NRC FORM 591 PART 1
(8-1997)
10 CFR 2.201

U.S. NUCLEAR REGULATORY COMMISSION

SAFETY AND COMPLIANCE INSPECTION

1. LICENSEE	2. REGIONAL OFFICE
Battelle Memorial Institute West Jefferson, Ohio REPORT NUMBER(S)	REGION III US NUCLEAR REGULATORY COMMISSION 801 WARRENVILLE ROAD LISLE IL 60532-4351

3. DOCKET NUMBER(S)	4. LICENSE NUMBER(S)	5. DATE(S) OF INSPECTION
070-0008	SNM-7	2/1-3/03

LICENSEE:
The inspection was an examination of the activities conducted under your license as they relate to radiation safety and to compliance with the Nuclear Regulatory Commission (NRC) rules and regulations and the conditions of your license. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector. The inspection findings are as follows:

☒ 1. Based on the inspection findings, no violations were identified.

☐ 2. The violation(s), specifically described to you by the inspector as non-cited violations, are not being cited because they were self-identified, non-repetitive, and corrective action was or is being taken, and the remaining criteria in the NRC Enforcement Policy, NUREG-1600, to exercise discretion, were satisfied. _____ non-cited violation(s) were discussed involving the following requirement(s): _____

☐ 3. During this inspection certain of your activities, as described below and/or attached, were in violation of NRC requirements and are being cited. This form is a NOTICE OF VIOLATION, which is required to be posted in accordance with 10 CFR 19.11.

STATEMENT OF CORRECTIVE ACTIONS

I hereby state that, within 30 days, the actions described by me to the Inspector will be taken to correct the violations identified. This statement of corrective actions is made in accordance with the requirements of 10 CFR 2.201 (corrective steps already taken, corrective steps which will be taken, date when full compliance will be achieved). I understand that no further written response to NRC will be required, unless specifically requested.

TITLE	PRINTED NAME	SIGNATURE	DATE
LICENSEE			
NRC INSPECTOR	Michael McFranzo		2/3/03

NRC FORM 591 PART 1 (8-1997)

INSPECTOR

2-21

APPENDIX A

MATERIALS DECOMMISSIONING INSPECTION FIELD NOTES
FOR FACILITIES NEEDING SIGNIFICANT DECOMMISSIONING EFFORT

Region III

Inspection Report No.	**07000008/2003-001(DNMS)**
License No.	**SNM-7**
Docket No.	**070-00008**
Licensee (Name & Address)	**Battelle Memorial Institute** **Battelle Columbus Laboratories Decommissioning Project**
Licensee Contact	**Craig E. Jensen, Radiation Safety Officer**
Telephone No.	**(614) 424-5170**
Date of Last Inspection	**October 29-31, 2002**
Date of This Inspection	**February 1-3, 2003**
Date of Next Inspection	**March 2003**

Type of Inspection:
(X) Announced ( ) Unannounced
(X) Routine ( ) Special
( ) Initial Decomm. (X) 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 two transportation casks. The inspectors also observed a State of Ohio representative and three Public Utility Commission of Ohio agents perform surveys and examinations of the casks, trucks and trailers.

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:

(X) 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

This inspection did not review the violations identified during the 2002-003 inspection as the inspector's objective during this inspection was to review the cask loadings and shipment procedures.

Inspectors: George M. McCann 03/3/03
George McCann; Senior Radiation Specialist — Date

Michael LaFranzo 2/20/03
Michael LaFranzo; Radiation Specialist — Date

Approved:
Chris Miller; Chief, Decommissioning Branch

Date: 3-4-03

[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

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. (In process) (X) Y ( ) 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 areas outside the building where the licensee anticipated elevated radiation levels. The inspector found that radiation protection measures were in place to ensure radiation doses were kept ALARA.

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

1. Site security and control of contaminated material being maintained in compliance with 10 CFR Part 20. (X) Y ( ) N

2. 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 inspectors observed personnel loading the TRU waste into two CNS 10-160B (Type B) shipping casks. The Type B casks are expected to be shipped for disposal at the DOE waste site in Hanford, Washington. The Department of Energy (DOE) owns the Transuranic (TRU) waste, while Battelle is the contractor authorized to decommission the West Jefferson facility.

These cask loadings are the second and third in a series of loadings and shipments which the licensee plans to complete within the next 9-12 months. This transfer of TRU waste to the Hanford, Washington site will significantly decrease the quantity of radioactive material at the West Jefferson site.

The inspector's review and observations of the licensee's cask loading operations identified no procedural changes since the last cask loading. The inspectors noted some minor difficulties in loading the casks as a result of the licensee not using a crane rotator, which had been used in a loading prior to this shipment. The rotator is not required procedure. The inspectors did not identify any significant issues which might impact future shipments.

Licensee personnel indicated that elevated radiation levels outside JN1 would be present during the loading of the shipping casks. Because of this, physical barriers were installed and areas monitored where it was anticipated and/or identified that elevated radiation levels would exist. The licensee staff indicated that these areas will also need to be monitored and physical barriers installed during future cask loadings to ensure compliance with NRC

regulations. The Health Physics staff is performing dose assessments and dose predictions for future loadings to keep doses ALARA.

A DOE representative reviewed the licensee's documentation of TRU waste shipment contents including, but not limited to, the packaging and loading of the TRU waste. The NRC inspectors noted that the DOE representative did not find any substantial issues with the waste loading. In addition, the inspectors were briefed regarding the DOE representative's quality assurance review of the licensee's package documentation and TRU loading operations. The inspectors did not identify any abnormal issues.

The inspectors noted that licensee personnel used appropriate radiological survey instruments to analyze and address radiological conditions during the cask loading.

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

See Section 4 above.

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.J. 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

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. The RSO performs general over-sight of the radiation protection program, and ensures compliance with license conditions.

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:

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.

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. (X) Y ( ) N

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 properly to analyze and address radiological conditions during the cask loading and surveys of the transportation container.

D. MATERIALS

1. Radioactive materials licensed during operations have been removed offsite; residual quantities conform to license conditions. **Not reviewed during this inspection**

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

Basis for Findings:

The licensee was unable to ship TRU waste offsite during the inspection. The licensee appeared to have adequate security. In addition, managers have taken additional measures to ensure staff is made aware that any abnormal packages, letters, e-mails, etc. found by the staff are reported to security.

E. TRAINING

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

Basis for Findings:

The inspector performed interviews with staff and management involved with the loading and handling of the cask containing TRU. 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. (X) 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. (X) Y ( ) N

Basis for Findings:

The inspectors conducted radiation surveys, but did not identify any radiation levels above NRC requirements.

G. RADIATION PROTECTION

1. The licensee's approved health physics program is being implemented in the field for new decommissioning activities. (X) Y ( ) N
2. Site security and control of contaminated material are in compliance with 10 CFR 20.1801 and 20.1802. (X) 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 TRU waste for disposal to a facility in Handford, Washington. However, the licensee could not ship the radioactive material during the inspection. The licensee planned to ship the radioactive material at a future date.

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 would be present during the loading of this cask. The licensee installed physical barriers and monitored areas with personnel where the licensee anticipated and/or identified elevated radiation levels. These areas will also need to be monitored and physical barriers installed during future cask loadings. The Health Physics staff was performing dose assessments and dose predictions for future loadings to keep doses ALARA.

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:

See Below

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:

The licensee planned to ship two CNS 10-160B casks containing TRU waste from the West Jefferson site to Hanford, Washington. A single flatbed truck will transport each cask. The inspectors performed independent radiological surveys and reviewed the licensee's labels and transportation documentation for each Type B cask, truck cab and trailer. The inspectors noted that licensee personnel had appropriately performed radiological surveys of the casks, truck

cabs and trailers and had posted and labeled the casks and trailers appropriately.

A representative from the Ohio Department of Health (ODH) was on site and reviewed the radiation levels, labels and other documentation. The ODH representative informed the inspectors that no deficiencies were identified during their review.

As part of Ohio's hazardous waste transportation program, three agents from the Public Utilities Commission of Ohio (PUCO) also performed radiological surveys of the casks, cabs and trailers and performed inspections of the cabs and trailers that included, but were not limited to, the brakes, hazard lights and structural integrity of the trailer. The inspectors observed the inspections and the PUCO agents informed the inspectors that no deficiencies were noted during the inspection.

The licensee temporarily delayed the shipment of the two casks to Hanford, Washington because of poor weather between the State of Ohio and the State of Washington.

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. (X) Y ( ) N
2. Packaged radioactive waste materials are labeled in accordance with regulations. (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 (X) 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.