of signs and placards, implementation of an operations order, and monitoring of all activities by Configuration Control Authorities (CCAs).

FU2B filter plenum and the duct leading from it to FU2A filter plenum will be the last remaining process equipment containing measurable amounts of hold-up. At this point, wall-to-wall scans will have cleared all first floor areas including the tunnel to B776 except corridors leading to second floor access, B774, the second floor supply rooms, areas west of the FU2 plenums, and areas south of the main filter plenum in Area AH. Filters in the main plenum were changed in the mid

1990s and they, and internal surfaces, will contain lesser amounts of SNM per square foot.

After all components of FU2B filter plenum and the duct(s) from FU2B to FU2A are packaged, gamma-ray scans on remaining sections of Areas AH. the tunnel leading from the main filter plenum to the stack, and the lower 10 feet of the stack will be performed. PDS and core sampling have been performed on the upper sections of the stack and validate the termination limit. Scans of any remaining corridors or areas needing re-scanned will be performed.

Results of all gamma-ray scans will be summarized and presented to MC&A. Inventory reports for the two MBAs will be prepared and the MBAs closed. Any TRU waste generated by remaining decontamination activities will be below the termination limit . Any ID will be calculated for inclusion in the termination assessment. MC&A will conduct a review and assessment and present a summary and recommendation for termination to DOE. DOE will then conduct a termination survey before approving safeguards termination.