





Summary of Findings and Actions:

- No violations cited, clear NRC Form 591 or regional letter issued
- Violation(s), NRC Form 591 issued
- Violation(s), regional letter issued (Form 591 attached to this letter)
- Follow up on previous violations
- Follow up on Open Inspection Items

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NRC Region III, Decommissioning Branch

Approved by Branch Chief:  Bruce L. Jorgensen, Chief  
Decommissioning Branch Date: 5-7-02

**1. SUMMARY OF DECOMMISSIONING STATUS**

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

**Description of Facility Status:** The licensee continues to remediate its facilities with excellent progress. All the hot cells, except for the High Energy Cell have had all bulk radiological materials removed, and placed in the High Energy Cell. The shielded doors and windows have been removed from the High Level and Low Level Cells. The doors have been disposed of as radiological waste. Some of the cell windows and manipulators were transferred to another NRC licensee for use at their facility. The diamond saw cutting of the former research reactor (JN-3) has been completed. The former reactor has been removed and shipped to Enviorcare for disposal. The proposed Well Injection and Distillate Extraction System (WIDE) to be used for removal of contamination from the former filter bed, has had the above equipment installed and pressure tested. The wells to be used with the WIDE System are projected to be installed during the June-July 2002 time frame.

**2. INSPECTION OF KEY DECOMMISSIONING ACTIVITIES**

**A. LICENSEE ACTIVITIES INSPECTED BEFORE DISMANTLEMENT**

- 1. Licensed material used during operations has been removed from site.  Y  N
- 2. Facility license conditions are in place and met by licensee.  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. (X) Y ( ) N
6. Licensee's record keeping is consistent with 10 CFR 30.35, 40.36, and 70.25. ( ) Y ( ) N

**This area not reviewed during this inspection.**

7. Financial assurance requirements are being maintained in accordance with 10 CFR 30.35, 40.36, and 70.25. ( ) Y ( ) N

**This area not reviewed during this inspection.**

8. Licensee is conducting site characterization in accordance with applicable radiation protection procedures. ( ) Y ( ) N

**This area not reviewed during this inspection.**

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
11. Other licensee activities: (SEE COMMENTS BELOW) ( ) Y (\*) N

**Basis for Findings:** The NRC Inspector attended the Licensee's Health Physics Technicians and Management planning meetings. During these daily planning meetings decommissioning, safety and radiation protection topics and issues were discussed. These meetings appeared sincere and thorough in discussion of radiation safety issues, as they related to the various decommissioning activities being performed at the BCLDP site. The Inspectors conducted daily rounds of buildings and grounds inside the licensee's fenced site and observed decommissioning work activities, such as radiological area, equipment, and personnel surveys, storage of low level waste, personnel dress-out and PPE practices, posting, and labeling of areas and materials, and completion of logs.

**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.). (X) Y ( ) N
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. | (X) Y ( ) N |
| d. | Groundwater     | (X) Y ( ) N |
| e. | Other mediums:  | (X) Y ( ) N |

**Details:** Inspector observation and interview of responsible BCLDP Staff. During this inspection the NRC inspector determined that ground water is infiltrating into the sub-cells of JN-1 and possibly JN-3. The licensee indicated that their monitoring wells had not detected any migration of radiological materials from these buildings. However, the licensee, in preparation of the remediation of the buildings, which will include removal of sub-cells and foundation walls, had recently completed a professional hydrological survey. The report was not final at the time of this inspection. The licensee agreed to provide the NRC the results of the hydrological survey. The licensee indicated that in preparation for the removal of the below ground structures, that they are installing additional monitoring wells.

The NRC inspectors observed the WIDE System. This system will inject a leixcivient agent which will facilitate the movement of radiological contamination from the former research reactor's filter bed to a bank of above ground filters. The injection and extraction wells had not been installed at the time of this inspection. The inspector determined that the wells are projected to be installed by June or July 2002.

In response to questions asked during a previous NRC inspection (NRC Report 0700008/2001-003), regarding the licensee's authority to install and operate the WIDE System without a license amendment, the licensee, in conjunction with support from the U.S. Department of Energy (Columbus Environmental Management Project, co-located with the BCLDP at the West Jefferson Site), initiated a review of the BCLDP license to determine if a license amendment was necessary. The BCLDP license authorized *In Situ* remediation. However, in order to clarify the Environmental Assessment (EA) which is cited in the licensee's decommissioning plan, DOE and BCLDP performed an up date to the original EA. The update was determined to qualify as a Categorical Exclusion, and thus the installation and operation of the WIDE System would not necessitate a revision of the original EA.

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). (X) Y ( ) N
  - b. Solid wastes (e.g., building materials, process and other facility equipment, concrete rubble, soil). (X) Y ( ) N
  - c. Other wastes:

**Details:** Inspector observations.

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

The Licensee has not established an interim waste storage area per the NRC's current policy description. They store radiological waste pending disposal, i.e., all waste in storage is awaiting disposal at an approved burial site.

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

**This area not reviewed during this inspection.**

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

**This area not reviewed during this inspection.**

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

**This area not reviewed during this inspection.**

9. Other licensee activities:

**Basis for Findings: This area not reviewed during this inspection.**

C. LICENSEE ACTIVITIES INSPECTED AFTER COMPLETION OF SITE REMEDIATION

1. Licensee has submitted NRC Form 314 for disposition of licensed material in accordance with 10 CFR 30.36, 40.42, and 70.38.  Y  N

**This area not reviewed during this inspection.**

2. Licensee's final survey program is acceptable (see Appendix B for inspection items for final surveys).  Y  N

**This area not reviewed during this inspection.**

3. NRC confirmatory survey performed.  Y  N

**This area not reviewed during this inspection.**

4. Site maintenance activities (if any, for restricted use) conform to license conditions and NRC-approved plans and are in place and functional.  Y  N

**This area not reviewed during this inspection.**

5. Other licensee activities:  Y  N

**Basis for Findings: This area not reviewed during this 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:

The licensee's organization was functioning appropriately. The Associate Radiation Safety Officer had left for other employment, leaving this position vacant. The licensee has submitted

a license amendment to remove this person from the license. The RSO had reassigned certain duties to another BCLDP employee. The NRC inspector reviewed the qualifications of the individual and determined that this person was professionally and technically qualified to perform the duties assigned. The BCLDP Management has not decided whether they will replace the Associate Radiation Safety Officer. The NRC inspector expressed concern regarding RSO back-up and support which the loss of this position could mean as far as the over-sight of the licensee's 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. ( ) Y ( ) N

**This area not reviewed during this inspection**

**Basis for Findings:** NRC inspector observations.

**B. FACILITIES**

1. Describe, from field observations, the licensee-identified facilities and outdoor areas to be decommissioned: JN-1 has had the shielded doors and windows removed from the High Level and low level Hot Cells. The research reactor has been removed from JN-3. The WIDE System is currently being installed in the former research reactor's filter bed. The licensee's characterization staff was in the process of characterizing JN-3 exterior. The licensee has also taken steps to strengthen its site security.
2. The licensee's remediation plan includes all the contaminated facilities and areas on-site and off-site. (X) Y ( ) N
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 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 not reviewed during this inspection.**

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

**This area not reviewed during this inspection.**

**Basis for Findings:** NRC inspector observations.

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:** Instrumentation observed during tours. Calibration practices not reviewed during 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 observation.

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 licensee's formal training program was not reviewed during this inspection.

F. AREA RADIATION SURVEYS AND CONTAMINATION CONTROL

1. Area surveys are being performed (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, and independent inspector measurements.

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:** NRC inspector observations.

H. RADIOACTIVE WASTE MANAGEMENT / EFFLUENTS / ENVIRONMENTAL MONITORING

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

**This area not reviewed during this inspection.**

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

**This area 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 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.  Y  N

**Basis for Findings:** NRC inspector observations.

I. RECORD KEEPING 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 not reviewed during this inspection.

J. TRANSPORTATION

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

During the inspection, the NRC inspector discussed with the licensee's Manager responsible for shipment of the transuranic (TRU) waste, their plans to ship the remote handled TRU waste to Hanford. The licensee will use an NRC approved transport container (GTS Durtek 10-160B) for shipment of the TRU waste. The NRC inspector was informed that the licensee plans on starting the shipment of TRU waste near the end of June or the start of July 2002. The NRC inspector requested that the licensee notify the Region when these dates are finalized, since the Region may wish to have an inspector on site during the first loadings. The licensee agreed to notify the Region when the dates are finalized. The licensee indicated that they believed that

the shipment all TRU waste could be done in ten shipments. Since the licensee had purchased two of the containers, they believed that they could complete the shipments in 5 months.

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. ( ) Y ( ) N

**This area not reviewed during this inspection**

**Basis for Findings:** NRC inspector observation and discussion with licensee staff.

**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: Safety shoes, glasses and helmets required. All personnel working in these areas were provided with 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

**Basis for Findings:** NRC inspector observations of decommissioning remediation activities being conducted during the inspection.

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.