

APPENDIX A

MATERIALS DECOMMISSIONING INSPECTION FIELD NOTES
FOR FACILITIES NEEDING SIGNIFICANT DECOMMISSIONING EFFORT

Region III

Inspection Report No. 07000008/2002-002
License No. SNM-7
Docket No. 070-00008

Licensee (Name & Address) Battelle Memorial Institute
Battelle Columbus Laboratories Decommissioning
Project

Licensee Contact Craig L. Jensen, Radiation Safety Officer
Telephone No. (614) 424-5170

Date of Last Inspection April 23-25, 2002
Date of This Inspection July 18-19, 2002
Date of Next Inspection August 2002

Type of Inspection: Announced Unannounced
 Routine Special
 Initial Decomm. Reinspection of Decomm.

Brief Description of Inspection Activities:

The NRC conducted an inspection that reviewed procedures and the implementation of procedures on a loading of a transportation cask. The licensee considers this medium level radioactive waste shipment an active test of procedures and training for future shipments of high level radioactive waste. The NRC reviewed no other portions of the program during this inspection.

Brief Description of Findings and Action:

The area above was inspected in accordance with the appropriate inspection procedures. No violations of NRC requirements were identified.

Summary of Findings and Action:

- No violations cited, clear NRC Form 591 or regional letter issued
- Violation(s), clear NRC Form 591 issued
- Violation(s), regional letter issued
- Followup on previous violations

Inspector: 
Michael LaFranzo; Radiation Specialist

Date: 8/9/02

Approved:

Chris Miller
Chris Miller; Chief, Decommissioning Branch

Date:

08/09/2002

[Field notes are to be used by the inspector to assist with the performance of the inspection. Note that all areas indicated in the field notes are not required to be addressed during each inspection. However, for those areas not covered during the inspection, a notation ("Not Reviewed") should be made in each section where applicable. Additionally, all areas covered during the inspection should be documented in sufficient detail to describe what activities and/or records the inspector observed. The fieldnotes to the "Decommissioning Inspection Procedure for Materials Licensees" should be supplemented with: (1) the applicable inspection procedures for operating facilities provided in the Inspection Procedure (IP) 87100 series; and (2) other written documentation of the inspection, as necessary.]

1. **SUMMARY OF DECOMMISSIONING STATUS**

The checklist below is intended to provide, in a written outline format, summary documentation of the status of the licensee's facility in the decommissioning process. This documentation will be filed as part of the inspection report. The inspector should use this information to develop each inspection plan(s) for the various stages of decommissioning, namely, before dismantlement, during dismantlement and site remediation, and after site remediation.

- A. Licensee ceased operational program. (X) Y () N
- B. Required decommissioning financial assurance mechanisms in place. (X) Y () N
- C. Decommissioning Plan (DP) required. (X) Y () N
- D. Licensee final survey required. (X) Y () N
- E. NRC confirmatory survey required. (X) Y () N
- F. NRC closeout inspection required. (X) Y () N
- G. Licensee doing decommissioning planning and preparation before dismantlement. (X) Y () N
- H. Licensee actively remediating site. (X) Y () N
- I. Licensee completed site remediation. () Y (X) N

2. **INSPECTION OF KEY DECOMMISSIONING ACTIVITIES**

The following is a generic checklist of major licensee activities occurring at various stages of decommissioning. From this generic checklist and from facility-specific activities you identify, develop the set of licensee activities to be inspected - for each individual inspection throughout the decommissioning process. Plan to inspect licensee activities that present potential high-risk conditions. Then apply the standard health and safety inspection areas in Section 3 of these fieldnotes (taken from the applicable 87100 series IP for the licensee's operational program) to the specific licensee decommissioning activities that are being inspected.

To complete the licensee activities checklist, the inspector will need to obtain information from the Licensing Project Manager, review the DP, make observations at the licensee's facility, review licensee records, take measurements and samples of

contaminants, and undertake other investigative measures, to determine whether the licensee is meeting all regulatory and DP commitments for each decommissioning activity the licensee is performing.

A. LICENSEE ACTIVITIES INSPECTED BEFORE DISMANTLEMENT

1. Licensed material used during operations has been removed from site. () Y (X) N
2. Facility license conditions are in place and met by licensee. (X) Y () N
3. Site security and control of contaminated material being maintained in compliance with 10 CFR 20.1801 and 20.1802. (X) Y () N
4. Support systems and services (e.g., lighting, water supply) are in place. (X) Y () N
5. Decommissioning schedules are consistent with timeliness requirements in 10 CFR 30.36, 40.42, and 70.38. () Y (X) NR
6. Licensee's recordkeeping is consistent with 10 CFR 30.35, 40.36, and 70.25. () Y (X) NR
7. Financial assurance requirements are being maintained in accordance with 10 CFR 30.35, 40.36, and 70.25. () Y (X) NR
8. Licensee is conducting site characterization in accordance with applicable radiation protection procedures. () Y (X) NR
9. Construction of new site features (e.g., roads, rail spurs, staging areas, sediment control ponds) conforms to DP and does not compromise health and safety of workers and public. (X) Y () N
10. Licensee activities conform to specific license conditions and licensee programs and procedures. (X) Y () N

Basis of Findings:

The licensee posted the load transfer area and radiation protection measurements were in place to ensure radiation doses were kept ALARA.

B. LICENSEE ACTIVITIES INSPECTED DURING DECONTAMINATION, DISMANTLEMENT, AND SITE REMEDIATION

- i. Site security and control of contaminated material being maintained in compliance with 10 CFR Part 20. (X) Y () N
 - ii. Decontamination and dismantlement of structures are being performed consistent with DP and sound industry practice (structures include buildings, utilities, treatment lagoons, etc.). () Y (X) NR
3. Decontamination and remediation of the following are being performed consistent with DP and sound industry practice:
- a. Soil. () Y () N
 - b. Sediment. () Y () N
 - c. Surface waters. () Y () N

- d. Groundwater. () Y () N
- e. Other mediums: () Y () N

This area was not inspected during this inspection.

4. Licensee release and disposal of decommissioning wastes are consistent with DP and approved by NRC for:

- a. Liquid wastes (e.g., groundwater, surface water, liquid from treatment ponds, process liquids). () Y () N
- b. Solid wastes (e.g., building materials, process and other facility equipment, concrete rubble, soil). (X) Y () N
- c. Other wastes: () Y () N

The licensee is shipping radioactive waste to an authorized recipient. The licensee considers this shipment to be a test for future high level radioactive waste shipments.

- 5. Temporary, on-site storage of low-level radioactive wastes from decommissioning meets license conditions and guidance in IP 84890. () Y () N

This area was not inspected during this inspection.

- 6. Packaging and shipment of radioactive waste materials meet requirements in 40 CFR Parts 173-178 and 10 CFR Part 71. (X) Y () N

The inspector observed the licensee package, post, label and perform radiation surveys of the shipment. The inspector did not identify any concerns regarding the shipment preparation.

- 7. Restoration of site - Licensee has restored site to meet license conditions and NRC-approved plans. () Y () N

This area was not inspected during this inspection.

- 8. Licensee survey of material and equipment for free release sufficient to demonstrate compliance with release criteria.

This area was not inspected during this inspection.

Basis for Findings:

The inspector observed decommissioning activities during the inspection. See section 3.L. for further evaluation on transportation of licensed material.

C. LICENSEE ACTIVITIES INSPECTED AFTER
COMPLETION OF SITE REMEDIATION

Basis for Findings:

This section is not applicable.

3. **INSPECTION OF STANDARD HEALTH AND SAFETY AREAS
FROM THE OPERATIONAL INSPECTION PROGRAM**

Identify the standard inspection areas (from the inspection program of the licensee's operational program) to be covered during each decommissioning inspection. [Inspection areas A through L below correspond to the typical inspection areas in the 87100 series IPs that are applicable to decommissioning.] Then identify the new activities within the standard inspection areas undertaken by the licensee during decommissioning. Some of the new activities given below, as well as any other activities the inspector identifies, should be considered inspection items under the general set of health and safety inspection areas used in the applicable 87100 series IP.

Minimum inspection areas for the initial decommissioning inspection: decommissioning organization (A.1); decommissioning activities in compliance with NRC-approved DP (A.2); licensee procedures for implementing the DP (A.3); Radiation Safety Committee (RSC) and Radiation Safety Officer (RSO) responsibilities (A.4); and the licensee's decommissioning training program (E.1).

A. GENERAL OVERVIEW

1. Describe the licensee's decommissioning organizational structure:

The licensee's organization was as described in the Decommissioning Plan, which was tied down in Amendment 23. The RSO performs general over-sight of the radiation protection program, and insures compliance with license conditions. The licensee's Radiological Technical Support Manager (who is also the Associate Radiation Safety Officer (ARSO)), and Radiological Field Operation Manager are responsible for the day-to-day radiation safety program.

2. Licensee is performing decommissioning activities in compliance with its approved DP. (X) Y () N
3. Licensee has implemented procedures for the decommissioning activities identified in the DP. (X) Y () N
4. The RSC and RSO fulfill license requirements to deal with all decommissioning activities. (X) Y () N

Basis for Findings:

The inspector noted that the RSO was implementing the program that was inspected against to ensure compliance with NRC regulations. Other aspects of this section were not inspected at this time.

B. FACILITIES

1. Describe, from field observation, the licensee-identified facilities and outdoor areas to be decommissioned:

During the inspection, the inspector did not take a site tour to adequately address this area. However, the inspection planned for August 2002 will address this area.

2. The licensee's remediation plan includes all the contaminated facilities and areas on-site and off-site. () Y (X) NR

3. All essential systems and services (e.g., electrical power, water supply, communications systems) are in place and functional for the planned decommissioning activities. () Y (X) NR

4. Licensee's emergency plan is in place and operative for the duration of decommissioning. () Y () N

This area was not reviewed during this inspection.

5. For complex sites needing site characterization, describe the key site characterization activities to be performed by the licensee to determine the nature and extent of contamination:

This area was not reviewed during this inspection.

6. Licensee's characterization activities performed in conformance with good industry practice. (X) Y () N

C. EQUIPMENT AND INSTRUMENTATION

1. Survey instruments are applicable to contaminants of interest. (X) Y () N

2. Use of survey instruments appropriate for site. (X) Y () N

Basis for Findings:

The inspector noted that the licensee was using appropriate radiological survey instruments to properly analyze and address radiological conditions during the cask loading and survey of the transportation container.

D. MATERIALS

1. Radioactive materials licensed during operations have been removed offsite; residual quantities conform to license conditions. Y N

This area not reviewed during this inspection.

2. Security and control of licensed materials, including contaminated areas, is being maintained. Y N

Basis for Findings:

E. TRAINING

1. Licensee has developed training program for new decommissioning activities (e.g., demolition of structures, excavation of soil); program is adequate. Y N
2. Training program being effectively implemented. Y N

Basis for Findings:

The inspector performed interviews with staff involved with the loading and transportation of the cask containing radioactive material. The inspector noted that all individuals interviewed had appropriate knowledge concerning their duties and were implementing the program appropriately.

F. AREA RADIATION SURVEYS AND CONTAMINATION CONTROL

1. Area surveys are being performed in areas being decommissioned. Y N
2. Where active remediation (e.g., demolition of structures, excavation of soil) is being performed, radiation levels in unrestricted areas do not exceed 2 mrem in any one hour. Y N

Basis for Findings:

Surveys by the inspector did not identify any radiation levels or contamination above NRC requirements.

G. RADIATION PROTECTION

1. The licensee's approved health physics program is being implemented in the field for new decommissioning activities. Y N
2. Site security and control of contaminated material are in compliance with 10 CFR 20.1801 and 20.1802. Y N

H. RADIOACTIVE WASTE MANAGEMENT/EFFLUENTS/ENVIRONMENTAL MONITORING

1. Offsite disposal of decommissioning wastes conforms to free release criteria and disposal site requirements. (X) Y () N

The licensee prepared a shipment of radioactive material for disposal to an appropriate recipient.

2. All new effluent releases conform to DP and applicable regulations. () Y () N

This area was not reviewed during this inspection.

3. The licensee's environmental monitoring program is being implemented in conformance with the DP and all applicable limits are being met. () Y () N

This area was not reviewed during this inspection.

4. Temporary storage/staging areas for radioactive wastes from building demolition, equipment dismantlement, soil excavation, etc., are adequately posted and protected. (X) Y () N

Basis for Findings:

During the inspection the licensee acknowledged that elevated radiation levels outside JN1 will be present during the loading of future casks that will be shipping high level radioactive waste off the site. The licensee will monitor radiation levels and install physical barriers where needed.

I. RECORDKEEPING FOR DECOMMISSIONING

1. Copies of the licensee's decommissioning cost estimates and funding methods are on file. () Y () N
2. Licensee has adequate records for decommissioning activities performed (e.g., for decontamination and dismantlement of structures; decontamination and remediation of soil, sediment, surface waters, groundwater; surveys of remediated facilities). () Y () N
3. Licensee's financial assurance conforms with the financial assurance requirements of NRC-approved possession limits and NRC regulations. () Y () N

Basis for Findings:

This area was not reviewed during the inspection.

J. TRANSPORTATION

1. Describe the licensee's program to package and ship decommissioning waste materials:

During the inspection, the licensee was loading and preparing for shipment a cask of 10 barrels containing radioactive waste.

2. Licensee's program meets all applicable 10 CFR and 49 CFR requirements for marking labeling, placarding, and shipping paper requirements for radioactive waste shipments.

(X) Y () N

Basis for Findings:

During the inspection, the inspector observed the preparation and cask loading. During the inspection, the inspector noted three issues during the loading and shipment preparation of the cask. These were:

- 1) **During the loading of the cask, the crane operator was sometimes in awkward physical positions making the operation of the crane difficult. During this operation, the licensee did not experience any significant difficulties in crane manipulation. However, larger quantities of radioactive material and higher exposure rates during crane operation could cause unnecessary radiation exposures if the crane operator is delayed from placing the barrels into the cask. The licensee indicated that they would address this area and have the issue solved prior to the next loading.**
- 2) **A crane rotator was not used for this shipment because the rotator was at another facility. The licensee indicated that the crane operator will be fully trained in the rotator's operation prior to movement of the high level radioactive waste into casks.**
- 3) **The radioactive waste disposal site (Hanford) has requested additional radiation surveys on the barrels containing high level radioactive waste. According to the licensee, this could increase the overall doses received by radiation workers. The licensee is looking into ways to either provide equivalent information to Hanford or perform radiological surveys in such a manner to keep doses ALARA.**

At present, the licensee is awaiting approval for the shipment of the high level radioactive waste. The licensee expects to gain approval and move shipments this calendar year.

No violations of NRC requirements were identified concerning this section.

K. POSTING AND LABELING

1. All contaminated areas, waste processing areas, and waste handling areas are posted in conformance with regulations.
2. Packaged radioactive waste materials are labeled in accordance with regulations.

(X) Y () N

(X) Y () N

Basis for Findings:

While reviewing the licensee's health physics practices, the inspector noted that posting and labeling were properly addressed in the areas inspected.

L. OCCUPATIONAL HEALTH AND SAFETY

1. Describe the occupational health and safety observations made at the licensee's facilities:

Safety shoes, glasses and helmets were required in areas inspected. All personnel working in these areas were provided with the appropriate equipment.

2. Licensee and Occupational Safety and Health Administration were informed of occupational health and safety issues observed during the inspection.

Y N

4. **VIOLATIONS, NON-CITED VIOLATIONS, FOLLOWUP ITEMS, AND OTHER ISSUES**

Briefly state (1) the requirements and (2) how and when the licensee violated the requirement. For non-cited violations, indicate why the violation was not cited. Briefly describe followup items and other issues.

No violations of NRC requirements were identified during this inspection. However, the inspector noted four issues that the licensee will address prior to future cask loadings of high level radioactive waste. See sections 3.H (one issue) and 3.J (three issues) for details.

END