

October 29, 2004

Mr. Joe D. Jacobsen
Battelle Memorial Institute
Columbus Operations
Mail Stop: JS22
505 King Avenue
Columbus, OH 43201-2693

SUBJECT: NRC INSPECTION REPORT 070-00008/2004-002(DNMS)
BATTELLE COLUMBUS LABORATORIES DECOMMISSIONING PROJECT

Dear Mr. Jacobsen:

On September 30, 2004, the NRC completed the second of two inspections at your Battelle/West Jefferson North Site in West Jefferson, Ohio. The purpose of the inspections was to determine whether decommissioning activities were conducted safely and in accordance with your NRC-approved decommissioning plan and NRC requirements. Specifically, the inspections included a review of your decommissioning support activities and radiation safety program: (1) observation of your final status surveys of Buildings JN-1 and JN-2, and (2) the NRC's conduct of confirmatory surveys. At the conclusion of the inspections on August 20, and September 30, 2004, the NRC inspectors discussed the findings with you and members of your staff.

These inspections consisted of an examination of decommissioning activities at the Battelle/West Jefferson North facility as they relate to safety and compliance with the Commission's rules and regulations. Areas examined during the inspections are identified in the enclosed report. Within these areas, the inspections consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of these inspections, the NRC determined that a Severity Level IV violation of NRC requirements occurred. The violation is being treated as Non-Cited Violation (NCV), consistent with Section VI.A of the Enforcement Policy. The current Enforcement Policy is included on the NRC web site at www.nrc.gov; select **What We Do, Enforcement**, then **Enforcement Policy**. The NCV is described in the subject inspection report. If you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, Region III, and the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure 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). The NRC's document system is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

J. Jacobsen

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

Sincerely,

/RA/

Kenneth G. O'Brien, Chief
Decommissioning Branch

Docket No. 070-00008
License No. SNM-00007

Enclosure: Inspection Report 070-00008/2004-002(DNMS)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.: 070-00008

License No.: SNM-00007

Report No.: 070-00008/2004-002(DNMS)

Licensee: Battelle Memorial Institute
Battelle Columbus Laboratories Decommissioning Project

Facility: West Jefferson North Site

Location: West Jefferson, Ohio

Dates: August 16 through 20, 2004, and
September 27 through 30, 2004

Inspectors: Eugeno A. Bonano, Health Physicist (Inspector)
George M. McCann, Senior Health Physicist (Inspector)
Peter J. Lee, Health Physicist (Inspector), Ph.D., CHP

Approved By: Kenneth G. O'Brien, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Battelle Memorial Institute Battelle Columbus Laboratories Decommissioning Project (BCLDP) Inspection Report No. 070-00008/2004-002(DNMS)

These routine decommissioning inspections focused on the observation and evaluation of the licensee's and the site decommissioning contractor's current performance related to decommissioning support activities, radiological safety, and the conduct of surveys in or around Buildings JN-2 and JN-3. The NRC also conducted confirmatory surveys.

Decommissioning Support Activities

- The inspectors determined that the licensee and the site contractor conducted decommissioning activities in accordance with the NRC-approved decommissioning plan and NRC requirements. (Section 1.1)
- The inspectors determined that the licensee and the site contractor implemented their oversight programs in accordance with the NRC-approved decommissioning plan and NRC requirements. (Section 1.2)

Radiation Safety Program

- The inspectors determined that the licensee had an acceptable respiratory protection program in place to conduct decommissioning activities. The inspectors also determined that a Non-Cited Violation occurred when the licensee's decommissioning personnel used a non-approved respiratory protection equipment configuration. (Section 2.0)

Final Status and Confirmatory Surveys

- The inspectors determined that the site contractor conducted final status surveys of Buildings JN-2 and JN-3 in accordance with the NRC-approved decommissioning plan and final status survey plan. The inspectors also conducted confirmatory surveys of Building JN-2 and did not identify any residual contamination levels in excess of the unrestricted release criteria specified in Title 10 of the Code of Federal Regulations (CFR), Part 20, Subpart E, "Radiological Criteria for License Termination" or the limits specified in the licensee's NRC-approved decommissioning plan. (Section 3.0)

Report Details

1.0 Decommissioning Support Activities

1.1 Status of Decommissioning (87104)

a. Inspection Scope

The inspectors interviewed the licensee and the contract workforce, and evaluated decommissioning activities to verify that work was conducted in accordance with license requirements. Activities observed included: scabbling, decontamination and surveys of equipment and building surfaces, and radiation protection work practices.

b. Observations and Findings

The inspectors determined that the licensee staff and contractor personnel were knowledgeable of their work assignments and attentive to their individual tasks. Through interviews and infield discussions, the inspectors determined that the workers were cognizant of the radiological conditions in their work areas and were aware of what actions could cause the radiation levels to change. The inspectors observed that the workers were communicating effectively, demonstrating appropriate concern for industrial safety, conducting work in accordance with procedural requirements, and employing good work practices.

The inspectors observed workers wearing approved dosimetry, appropriate anti-contamination clothing, and approved respirators, in accordance with specific radiation work permits and/or procedures.

c. Conclusion

The inspectors determined that the licensee and the site contractor conducted decommissioning activities in accordance with the NRC-approved decommissioning plan and NRC requirements.

1.2 Oversight Program (88005)

a. Inspection Scope

The inspectors reviewed a sampling of the Battelle Columbus Laboratories Decommissioning Project (BCLDP) oversight assessment reports, management walkdown reports, and radiological awareness reports (RAR), to determine if the licensee was providing adequate oversight of the decommissioning project at the BCLDP West Jefferson North Site.

b. Observations and Findings

The inspectors noted that the licensee's oversight assessment, management walkdown, and RAR reports were completed in accordance with its prescribed schedule, thorough and detailed, and approved by appropriate management. The inspectors observed that the reports demonstrated an adequate awareness of and sensitivity to ongoing

decommissioning activities. The inspectors determined that the licensee addressed and resolved the deficiencies identified in the reports in a timely manner.

c. Conclusions

The inspectors determined that the licensee and the site contractor implemented their oversight programs in accordance with the NRC-approved decommissioning plan and NRC requirements.

2.0 Radiation Safety

2.1 Respiratory Protection Program (83822)

a. Inspection Scope

The inspectors reviewed and evaluated the licensee's: 1) response and corrective actions to an August 4, 2004, event involving the use of powered air purifying respirators (PAPR) in a configuration not certified by the National Institute for Occupational and Health (NIOSH), and 2) implementation of its respiratory protection program.

b. Observations and Findings

The inspectors determined that during June 2004, the licensee purchased new MSA OptimAir MM 2k Mask Mounted PAPRs and began using the units during July 2004. During a management walkdown on August 4, 2004, individuals assigned to perform work activities in the Building JN-1 high energy cell (HEC) were observed to be using the PAPRs in a configuration that was not approved by the manufacturer or NIOSH. The licensee management immediately halted work and ordered personnel to exit the area. The HEC was posted as an airborne radioactivity area.

The licensee documented its observations in an event report and notified the NRC on August 5, 2004. The licensee also issued a stop work order, which barred the use of the PAPRs until it developed and implemented appropriate corrective actions. The NRC inspectors reviewed the licensee's event report and an RAR, Number 04-004, which documented the licensee's assessment of the root causes for the event and its proposed corrective actions. The inspectors also reviewed approved procedures pertaining to the use of respiratory protection equipment, and work in airborne contamination areas. The inspectors observed and interviewed personnel conducting decommissioning work in airborne contamination areas, and determined that the workers were aware of the procedural requirements and used respiratory equipment appropriately.

The inspectors noted, subsequent to the event, that the licensee had conducted an overall assessment of its respiratory protection program and identified 11 deficiencies. The licensee documented the deficiencies in its "Independent Programmatic Assessment Report (IPA), on the Closure Services (CS) Respiratory Protection Program," IPA-04-006, dated August 6 through 8, 2004. The licensee also generated assessment action reports (AAR), IPA-006-001 through 011, to document and track each deficiency. The NRC inspectors determined that the assessment reports were complete, were implemented timely, and documented adequate corrective actions.

The licensee's failure to use respiratory protection equipment in an approved configuration was a Severity IV violation of 10 CFR Part 20.1703, "Use of Individual Respiratory Equipment," Section 20.1703(a), which required the licensee to use only respiratory protection equipment that was tested and certified by NIOSH. Because the licensee identified the violation and has taken corrective action to prevent recurrence, and because the violation was not willful and was not repetitive, in that it could not reasonably have been prevented by previous corrective actions, this violation is being treated as a Non-Cited Violation, consistent with the NRC Enforcement Policy (NCV 070-00008/2004-002-01).

c. Conclusions

The inspectors determined that the licensee had an acceptable respiratory protection program in place to conduct decommissioning activities. The inspectors also determined that a Non-Cited Violation occurred when the licensee's decommissioning personnel used a non-approved respiratory protection equipment configuration.

3.0 Final Status and Confirmatory Surveys

a. Inspection Scope

The inspectors observed the decommissioning contractor conduct final status surveys (FSS) in Building JN-3 to verify that work was being done in accordance with the DP and approved survey procedures. The inspectors interviewed the personnel conducting the surveys, performed side-by-side radiological surveys, and conducted independent confirmatory surveys in Building JN-2.

b. Observations and Findings

Building JN-2 was a two-story structure with the first floor rooms, hallways and stairways divided into 12 final status survey units, and with the second story divided into six final status survey units. The inspectors conducted direct surface scanning surveys of the floors, walls (up to six feet), and upper ceiling surfaces (duct work, pipes). The inspectors also collected wipes to test for removable contamination. Ten wipes were collected on the first floor and seven were collected on the second floor. The inspectors surveyed the main first floor hallway, Rooms 2106, 2112, 2119, and 2120 on the first floor, and Rooms 2202, 2204, 2207A, and 2210 on the second floor.

The inspectors conducted direct surface scanning surveys and did not identify any residual contamination in the areas surveyed above the ambient radiological background. The NRC's laboratory contractor, Oak Ridge Institute for Science and Education (ORISE) analyzed the smear samples for gross alpha and gross beta contamination using a low background alpha/beta proportional counter. All smear sample results were less than the established minimum detectable concentration (MDC) for the counter. The MDCs were 8.9 disintegrations per minute (dpm) per smear for gross alpha and 15 dpm per smear for gross beta, which is well below the licensee's unrestricted release limits for removable contamination as described in its DP.

The inspectors observed the decommissioning contractor personnel conducting final status surveys in Building JN-3. The inspectors observed and evaluated the contractor's recording of survey data and calibration of survey equipment. The inspectors determined that the contractor personnel performed the work safely, and in accordance with approved procedures.

c. Conclusions

The inspectors determined that the site contractor conducted final status surveys of Buildings JN-2 and JN-3 in accordance with the NRC-approved DP and final status survey plan. The inspectors also conducted confirmatory surveys of Building JN-2 and did not identify any residual contamination levels in excess of the unrestricted release criteria specified in Title 10 of the Code of Federal Regulations (CFR), Part 20, Subpart E, "Radiological Criteria for License Termination" or the limits specified in the licensee's NRC approved decommissioning plan.

4.0 Exit Meeting

The inspectors presented the preliminary inspection results to members of the facility management at the conclusion of the onsite inspections on August 20 and September 30, 2004. The licensee acknowledged the findings presented. The inspectors asked the licensee staff whether any materials that could be included in the inspection report should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

- P. Weaver, BCLDP West Jefferson Site Project Manager
- J. Jacobsen, BCLDP West Jefferson Radiation Safety Officer
- P. Greenwalt, Director, Ashtabula - Columbus Closure Project, U.S. Department of Energy (DOE)
- K. Hall, Health Physicist, DOE
- J. Staehr, Project Manager, Closure Services (CS)
- S. Zoller, CS RSO
- C. McCracken, Health Physicist, Ohio Department of Health

INSPECTION PROCEDURES USED

- IP 83890 Closeout Inspection and Survey
- IP 87104 Decommissioning Inspection Procedure for Materials Licensees
- IP 83822 Radiation Protection

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

070-00008/2004-002-01	NCV	Failure to use respiratory equipment in a configuration approved by NIOSH
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Closed

070-00008/2004-002-01

NCV

Failure to use respiratory equipment in a configuration approved by NIOSH

Discussed

None

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
AAR	Assessment action reports
ARA	Airborne radioactivity area
BCLDP	Battelle Columbus Decommissioning Laboratories Project
CS	Closure Services
CFR	Code of Federal Regulations
DNMS	Division of Nuclear Materials Safety
DOE	U.S. Department of Energy
DPM	Disintegration per minute
FSS	Final Status Survey
HEC	High Energy Cell
IPA	Independent Programmatic Assessment
MDC	Minimum detectable concentration
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
ORISE	Oak Ridge Institute for Science and Education
PARS	Publicly Available Records
PAPR	Powered air purifying respirators
pCi/g	Picrocuries per gram
RSO	Radiation Safety Officer

DOCUMENTS REVIEWED

- 1) IPA-04-006, "Independent Programmatic Assessment Report On The CS Respiratory Protection Program," dated: August 6 - 8, 2004
- 2) CS-RS-AP-1.0, "Respiratory Protection Program For Closure Services," Revision 0, dated: September 3, 2004
- 3) CS-RS-OP-002, "Selection and Use of Respiratory Protection Equipment," Revision 0, dated: June 30, 2004
- 4) CS-RS-OP-002, "Selection and Use of Respiratory Protection Equipment," Revision 0, dated: June 30, 2004
- 5) CS-RS-OP-012, "Re-Certification Inspection and Maintenance of CS Respiratory Protection Equipment," Revision 0, dated: September 3, 2004

- 6) RS-OP-002, "Selection and Use of Respiratory Protection Equipment," Revision 6, dated: November 15, 2002
- 7) RS-OP-12, "Re-Certification, Inspection, and Maintenance of BCLDP Respiratory Protection Equipment," Revision 4, Field Change, dated: July 8, 2004
- 8) RS-AP-1.0, "Respiratory Protection Program for the Battelle Columbus Laboratories Decommissioning Project," Revision 8, dated: October 23, 2002
- 9) Radiation Worker Training Get-130 Student Study Guide
- 10) DD-90-02, "Radiation Protection Program, Battelle Columbus Laboratories Decommissioning Project," Revision 4, dated: January 23, 2003
- 11) DD-93-09, "Internal Dosimetry Technical Basis Document," Revision 1, dated: February 27, 1998
- 12) HP-AP-14, "Requirements for TLD/Bioassay Issue and Termination
- 13) HP-AP-15, "DAC-HR Tracking for Dose Estimation"
- 14) HP-AP-5.0, "Internal Dosimetry Program," Revision 3
- 15) HP-AP-11, "Air Sampling and Analysis," Revision 4, Field Change, dated: March 7, 2003
- 16) BCLDP Oversight Assessment Report: OA-04-16, "Evaluation of Implementation of the Respiratory Protection Program"
- 17) OA-04-07, "Closure Services Core Training for Radiation Protection Personnel"
- 18) OA-04-01, "Closure Services Radiation Safety Training for Four Contract Health Physics Technicians"
- 19) OA-04-08, "Contamination Control by Closure Services, LLC"
- 20) OA-04-10, "Evaluation of RWP Generation and Use"
- 21) DD-93-02, "Surface Release Criteria, Technical Basis Document for Battelle Columbus Laboratories Decommissioning Project (BCLDP)"
- 22) SC-OP-004, Revision 0, "Site Characterization, Operating Procedure, Radioactive Contamination Monitoring Requirements for Facility Surface Characterization"
- 23) SC-SP-004.2, Revision 3, "Decontamination and Decommissioning Operations, Site Characterization Sampling Procedure, Manual and Mechanical Collection of Surface and Subsurface Soil Samples in Support of Site Characterization"
- 24) DD-CP-015, Revision 0.1, "Decontamination and Decommissioning Operations, Decontamination and Decommissioning Characterization Procedures, Use of Gamma Scintillation Detector"

- 25) DD-97-02, Revision 0, "Radiological Characterization and Final Status Plan for Battelle Columbus Laboratories Decommissioning Project, West Jefferson Site"
- 26) SC-OP-002, Revision 0 (Formerly DD-CP-002), Site Characterization Operating Procedures, Facility Post-Decontamination Final Status Survey for Baseline Areas"
- 27) SC-OP-010, Revision 0 (Formerly DD-CP-010), "Site Characterization Operating Procedure, Establishing Surface Reference Grid for Walls, Floors, and Ceiling for a Detailed Characterization Survey"