



UNITED STATES  
**NUCLEAR REGULATORY COMMISSION**  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PENNSYLVANIA 19406-1415  
April 1, 2002

Docket No. 04009027

License No. SMC-1562

Timothy Knapp  
Radiation Safety Officer  
Cabot Corporation  
P.O. Box 1608  
County Line Road  
Boyertown, PA 19512

SUBJECT: INSPECTION 04009027/2002001, CABOT CORPORATION, READING,  
PENNSYLVANIA SITE

Dear Mr. Knapp:

On February 25, 2002, Randolph Ragland and Anthony Dimitriadis of this office conducted a safety inspection at Cabot, Reading, Pennsylvania of activities authorized by the above listed NRC license. Mr. Jeffery Whitehead, Radiation Health Physicist, of the Pennsylvania Department of Environmental Resources was also present and observed the inspection. The inspection was limited to a site tour, an evaluation of access controls, and discussions with the Radiation Safety Officer. The findings of the inspection were discussed with you at the conclusion of the inspection on March 28, 2002. The enclosed report presents the results of this inspection.

Within the scope of this inspection, no violations were identified.

In accordance with 10 CFR 2.790, a copy of this letter will be placed in the NRC Public Document Room and will be accessible from the NRC Web site at <http://www.nrc.gov/reading-rm.html>. No reply to this letter is required.

Your cooperation with us is appreciated.

Sincerely,

**/RA/**

Ronald R. Bellamy, Chief  
Decommissioning and Laboratory Branch  
Division of Nuclear Materials Safety

Enclosure:  
Inspection Report No. 04009027/2002001

cc:  
Commonwealth of Pennsylvania

T. Knapp  
Cabot Corporation

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OFFICE	DNMS/RI	N	DNMS/RI				
NAME	Ragland RCR1	Rbellamy RRB1					
DATE	4/1/02	4/1/02					

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U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

INSPECTION REPORT

Inspection No.	04009027/2002001
Docket No.	04009027
License No.	SMC-1562
Licensee:	Cabot Corporation
Location:	P.O. Box 1608 County Line Road Boyertown, PA 19512
Inspection Dates:	February 25, 2002 - March 28, 2002
Inspectors:	Randolph C. Ragland, Jr., CHP Health Physicist, Decommissioning & Laboratory Branch (D&LB), Division of Nuclear Material Safety (DNMS)  Anthony Dimitriadis Health Physicist, Radiation Safety & Safeguards Branch Division of Reactor Safety
Approved By:	Ronald Bellamy, PhD, Chief, Decommissioning & Laboratory Branch, Division of Nuclear Material Safety

## **EXECUTIVE SUMMARY**

Cabot Corporation  
NRC Inspection Report No. 04009027/2002001

The Cabot Corporation has a possession-only license for a slag pile located at their Reading, Pennsylvania site. The slag originated from precious metal extraction (tantalum) and contains naturally occurring uranium and thorium. The slag-pile extends approximately 160 feet along a steep embankment adjacent to a railroad track and the Schuylkill River in Reading, PA. Access to the slag pile is controlled with chain link fencing and locked gates. A revised decommissioning plan was submitted to the NRC in March 2000 which includes additional information to support the licensee's plan to conduct no further remediation, which is based on a licensee dose model that indicated that leaving the material in place at its current location would result in a dose to a resident farmer that is below regulatory limits. The licensee's decommissioning plan and dose model are currently under review by NRC.

The licensee established adequate access controls to the slag pile in accordance with license conditions and NRC requirements. Two minor violations with low safety significance were identified that were not subject to formal enforcement action.

## **REPORT DETAILS**

The Cabot Corporation has a possession-only license for a slag pile located at their Reading, Pennsylvania site. The slag originated from precious metal extraction (tantalum) and contains naturally occurring uranium and thorium. The slag-pile extends approximately 160 feet along a steep embankment adjacent to a railroad track and the Schuylkill River in Reading, PA. Access to the slag pile is controlled with chain link fencing and locked gates. A revised decommissioning plan was submitted to the NRC in March 2000 which includes additional information to support the licensee's plan to conduct no further remediation, which is based on a licensee dose model that indicated that leaving the material in place at its current location would result in a dose to a resident farmer that is below regulatory limits. The licensee's decommissioning plan and dose model are currently under review by NRC.

### **I. Access Controls**

#### **a. Inspection Scope**

The inspectors performed a review of licensee compliance with license conditions and radiological access controls for the Cabot Reading, Pennsylvania site. Information was gathered through site tours, selected radiation surveys of the upper and lower portions of the fence that surrounds the slag pile, and through discussions with the Radiation Safety Officer.

#### **b. Observations and Findings**

The fencing surrounding the slag pile was found to be intact, the fencing was posted as a Radioactive Material area, and all access gates were securely locked. A review of radiation surveys of the slag pile performed by the licensee's contractor indicated that quarterly surveys had been performed using appropriate radiological survey instrumentation. The inspector performed radiation surveys at selected locations at the fence surrounding the slag-pile. Radiation measurements obtained by the inspector were found to be comparable with licensee quarterly survey results dated 12/14/01. The inspector noted that several of the "Radioactive Material" postings on the upper fence had been installed facing the opposite direction. Areas containing 10 times the radioactive material quantities specified in 10CFR20 Appendix C are required to be posted as a "Radioactive Material(s)" area. The Radiation Safety Officer indicated that this likely occurred due to a miscommunication between he and his security contractor and that he would have it corrected. The RSO reported by telephone that the postings were corrected on February 26, 2002. This violation of the radiological posting requirements had low safety significance and is considered a minor violation not subject to formal enforcement action.

On December 27, 2001, NRC was notified by a representative of the State of Pennsylvania Department of Environmental Protection that the lower gate to the slag pile was found unlocked. Upon notification, NRC contacted Mr. Tim Knapp, Radiation Safety Officer (RSO)- Cabot Corporation, who in turn assigned a contractor to install a

lock on the lower gate. The contractor performed a walkdown of the site and installed a new lock on December 28, 2001. The RSO reported that the gate was routinely maintained locked and surmised that the lock had been removed due to vandalism. Because vegetation inside the fence did not appear significantly disturbed (i.e., excavated), he concluded that licensed material had not been removed from the site. The unlocked gate represented a violation of NRC License No. SMC-1562, which states that "access to the site will be controlled during decontamination and decommissioning activities; access to areas where radioactive waste is stored will be controlled at all times." This violation had low safety significance and is considered a minor violation not subject to formal enforcement action.

c. Conclusions

The licensee established adequate access controls to the slag pile in accordance with license conditions and NRC requirements. Two minor violations with low safety significance were identified that were not subject to formal enforcement action.

## **II. Exit Meeting**

X1 Exit Meeting

The inspectors presented the inspection results to Mr. Timothy Knapp by telephone at the end of the inspection on March 28, 2002. Mr. Knapp acknowledged the inspection findings.

## **PARTIAL LIST OF PERSONS CONTACTED**

### Licensee

Timothy Knapp, Radiation Safety Officer

### State of Pennsylvania

Jeffery Whitehead, Radiation Health Physicist

## **INSPECTION PROCEDURES USED**

IP 87104: Decommissioning Inspection Procedure for Materials Licensees, 6/4/97

**Items Opened:** None

**Items Closed:** None

**Items Discussed:** None

## **LIST OF ACRONYMS USED**

CFR	Code of Federal Regulations
NRC	Nuclear Regulatory Commission
PA	Pennsylvania
PADEP	Pennsylvania Department of Environmental Protection
RSO	Radiation Safety Officer

**APPENDIX A**

**MATERIALS DECOMMISSIONING INSPECTION RECORD**

**FOR FACILITIES NEEDING SIGNIFICANT DECOMMISSIONING EFFORT**

**Region I**

Licensee (Name & Address): <div style="border: 1px solid black; padding: 5px; margin-top: 5px;">           Timothy Knapp, Radiation Safety Officer            Cabot Corporation            P.O. Box 1608            Boyertown, PA 19512         </div>		Inspection Report No. : 2002-01 License No.: SMC-1562 Docket No. : 040-09027 Telephone No.: (610) 369-8520			
Licensee Contact:	Timothy Knapp	Priority:	1		
		Date of Last Inspection:	April 23, 2001		
Program Code:	11900	Date of This Inspection:	02/25/02 - 03/28/02		
Type of Inspection:	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <input checked="" type="checkbox"/> Announced  <input type="checkbox"/> Routine  <input type="checkbox"/> Initial Decommissioning         </td> <td style="width: 50%; border: none;"> <input type="checkbox"/> Unannounced  <input type="checkbox"/> Special  <input checked="" type="checkbox"/> Reinspection of Decommissioning         </td> </tr> </table>			<input checked="" type="checkbox"/> Announced <input type="checkbox"/> Routine <input type="checkbox"/> Initial Decommissioning	<input type="checkbox"/> Unannounced <input type="checkbox"/> Special <input checked="" type="checkbox"/> Reinspection of Decommissioning
<input checked="" type="checkbox"/> Announced <input type="checkbox"/> Routine <input type="checkbox"/> Initial Decommissioning	<input type="checkbox"/> Unannounced <input type="checkbox"/> Special <input checked="" type="checkbox"/> Reinspection of Decommissioning				
Next Inspection:	March 2003	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Reduced <input type="checkbox"/> Extended		
Brief Description of Inspection Activities:					
Conduct decommissioning inspection, perform site tour, and evaluate compliance with license conditions.					
Brief Description of Findings and Action: _____					



The Cabot Corporation has a possession-only license for a slag-pile located in Reading Pennsylvania. The slag originated from precious metal extraction (tantalum) and contains naturally occurring uranium and thorium. The slag-pile extends approximately 160 feet along a steep embankment adjacent to a railroad track and the Schuylkill River in Reading, PA. Access to the slag-pile is controlled with chain link fencing and locked gates. A revised decommissioning plan was submitted to the NRC in March 2000 which included additional information to support the licensee's plan to conduct no further remediation, which was based on a licensee developed dose model that indicated that leaving the material in place would result in a dose to a resident farmer that is below regulatory requirements. The submittal is under review by NRC.

During the February 25, 2002 site inspection, the fencing surrounding the slag-pile was found to be intact, the fencing was posted as a Radioactive Material area, and all access gates were securely locked. The inspector performed radiation surveys at selected locations at the fence surrounding the slag-pile. Radiation measurements obtained were found to be comparable with licensee quarterly survey results. Several of the "Radioactive Material" postings on the upper fence had been installed in the opposite direction. This violation of the posting requirements had low safety significance and is considered a minor violation not subject to formal enforcement action.

On December 27, 2001, NRC was notified by a representative of the State of Pennsylvania's Department of Environmental Protection that the lower gate to the slag-pile was found unlocked. Upon notification, NRC contacted Mr. Tim Knapp, Radiation Safety Officer - Cabot Corporation, who in turn assigned a contractor to install a lock on the lower gate. The contractor performed a walkdown of the site and installed a new lock on December 28, 2001. The unlocked gate represented a violation of NRC License No. SMC-1562, which states that "access to the site will be controlled during decontamination and decommissioning activities; access to areas where radioactive waste is stored will be controlled at all times." This violation had low safety significance and is also considered a minor violation not subject to formal enforcement action.

#### Summary of Findings and Action:

- ☒ No violations cited, clear NRC Form 591 or regional letter issued  
☐ Followup on previous violations

Inspector:	Randolph Ragland, Health Physicist, <b>RCR1</b> Decommissioning and Laboratory Branch (DLB) (Type Inspector's Name)	Date:	March 28, 2002
Approved:	Ronald R. Bellamy, Chief, DLB, <b>RRB1</b> Division of Nuclear Materials Safety, RI	Date:	March 28, 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	<input checked="" type="checkbox"/> <sup>1</sup>	Y	<input type="checkbox"/>	N
B. Required decommissioning financial assurance mechanisms in place.	<input checked="" type="checkbox"/>	Y	<input type="checkbox"/>	N
C. Decommissioning Plan (DP) required.	<input checked="" type="checkbox"/>	Y	<input type="checkbox"/>	N
D. Licensee final survey required.	<input checked="" type="checkbox"/>	Y	<input type="checkbox"/>	N
E. NRC confirmatory survey required.	<input checked="" type="checkbox"/>	Y	<input type="checkbox"/>	N
F. NRC closeout inspection required.	<input checked="" type="checkbox"/>	Y	<input type="checkbox"/>	N
G. Licensee doing decommissioning planning and preparation before dismantlement	<input type="checkbox"/>	Y	<input checked="" type="checkbox"/>	N
H. Licensee actively remediating site.	<input type="checkbox"/>	Y	<input checked="" type="checkbox"/>	N
I. Licensee completed site remediation.	<input checked="" type="checkbox"/> <sup>1</sup>	Y	<input type="checkbox"/>	N

Description of Facility Status:

Radioactive contamination in the form of slag remains on site. The slag-pile extends approximately 160 feet along a steep embankment adjacent to a railroad track and the Schuylkill River in Reading, PA. Access to the slag-pile is controlled with chain link fencing and locked gates.

(1): The licensee proposes leaving the radioactive slag in it's current location. That proposal was based on a licensee developed dose model that estimated that the dose to a resident farmer would be below regulatory limits even if the slag was left in it's current location.

## 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 ☐ N/I ☒ N/A

- |                                                                                                                                                                                       |                                                                         |   |                                                    |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|---|----------------------------------------------------|---|
| 1. Licensed material used during operations has been removed from site.                                                                                                               | <input type="checkbox"/>                                                | Y | <input checked="" type="checkbox"/> X <sup>1</sup> | N |
| 2. Facility license conditions are in place and met by licensee.                                                                                                                      | <input checked="" type="checkbox"/> X                                   | Y | <input type="checkbox"/>                           | N |
| 3. Site security and control of contaminated material being maintained in compliance with 10 CFR 20.1801 and 20.1802.                                                                 | <input checked="" type="checkbox"/> X                                   | Y | <input type="checkbox"/>                           | N |
| 4. Support systems and services (e.g., lighting, water supply) are in place.                                                                                                          | <input type="checkbox"/>                                                | Y | <input checked="" type="checkbox"/> X              | N |
| 5. Decommissioning schedules are consistent with timeliness requirements in 10 CFR 30.36, 40.42, and 70.38.                                                                           | <input checked="" type="checkbox"/> X                                   | Y | <input type="checkbox"/>                           | N |
| 6. Licensee's recordkeeping is consistent with 10 CFR 30.35, 40.36, and 70.25.                                                                                                        | <input checked="" type="checkbox"/> X                                   | Y | <input type="checkbox"/>                           | N |
| 7. Financial assurance requirements are being maintained in accordance with 10 CFR 30.35, 40.36, and 70.25.                                                                           | <input checked="" type="checkbox"/> X                                   | Y | <input type="checkbox"/>                           | N |
| 8. Licensee is conducting site characterization in accordance with applicable radiation protection procedures.                                                                        | <input checked="" type="checkbox"/> X                                   | Y | <input type="checkbox"/>                           | N |
| 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. | <input type="checkbox"/> N/A                                            | Y | <input type="checkbox"/>                           | N |
| 10. Licensee activities conform to specific license conditions and licensee programs and procedures.                                                                                  | <input checked="" type="checkbox"/> X                                   | Y | <input type="checkbox"/>                           | N |
| 11. Other licensee activities(describe below):                                                                                                                                        | <div style="border: 1px solid black; height: 20px; width: 100%;"></div> |   |                                                    |   |

Basis for findings:

Discussions with licensee representatives and direct observation.

- |                                                                                                                                                                                           |                                                    |       |                                       |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------|---------------------------------------|-----|
| B. LICENSEE ACTIVITIES INSPECTED DURING DECONTAMINATION, DISMANTLEMENT, AND SITE REMEDIATION                                                                                              | <input type="checkbox"/>                           | N/I   | <input checked="" type="checkbox"/> X | N/A |
| 1. Site security and control of contaminated material being maintained in compliance with 10 CFR Part 20.                                                                                 | <input checked="" type="checkbox"/> X <sup>1</sup> | Y     | <input type="checkbox"/>              | N   |
| 2. Decontamination and dismantlement of structures are being performed consistent with DP and sound industry practice (structures include buildings, utilities, treatment lagoons, etc.). | <input type="checkbox"/> N/A                       | Y     | <input type="checkbox"/>              | N   |
|                                                                                                                                                                                           | _____                                              | _____ |                                       |     |

3.	Decontamination and remediation of the following are being performed consistent with DP and sound industry practice:	<input type="text" value="N/A"/>	<input type="text" value="Y"/>	<input type="text"/>	<input type="text" value="N"/>
a.	Soil.	<input type="text" value="N/A"/>	<input type="text" value="Y"/>	<input type="text"/>	<input type="text" value="N"/>
b.	Sediment.	<input type="text" value="N/A"/>	<input type="text" value="Y"/>	<input type="text"/>	<input type="text" value="N"/>
c.	Surface waters.	<input type="text" value="N/A"/>	<input type="text" value="Y"/>	<input type="text"/>	<input type="text" value="N"/>
d.	Groundwater.	<input type="text" value="N/A"/>	<input type="text" value="Y"/>	<input type="text"/>	<input type="text" value="N"/>
e.	Other mediums (describe below):	<input type="text" value="N/A"/>	<input type="text" value="Y"/>	<input type="text"/>	<input type="text" value="N"/>
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>					
4	Licensee release and disposal of decommissioning wastes are consistent with DP and approved by NRC for:	<input type="text" value="N/A"/>	<input type="text" value="Y"/>	<input type="text"/>	<input type="text" value="N"/>
a.	Liquid wastes (e.g., groundwater, surface water, liquid from treatment ponds, process liquids).	<input type="text" value="N/A"/>	<input type="text" value="Y"/>	<input type="text"/>	<input type="text" value="N"/>
b.	Solid wastes (e.g., building materials, process and other facility equipment, concrete rubble, soil).	<input type="text" value="N/A"/>	<input type="text" value="Y"/>	<input type="text"/>	<input type="text" value="N"/>
c.	Other wastes (describe below):	<input type="text"/>	<input type="text" value="Y"/>	<input type="text"/>	<input type="text" value="N"/>
<div style="border: 1px solid black; padding: 2px;">N/A</div>					
5.	Temporary, on-site storage of low-level radioactive wastes from decommissioning meets license conditions and guidance in IP 84890.	<input type="text" value="X"/>	<input type="text" value="Y"/>	<input type="text"/>	<input type="text" value="N"/>
6.	Packaging and shipment of radioactive waste materials meet requirements in 40 CFR Parts 173-178 and 10 CFR Part 71.	<input type="text"/>	<input type="text" value="Y"/>	<input type="text" value="X&lt;sup&gt;2&lt;/sup&gt;"/>	<input type="text" value="N"/>
7.	Restoration of site-Licensee has restored site to meet license conditions and NRC-approved plans.	<input type="text"/>	<input type="text" value="Y"/>	<input type="text" value="X&lt;sup&gt;3&lt;/sup&gt;"/>	<input type="text" value="N"/>
8.	Licensee survey of material and equipment for free release sufficient to demonstrate compliance with release criteria.	<input type="text"/>	<input type="text" value="Y"/>	<input type="text" value="X&lt;sup&gt;3&lt;/sup&gt;"/>	<input type="text" value="N"/>
9.	Other licensee activities:	<input type="text"/>	<input type="text" value="Y"/>	<input type="text" value="N/A"/>	<input type="text" value="N"/>
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>					

**Basis for Findings:**

<sup>1</sup>. On December 27, 2001, NRC was notified by a representative of the State of Pennsylvania Department of Environmental Protection that the lower gate to the slag-pile was found unlocked. Upon notification, NRC contacted Mr. Tim Knapp, Radiation Safety Officer - Cabot Corporation, who in turn assigned a contractor to install a lock on the lower gate. The contractor performed a walkdown of the site and installed a new lock on December 28, 2001. The unlocked gate represented a violation of NRC License No. SMC-1562, which states that "access to the site will be controlled during decontamination and decommissioning activities; access to areas where radioactive waste is stored will be

controlled at all times.” The RSO indicated that the root cause of the missing lock was likely vandalism and indicated that based on an inspection of the area, it did not appear that licensed material had been removed from the site. This violation had low safety significance and is considered a minor violation not subject to formal enforcement action.

<sup>2</sup> No shipments of radioactive waste have been made since the last inspection

<sup>3</sup>The licensee’s proposed DP specifies leaving the slag on-site in it’s current location.

C. LICENSEE ACTIVITIES INSPECTED AFTER COMPLETION OF  
SITE REMEDIATION

☐ N/I ☒ N/A

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

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

☐ Y ☐ N

3. NRC confirmatory survey performed.

☒<sup>1</sup> Y ☐ N

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

5. Other licensee activities:

☒ Y ☐ N

Quarterly surveys and surveillance conducted on sites.

Basis for Findings:

<sup>1</sup> The inspector performed radiation surveys along selected portions of the upper and lower fence boundaries. Results were in general agreement with licensee quarterly surveys. Based on a review of the final survey report, and prior in-process observations and confirmatory measurements the inspector determined that the licensee had adequately implemented its radiation safety procedures for monitoring the site.

The licensee’s proposed action is not a final action and the licensee has been informed by the NRC that the data and results from the submitted decommissioning plan, including the RESRAD computer code results are being evaluated by an NRC contractor.

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:

Radiation Safety Officer and senior management make decisions regarding decommissioning. Consulting firm used to perform survey and document survey reports.

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

### Basis for Findings:

The Licensee's decommissioning plan is under review by the NRC and has not yet been approved. Licensee has conducted characterization work and has documented decisions regarding limited decommissioning activities.

## B. FACILITIES

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

The Reading, PA site is surrounded by chain link fence and the area is posted as a radioactive materials area. The slag-pile extends approximately 160 feet along a steep embankment adjacent to a railroad track and the Schuylkill River in Reading, PA. Access to the slag-pile is controlled with chain link fencing and locked gates.

2. The licensee's remediation plan includes all the contaminated facilities and areas on-site and off-site ☒ X<sup>1</sup> 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. ☐ Y ☒ X ☐ N

4. Licensee's emergency plan is in place and operative for the duration of decommissioning. ☐ Y ☒ X ☐ N

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:

The licensee's decommissioning plan proposes leaving the soil in place.

6. Licensee's characterization activities performed in conformance with good industry practice. ☐ Y ☐ N/A<sup>2</sup> ☐ N

Basis for Findings:

- 1 Surveys and soil sampling results from previous inspections.
- 2 The licensee's site characterization methods were not reviewed during this inspection.

#### C. EQUIPMENT AND INSTRUMENTATION

1. Survey instruments are applicable to contaminants of interest. ☒ X ☐ Y ☐ N

2. Use of survey instruments appropriate for site. ☐ 1 ☐ Y ☐ N

Basis for Findings:

Review of quarterly survey dated 12/14/01. Licensee use of survey instruments was not reviewed during this inspection.

#### A. MATERIALS

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

2. Security and control of licensed materials, including contaminated areas, is being maintained. ☒ X<sup>1</sup> ☐ Y ☐ N

Basis for Findings:

1 The site inspection confirmed that the slag-pile is surrounded by fencing with locked gates. Licensee plans to decommission using in-situ disposal.

E. TRAINING

- |                                                                                                                                                          |                                                |    |   |                                              |  |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|----|---|----------------------------------------------|--|---|
| 1. Licensee has developed training program for new decommissioning activities (e.g., demolition of structures, excavation of soil); program is adequate. | <table border="1"><tr><td>NA</td></tr></table> | NA | Y | <table border="1"><tr><td></td></tr></table> |  | N |
| NA                                                                                                                                                       |                                                |    |   |                                              |  |   |
|                                                                                                                                                          |                                                |    |   |                                              |  |   |
| 2. Training program being effectively implemented.                                                                                                       | <table border="1"><tr><td>NA</td></tr></table> | NA | Y | <table border="1"><tr><td></td></tr></table> |  | N |
| NA                                                                                                                                                       |                                                |    |   |                                              |  |   |
|                                                                                                                                                          |                                                |    |   |                                              |  |   |

Basis for Findings:

This area was not inspected.

F. AREA RADIATION SURVEYS AND CONTAMINATION CONTROL

- |                                                                                                                                                                                |                                                           |                |   |                                              |  |   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|----------------|---|----------------------------------------------|--|---|
| Area surveys are being performed in areas being decommissioned.                                                                                                                | <table border="1"><tr><td>X<sup>1</sup></td></tr></table> | X <sup>1</sup> | Y | <table border="1"><tr><td></td></tr></table> |  | N |
| X <sup>1</sup>                                                                                                                                                                 |                                                           |                |   |                                              |  |   |
|                                                                                                                                                                                |                                                           |                |   |                                              |  |   |
| 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. | <table border="1"><tr><td>X</td></tr></table>             | X              | Y | <table border="1"><tr><td></td></tr></table> |  | N |
| X                                                                                                                                                                              |                                                           |                |   |                                              |  |   |
|                                                                                                                                                                                |                                                           |                |   |                                              |  |   |

Basis for findings:

1 Review of quarterly survey which included gamma readings at the fence boundary and a water sample.

G. RADIATION PROTECTION

- |                                                                                                                      |                                               |   |   |                                              |  |   |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---|---|----------------------------------------------|--|---|
| The licensee's approved health physics program is being implemented in the field for new decommissioning activities. | <table border="1"><tr><td>X</td></tr></table> | X | Y | <table border="1"><tr><td></td></tr></table> |  | N |
| X                                                                                                                    |                                               |   |   |                                              |  |   |
|                                                                                                                      |                                               |   |   |                                              |  |   |
| Site security and control of contaminated material are in compliance with 10 CFR 20.1801 and 20.1802.                | <table border="1"><tr><td>X</td></tr></table> | X | Y | <table border="1"><tr><td></td></tr></table> |  | N |
| X                                                                                                                    |                                               |   |   |                                              |  |   |
|                                                                                                                      |                                               |   |   |                                              |  |   |

Basis for findings:

Direct field inspection on February 25, 2002.

H. RADIOACTIVE WASTE MANAGEMENT/EFFLUENTS/ENVIRONMENTAL MONITORING

- |                                                                                                                 |                                                 |     |   |                                              |  |   |
|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----|---|----------------------------------------------|--|---|
| 1. Offsite disposal of decommissioning wastes conforms to free release criteria and disposal site requirements. | <table border="1"><tr><td>N/A</td></tr></table> | N/A | Y | <table border="1"><tr><td></td></tr></table> |  | N |
| N/A                                                                                                             |                                                 |     |   |                                              |  |   |
|                                                                                                                 |                                                 |     |   |                                              |  |   |



- |    |                                                                                                                                                                       |                          |   |             |   |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---|-------------|---|
| 2. | All new effluent releases conform to DP and applicable regulations.                                                                                                   | <div>N/A</div>           | Y | <div></div> | N |
| 3. | The licensee's environmental monitoring program is being implemented in conformance with the DP and all applicable limits are being met.                              | <div>N/A</div>           | Y | <div></div> | N |
| 4. | Temporary storage/staging areas for radioactive wastes from building demolition, equipment dismantlement, soil excavation, etc., are adequately posted and protected. | <div>X<sup>1</sup></div> | Y | <div></div> | N |

Basis for findings:

The February 25, 2002 site inspection showed that the slag-pile was surrounded by fencing with locked gates and included "Caution, Radioactive Material" signs. Several of the "Radioactive Material" postings on the upper fence had been installed in the opposite direction. The RSO indicated that he would have the signs turned to face outward from the slag-pile area. This violation of the posting requirements had low safety significance is considered a minor violation not subject to formal enforcement action.

#### I. RECORDKEEPING FOR DECOMMISSIONING

- |    |                                                                                                                                                                                                                                                       |                |   |             |   |   |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---|-------------|---|---|
| 1. | Copies of the licensee's decommissioning cost estimates and funding methods are on file.                                                                                                                                                              | <div>NA</div>  | Y | <div></div> | N | 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). | <div>N/A</div> | Y | <div></div> | N | N |
| 3. | Licensee's financial assurance conforms with the financial assurance requirements of NRC-approved possession limits and NRC regulations.                                                                                                              | <div>N/A</div> | Y | <div></div> | N | N |

Basis for Findings:

Not reviewed this inspection.

#### J. TRANSPORTATION

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

No shipments made since last inspection period.

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. ☐ N/A Y ☐ N

Basis for Findings:

Not inspected

K. POSTING AND LABELING

1. All contaminated areas, waste processing areas, and waste handling areas are posted in conformance with regulations. ☐ Y ☒ X<sup>1</sup> N
2. Packaged radioactive waste materials are labeled in accordance with regulations. ☐ N/A Y ☐ N

Basis for Findings:

<sup>1</sup> During the February 25, 2002 site inspection, the fencing surrounding the slag-pile was found to be intact, the fencing was posted as a Radioactive Material area, and all access gates were securely locked. Radiation measurements obtained were found to be comparable with licensee quarterly survey results dated 12/14/01. The inspector noted that several of the "Radioactive Material" postings on the upper fence had been installed facing the opposite direction. Areas containing 10 times the radioactive material quantities specified in 10CFR20 Appendix C are required to be posted as a "Radioactive Material(s)" area. The Radiation Safety Officer indicated that this likely occurred due to a miscommunication between he and his security contractor and that he would have it corrected. The RSO reported to the inspector by telephone that the postings were corrected on February 26, 2002. This violation of the radiological posting requirements had low safety significance and is considered a minor violation not subject to formal enforcement action.

L. OCCUPATIONAL HEALTH AND SAFETY

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

Nothing significant.

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:

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.

Title 10 Code of Federal Regulations Part 20.1902 requires an area containing 10 times the radioactive material quantities specified in 10 CFR 20 Appendix C to be posted as a "Radioactive Material(s)" area. During the February 25, 2002 site inspection, the inspector noted that several of the "Radioactive Material(s)" postings on the upper fence had been installed in the opposite direction. This violation of the posting requirements had low safety significance and is considered a minor violation not subject to formal enforcement action.

NRC License No. SMC-1562, License Condition No. 13 states that "access to the site will be controlled during decontamination and decommissioning activities; access to areas where radioactive waste is stored will be controlled at all times." On December 27, 2001, NRC was notified by a representative of the State of Pennsylvania Department of Environmental Protection that the lower gate to the slag-pile was found unlocked. Upon notification, NRC contacted Mr. Tim Knapp, Radiation Safety Officer - Cabot Corporation, who in turn assigned a contractor to install a lock on the lower gate. The contractor performed a walkdown of the site and installed a new lock on December 28, 2001. The unlocked gate represented a violation of NRC License No. SMC-1562. This violation had low safety significance and is considered a minor violation not subject to formal enforcement action.