

June 20, 2001

Mr. Craig Jensen
Radiation Safety Officer
Battelle Memorial Institute
Columbus Operations
505 King Avenue
Columbus, OH 43201-2693

SUBJECT: NRC INSPECTION REPORT 07000008/2001-002(DNMS)(BATTELLE)

Dear Mr. Jensen:

On May 31, 2001, the NRC completed an inspection of decommissioning activities at Battelle Columbus Laboratories' West Jefferson Site, located at West Jefferson, Ohio. Areas examined during this inspection included facility management and control, and radiological safety.

In general, decommissioning activities in the areas inspected were performed satisfactorily. Management was monitoring, assessing, and controlling work conduct, and the radiological aspects of decommissioning. No violations of NRC requirements were identified during this inspection.

During this inspection, the NRC Inspector was informed that the proposed U.S. Department of Energy's (DOE) Fiscal Year 2002 Budget, which is the primary funding source for the Battelle Columbus Decommissioning Project (BCLDP), is to be significantly reduced. This could compromise the schedule for completion of Battelle's West Jefferson Site decommissioning which has been established in your NRC license. This will also acknowledge your June 8, 2001, letter providing similar information. Your offer to provide a briefing is being considered, and we will contact you in the near future to discuss this option.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter will be available **electronically** for public inspection in the NRC Public Document Room **or** from the *Publicly Available Records (PARS) component of NRC's document system (ADAMS)*. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

We will gladly discuss any questions you have concerning this inspection.

Sincerely,
/RA/

Bruce L. Jorgensen, Chief
Decommissioning Branch

Docket No. 07000008
License No. SNM-7

cc: R. Vandegrift, Ohio Department of Health

DOCUMENT NAME:C:\Program Files\Adobe\Acrobat 4.0\PDF
Output\April01BattelleInspnlet.wpd

To receive a copy of this document, indicate in the box:"C" = Copy without enclosure "E"= Copy with enclosure"= No copy

OFFICE	RIII		RIII				
NAME	McCann		Jorgensen				
DATE	06/20/01		06/20/01				

OFFICIAL RECORD COPY

C. Jensen

-2-

Distribution:

Docket File w/encl

PUBLIC IE-07 w/encl

J. L. Caldwell, RIII w/encl

C. D. Pederson, RIII w/encl

RIII Enf. Coordinator w/encl

EJM, RII (e-mail)

**MATERIALS DECOMMISSIONING INSPECTION FIELD NOTES
FOR FACILITIES NEEDING SIGNIFICANT DECOMMISSIONING EFFORT**

Region: III
Inspection Report No.: 070-00008/2001002(DNMS)
License No.: SNM-00007
Docket No.: 070-00008
Licensee (Name & Address): Battelle Memorial Institute
Battelle Columbus Laboratories Decommissioning Project
(BCLDP)
West Jefferson, Ohio
Licensee Contact: Craig L. Jensen, Radiation Safety Officer (RSO)
Telephone No.: (614) 424-5170
Last Amendment No.: 23
Date of Amendment: August 25, 2000
Program Code: 21130 & 22200
Date of Last Inspection: August-September 2000
Date of This Inspection: April 24-26, 2001 and May 29-31, 2001
Date of Next Inspection: September 2001
Type of Inspection: (X) Announced () Unannounced
(X) Routine () Special
() Initial Decomm (X) Reinspection of Decomm.
Level of Inspection: (X) Normal () Reduced () Extended

Brief Description of Inspection Activities: This was a routine decommissioning inspection performed in accordance with Battelle's Master Inspection Plan (MIP)). The MIP specified that the following inspection procedures were to be used for this inspection: 1. 88005 MANAGEMENT ORGANIZATION AND CONTROLS; 2. 83822 RADIATION PROTECTION; 3. 87104 DECOMMISSIONING INSPECTION PROCEDURE; 4. 86740 INSPECTION OF TRANSPORTATION ACTIVITIES. Transportation was not inspected during this inspection due to the need to address with the licensee a developing issue regarding Battelle possibly having to amend their license to extend their Decommissioning Schedule. The schedule change may be necessary due to a proposed DOE reduction in funding. The NRC inspector conducted a performance based observation of the licensee's breathing air supply system, and their respirator mask inspection process. Additionally, inspectors observed the licensee's personnel remove from the LLC 200 pound contaminated windows, wrap them in herculite, and transfer them onto a fork lift for transfer to the waste storage building. Additionally, inspectors observed personnel removing their protective clothing (PC) after working in the High Level Hot Cell (HLC) and Low Level Hot Cell (LLC) areas.

Brief Description of Findings and Actions: No violations of NRC regulations or license conditions were identified during this inspection. In general the decommissioning and health physics safety practices during this inspection were being performed in a highly professional manner. A number of potential violations had been self-identified by the licensee via their Radioactive Awareness Reporting (RAR) program. These issues were adequately addressed and were treated as Non-Cited Violations (NCVs).

The licensee's followup and investigation of an industrial accident which occurred in the Alpha-Gamma Cells area of JN-1 was reviewed, and determined to have been adequately addressed.

A significant amount of decontamination and remediation had been accomplished since the NRC's last inspection., and is discussed in the report.

Summary of Findings and Actions:

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

Inspectors Mike McCann, M.S., Senior Decommissioning Inspector
NRC Region III, Decommissioning Branch

Accompanied By: Eric Denison, M.S., Ohio Department of Public Health

Approved by Branch Chief: /RA/
Bruce L. Jorgensen, Chief,
Decommissioning Branch

Date: _____

- 1. **SUMMARY OF DECOMMISSIONING STATUS**
 - 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

Description of Facility Status: Since the last NRC Inspection (NRC INSPECTION REPORT 070-00008/2000002(DNMS)), the licensee has completed a significant amount of remediation. As of the date of this inspection, the former research reactor located in JN-3 has been removed; the 10 Alpha-Gamma Cells located in the basement of JN-1 have been emptied, decontaminated, and the shielded doors and walls removed; the High Level Cell (HLC), and the Low Level Cell (LLC) have been emptied of all radiological bulk materials. The High Energy Cell (HEC) currently remains as a hot cell. High level waste from the other cells was moved to this cell for final processing. Inspectors observed the removal of the LLC's shielded windows. A heavy load safety issue was brought to the licensee's attention (see Item below 3.B.L. below).

The licensee creates detailed Work Instructions, and RWPs to address all work performed. Work is audited by the RSO and Radiological Technical Support Manager

(RTSM) on a weekly and monthly basis. The Radiological Field Operations Manager oversees operations on a day-to day basis, and provides regular verbal reports to the RSO and RTSM on a weekly basis. In addition, the core radiation protection management staff, the BCLDP Project has two other independent groups, 1. Regulatory Compliance & Environmental, Safety and Health, and 2. Quality Assurance who conduct regular audits and report to the BCLDP Director of Operations.

During the inspection inspectors met with U.S. Department of Energy (DOE) and BCLDP staff and discussed the potential ramifications on the BCLDP decommissioning schedule. DOE staff projected that if the proposed DOE budget reduction of 37% is approved, that they believe that a request to extend the schedule to 2012 would be necessary. BCLDP staff indicated that the projection would necessitate a schedule extension to 2015. The NRC inspector informed the licensee, that the NRC's position is that they have a commitment tied down in their license to complete decommissioning by 2005, and that this schedule must be met. Further, that funding is not typically considered a basis by the NRC to approve an extension to an approved Decommissioning Schedule.

2. **INSPECTION OF KEY DECOMMISSIONING ACTIVITIES**

A. **LICENSEE ACTIVITIES INSPECTED BEFORE DISMANTLEMENT**

This section of Field Notes removed. Not applicable to inspection.

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

This section of Field Notes removed. Not applicable to inspection.

C. **LICENSEE ACTIVITIES INSPECTED AFTER COMPLETION OF SITE REMEDIATION**

This section of Field Notes removed. Not applicable to inspection.

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

A. **GENERAL OVERVIEW**

1. Describe the licensee's decommissioning organizational structure:
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: An audit performed by an outside consultant for the BCLDP Management questioned the RSO's role in the oversight of the BCLDP Radiation Protection Program. The inspector interviewed the RSO, RTSM, RFOM, Battelle Columbus Operations (BCO) Vice-President (Environmental, Health, Safety, and Quality (ESH&Q)), BCLDP Manager of Decommissioning and Decontamination Manager, and a number of senior health physics staff regarding their understanding of the role of the

RSO. The inspector's general impression was that the role of the RSO is well defined and understood by the BCLDP staff. Additionally, audits and walk about observations by the RSO and RTSM are being conducted. The licensee's Management Oversight Committee (MOC) was meeting on a regular basis, and the meeting topics appeared to be relevant and appropriate for such an oversight committee. The inspector reviewed BCLDP Management Oversight Committee Meeting Minutes as follows: April 18, 2001, July 20,, 2000, August 28, 2000, November 3, 2000, and March 7, 2001.

B. FACILITIES

This section of Field Notes removed. Not part of this inspection.

C. EQUIPMENT AND INSTRUMENTATION

This section of Field Notes removed. Not part of this inspection.

D. MATERIALS

1. Radioactive materials licensed during operations have been removed offsite; residual quantities conform to license conditions. (X) Y () N
2. Security and control of licensed materials, including contaminated areas, is being maintained. (X) Y () N

Basis for Findings: Inspector Observations.

E. TRAINING

This section of Field Notes removed. Not part of this inspection.

F. AREA RADIATION SURVEYS AND CONTAMINATION CONTROL

1. Area surveys are being perform (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: Inspector observations

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

Basis for Findings: Inspector observations. The inspectors observed BCLDP personnel go through the breathing air system startup and shutdown. procedure (DDO-405, Rev.9, and DDO-406, Rev. 8. Inspectors also discussed mask maintenance, assignment, and use with responsible BCLDP personnel. Inspectors asked BCLDP personnel to perform a mask maintenance, and to show inspectors records of medical examination, mask fit

test, and respiratory mask assignment for personnel who were using respiratory equipment in the LLC at the time of this inspection.

H. **RADIOACTIVE WASTE MANAGEMENT / EFFLUENTS / ENVIRONMENTAL MONITORING**

This section of Field Notes removed. Not part of this inspection.

I. **RECORD KEEPING FOR DECOMMISSIONING**

This section of Field Notes removed. Not part of this inspection.

J. **TRANSPORTATION**

This section of Field Notes removed. Not part of this inspection.

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: Inspector observations.

L. **OCCUPATIONAL HEALTH AND SAFETY**

1. Describe the occupational health and safety observations made at the licensee's facilities.
2. Licensee and Occupational Safety and Health Administration were informed of occupational health and safety issues observed during the inspection. () Y (X) N

Basis for Findings: Safety shoes, glasses and helmets required. All personnel working in these areas were provided with appropriate equipment.

Inspectors observed the removal of 2000 pound windows from the LLC using over-head cranes, and a fork lift truck. While observing this work, inspectors became concerned with the potential for an accident occurring involving the inadvertent tipping and falling of the 2000 pound windows. A number of employees positioned themselves in a manner that if the window were to fall, that they could be injured by the falling window. This issue was discussed with BCLDP Management, and the inspectors were informed that they recognize this risk and have become aware that the type of work going on now involves a more significant risk from mechanical injury. BCLDP in response to this concern had already contracted with a safety professional to provide safety training to their BCLDP staff.

4. **VIOLATIONS, NON-CITED VIOLATIONS, FOLLOW UP 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 follow up items and other issues.

Thirteen Radiological Awareness Reports (RAR) were issued and investigated by the licensee in 2000. As of the date of this inspection 2 RARs were issued in 2001. The licensee appeared to be managing this program in a timely and satisfactory manner. Four potential violations of license conditions and NRC requirements appeared to have occurred. However, due to the action of the licensee using its RAR Program, all of these potential violations are being treated as non-cited violations. The RARs are discussed as follows:

Two RARs were issued in 2000 following the last NRC inspection.

RAR 00-009

Initiated August 28, 2000

Concrete core-boring, in JN-3 (former research reactor) started without all Health Physics, procedures in place, i.e., engineering controls to control liquid and air borne effluents, air sampling for radiological airborne contaminants, and appropriate HP personnel to conduct surveys, as required. Subsequence surveys determined that personnel were not contaminated as a result of this work. The licensee conducted an extensive investigation, and thorough briefing and training sessions for all contractor and BCLDP personnel. The supervisor responsible for allowing the work to be done was counseled by his supervisor. This activity involved potential violation of license conditions and NRC requirements. This issue was identified quickly, not repetitive, and the licensee took appropriate action to reduce the likelihood of recurrence, therefore it is being treated as a non-cited violation.

RAR 00-010

Initiated on August 18, 2000

On August 2, 2000, a BCLDP decommissioning staff exited the CAA after performing work. The employee checked his direct reading personnel ionization chamber (PIC), and found it to be off-scale. The BCLDP staff did not report the off-scale PIC until August 18, 2000. BCLDP Dosimetry procedures requires immediate notification whenever a PIC is found off scale. The failure to comply with BCLDP Radiation Protection Program procedures is a potential violation of a BCLDP license condition.

The licensee upon being informed of the event, put the employee on dose restriction, sent his TLD off for processing, and performed a dose evaluation based on other personnel working in the same area PIC readings. This evaluation and the TLD report determined that the employee did not exceed administrative or regulatory dose limits. The licensee counseled the employee, and performed an all staff training of relevant staff to ensure understanding of reporting requirements for any irregularities and/or anomalies associated with PICs.

This issue was identified quickly, not repetitive, and the licensee took appropriate action to reduce the likelihood of recurrence, therefore it is being treated as a non-cited violation.

RAR 01-001

Initiated February 9, 2001

This incident involved the inadvertent personnel contamination of an employee preparing a radwaste shipping container for transfer to the LLW waste storage area. The container had been surveyed and certified as "radiologically clean" for radiation protection purposes. shipping container, one of the employees left the area of the container, and alarm one of the portal personnel exit monitors. Frisk survey indicated contamination on the employees clothing and hand.

The investigation by the licensee determined that embedded contamination in the surface of the shipping container bled out of the container surface, as a result of high humidity conditions. The licensee revised the packaging procedure for this class of container which required that the containers be wrapped with herculite and saran wrap prior to being release to unrestricted areas.

RAR 01-002

Initiated February 9, 2001

The licensee failed to conduct an adequate survey pursuant to 10 CFR Part 20.1501. Prior to personnel entering a radiation area Specifically, . a HP technician performed a radiological survey at the Controlled Access Area (CAA) outside the door of the HLC prior to access by decontamination personnel. After the decontamination personnel completed the work and exited the HLC, the HP Technician returned and performed measurements with another survey meter, and determined the readings to be an order of magnitude grater than previously measured. It was determined that the first instrument was set on the wrong scale, and that the plastic bag over the meter made reading difficult. The licensee investigated the issue immediately, determined that none of the personnel received dose greater than regulatory or administrative limits. A training session was conducted with the HP personnel to review proper meter reading, and acceptable methods for bagging survey meters.

This issue was identified quickly, not repetitive, and the licensee took appropriate action to reduce the likelihood of recurrence, therefore it is being treated as a non-cited violation.