



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

December 18, 2001

Docket No. 04007102

License No. SMB-743

Nigel Morrison
Vice President and General Manager
Shieldalloy Metallurgical Corporation
West Boulevard
P. O. Box 768
Newfield, NJ 08344

SUBJECT: INSPECTION 04007102/2001001, SHIELDALLOY METALLURGICAL
CORPORATION, NEWFIELD, NEW JERSEY SITE

Dear Mr. Morrison:

On September 18, 2001, Marie Miller of this office, accompanied by Leslie Fields and Michael Raddatz from the NRC Office of Nuclear Materials Safety and Safeguards conducted a safety inspection at the above address of activities authorized by the above listed NRC license. The inspection was an examination of the status of your facility and your decommissioning planning in relation to radiation safety and to compliance with the Commission's regulations and the license conditions. The inspection consisted of observations by the inspector, interviews with personnel, and a selected examination of representative records. The inspection also included a review of your G-Warehouse Final Status Survey Report dated March 30, 2001, and independent measurements conducted by the inspector. Additional information provided in your correspondence dated November 15, 2001, which was received by this office on November 19, 2001, was also examined as part of the inspection. The findings of the inspection were discussed with you and David Smith of your organization, and Carol Berger, your consultant, at the conclusion of the inspection.

Within the scope of this inspection, no violations were identified. We acknowledge, as stated in your notification letter dated August 27, 2001, because principle NRC licensed activities have not taken place for over two years, you will submit a site-wide decommissioning plan on or before September 1, 2002. We also note that your amendment request for NRC to approve release of the G-Warehouse from your facility for unrestricted use was approved by NRC on October 9, 2001.

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/NRC/ADAMS/index.html>. No reply to this letter is required.

N. Morrison
Shieldalloy Metallurgical Corporation

2

Your cooperation with us is appreciated.

Sincerely,

Original signed by Ronald R. Bellamy

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

cc:
David R. Smith, Radiation Safety Officer
State of New Jersey

N. Morrison
Shieldalloy Metallurgical Corporation

3

Distribution:

L. Fields, NMSS
M. Raddatz, NMSS

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NAME	MMiller/mtm		RBellamy/rrb					
DATE	12/18/01		12/18/01					

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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;"> Nigel Morrison, Vice President & General Manager Shieldalloy Metallurgical Corporation West Boulevard P.O. Box 768 Newfield, NJ 08344 </div>		Inspection Report No. : 040-07102/00-01 License No.: SMB-743 Docket No. : 040-01102 Telephone No.: (856)692-4200 x226													
Licensee Contact:	David R. Smith	Date of Last Inspection:	March 13, 2000												
Priority:	3	Date of This Inspection:	September 18, 2001												
Program Code:	11700														
Type of Inspection:	<table style="width: 100%; border: none;"> <tr> <td style="width: 5%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 45%;">Announced</td> <td style="width: 5%; text-align: center;"><input type="checkbox"/></td> <td style="width: 45%;">Unannounced</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Routine</td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Special</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Initial Decommissioning</td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Reinspection of Decommissioning</td> </tr> </table>			<input checked="" type="checkbox"/>	Announced	<input type="checkbox"/>	Unannounced	<input checked="" type="checkbox"/>	Routine	<input type="checkbox"/>	Special	<input type="checkbox"/>	Initial Decommissioning	<input type="checkbox"/>	Reinspection of Decommissioning
<input checked="" type="checkbox"/>	Announced	<input type="checkbox"/>	Unannounced												
<input checked="" type="checkbox"/>	Routine	<input type="checkbox"/>	Special												
<input type="checkbox"/>	Initial Decommissioning	<input type="checkbox"/>	Reinspection of Decommissioning												
Next Inspection:	September 2002	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Reduced <input type="checkbox"/> Extended												

Brief Description of Inspection Activities:

Inspect to determine status of facility and to discuss the Final Status Survey (FSS) report submitted to NRC on March 30, 2001, regarding the request for unrestricted release of G-Warehouse.

Brief Description of Findings and Action:

The licensee activities with respect to processing of licensed material for the production of specialty alloys had been inactive for two years and the licensee provided notification in accordance with the requirements of the Decommissioning Timeliness Rule. The licensee intends to submit a site-wide Decommissioning Plan not later than September 1, 2002. Because no principle licensed activities occurred since the last inspection, the inspection focused on the licensee's plans for decommissioning and also an survey result of the G-warehouse.(See attached Appendix B)

Summary of Findings and Action:

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

Inspector:	Marie Miller, Senior Health Physicist, Decommissioning and Laboratory Branch (DLB) (Type Inspector's Name)	Date:	December 18, 2001
Approved:	Ronald R. Bellamy, Chief, DLB, Division of Nuclear Materials Safety, RI	Date:	December 18, 2001

[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"/>	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 type="checkbox"/>	Y	<input checked="" type="checkbox"/>	N
E. NRC confirmatory survey required.	<input type="checkbox"/>	Y	<input checked="" type="checkbox"/>	N
F. NRC closeout inspection required.	<input type="checkbox"/>	Y	<input checked="" 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 type="checkbox"/>	Y	<input checked="" type="checkbox"/>	N

Description of Facility Status:

No principle licensed activities. Licensee conducting quarterly surveys and quarterly radiation safety committee meetings. No source material received or transported since last inspection.

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 type="checkbox"/> | N |
| 2. Facility license conditions are in place and met by licensee. | <input type="checkbox"/> | 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 type="checkbox"/> | Y | <input type="checkbox"/> | N |
| 4. Support systems and services (e.g., lighting, water supply) are in place. | <input type="checkbox"/> | Y | <input type="checkbox"/> | N |
| 5. Decommissioning schedules are consistent with timeliness requirements in 10 CFR 30.36, 40.42, and 70.38. | <input type="checkbox"/> | Y | <input type="checkbox"/> | N |
| 6. Licensee's recordkeeping is consistent with 10 CFR 30.35, 40.36, and 70.25. | <input type="checkbox"/> | 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 type="checkbox"/> | Y | <input type="checkbox"/> | N |
| 8. Licensee is conducting site characterization in accordance with applicable radiation protection procedures. | <input type="checkbox"/> | 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"/> | Y | <input type="checkbox"/> | N |
| 10. Licensee activities conform to specific license conditions and licensee programs and procedures. | <input type="checkbox"/> | 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:

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

☒ N/I ☐ N/A

- | | | | | |
|---|--------------------------|---|--------------------------|---|
| 1. Site security and control of contaminated material being maintained in compliance with 10 CFR Part 20. | <input type="checkbox"/> | 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"/> | Y | <input type="checkbox"/> | N |
| 3. Decontamination and remediation of the following are being performed consistent with DP and sound industry practice: | <input type="checkbox"/> | Y | <input type="checkbox"/> | N |

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

Basis for Findings:

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.	<input checked="" type="checkbox"/>	Y	<input type="checkbox"/>	N
2.	Licensee's final survey program is acceptable (see Appendix B for inspection items for final surveys).	<input checked="" type="checkbox"/>	Y	<input type="checkbox"/>	N

- | | | | | | |
|---|--|--|---|--------------------------|---|
| 3. | NRC confirmatory survey performed. | <input checked="checked" type="checkbox"/> | Y | <input type="checkbox"/> | N |
| 4. | Site maintenance activities (if any, for restricted use) conform to license conditions and NRC-approved plans and are in place and functional. | <input checked="checked" type="checkbox"/> | Y | <input type="checkbox"/> | N |
| 5. | Other licensee activities: | <input checked="checked" type="checkbox"/> | Y | <input type="checkbox"/> | N |
| Distribution of licensed raw materials and storage of licensed materials. | | | | | |

Basis for Findings:

The licensee submitted a FSS report for G-Warehouse. Based on a review of the final survey report, observations and confirmatory measurements the inspector determined that the licensee had adequately implemented its radiation safety procedures for release criteria. This remediation is not a final action and the licensee retained ownership of the area. By letter dated October 9, 2001, the NRC approved the licensee's amendment request for unrestricted use release of this portion of the licensee's facility.

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 Radiation Safety Committee 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. | <input type="checkbox"/> | Y | <input checked="checked" type="checkbox"/> | N |
| | Licensee has implemented procedures for the decommissioning activities identified in the DP. | <input checked="checked" type="checkbox"/> | Y | <input type="checkbox"/> | N |
| | The RSC and RSO fulfill license requirements to deal with all decommissioning activities. | <input checked="checked" type="checkbox"/> | Y | <input type="checkbox"/> | N |

Basis for Findings:

RSC meets and documents decisions regarding limited decommissioning activities.
Licensee implementing release criteria procedures which were approved by NRC. Note(1):
A DP is not required for the decommissioning activities completed to date.

B. FACILITIES

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

Not Applicable. No remediation required.

2. The licensee's remediation plan includes all the contaminated facilities and areas on-site and off-site ☐ 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 ☐ N
4. Licensee's emergency plan is in place and operative for the duration of decommissioning. ☐ Y ☐ 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:
6. Licensee's characterization activities performed in conformance with good industry practice. ☐ Y ☐ N

Basis for Findings:

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:

Consulting firm provided appropriate survey instruments and met screening criteria.

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 ☐ Y ☐ N

Basis for Findings:

All licensed material remains onsite. 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. ☒ X ☐ Y ☐ N

2. Training program being effectively implemented. ☒ X ☐ Y ☐ N

Basis for Findings:

Licensee using experience technicians and health physics professionals for surveys.

F. AREA RADIATION SURVEYS AND CONTAMINATION CONTROL

Area surveys are being performed in areas being decommissioned. ☒ X ☐ Y ☐ N

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:

All results were consistent with background.

G. RADIATION PROTECTION

The licensee's approved health physics program is being implemented in the field for new decommissioning activities. ☒ X ☐ Y ☐ N

Site security and control of contaminated material are in compliance with 10 CFR 20.1801 and 20.1802. ☒ X ☐ Y ☐ N

Basis for findings:

Areas were posted as required. Access to site controlled by entering through reception area into fenced property.

H. RADIOACTIVE WASTE MANAGEMENT/EFFLUENTS/ENVIRONMENTAL MONITORING

- | | | | | | |
|----|---|---|---|--------------------------|---|
| 1. | Offsite disposal of decommissioning wastes conforms to free release criteria and disposal site requirements. | <input checked="" type="checkbox"/> N/I | Y | <input type="checkbox"/> | N |
| 2. | All new effluent releases conform to DP and applicable regulations. | <input checked="" type="checkbox"/> N/I | Y | <input type="checkbox"/> | N |
| 3. | The licensee's environmental monitoring program is being implemented in conformance with the DP and all applicable limits are being met. | <input checked="" type="checkbox"/> N/I | Y | <input type="checkbox"/> | N |
| 4. | Temporary storage/staging areas for radioactive wastes from building demolition, equipment dismantlement, soil excavation, etc., are adequately posted and protected. | <input checked="" type="checkbox"/> N/A | Y | <input type="checkbox"/> | N |

Basis for findings:

Survey results documented in final survey report. Results below site specific criteria approved by NRC in August 1998.

I. RECORDKEEPING FOR DECOMMISSIONING

- | | | | | | | |
|----|---|---------------------------------------|---|--------------------------|---|---|
| 1. | Copies of the licensee's decommissioning cost estimates and funding methods are on file. | <input checked="" type="checkbox"/> X | Y | <input type="checkbox"/> | 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). | <input checked="" type="checkbox"/> X | Y | <input type="checkbox"/> | N | N |
| 3. | Licensee's financial assurance conforms with the financial assurance requirements of NRC-approved possession limits and NRC regulations. | <input checked="" type="checkbox"/> X | Y | <input type="checkbox"/> | N | N |

Basis for Findings:

Decommissioning Funding Plan (DFP) submitted to NRC on October 19, 1999. Note (1): The adequacy of the licensee's financial assurance requirements will be reviewed as part of this licensing action.

J. TRANSPORTATION

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

No shipments made during 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
☐ I

Y

☐

N

Basis for Findings:

Area was not inspected.

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.

☐

Y

☒ X

N

Basis for Findings:

Inspector observed radioactive material postings. Waste stored in SMSY. Waste not packaged for disposal.

L. OCCUPATIONAL HEALTH AND SAFETY

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

Area not inspected

2. Licensee and Occupational Safety and Health Administration were informed of occupational health and safety issues observed during the inspection.

☐

Y

☐

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.

None.

**APPENDIX B
MATERIALS DECOMMISSIONING INSPECTION RECORD
REGION I
FINAL SURVEY PROGRAM INSPECTION FIELD NOTES**

Licensee (Name & Address): <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Nigel Morrison, Vice President & General Manager Shieldalloy Metallurgical Corporation West Boulevard P.O. Box 768 Newfield, NJ 08344 </div>	Inspection Report No. : 040-07102/00-01 License No.: SMB-743 Docket No. : 040-01102
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1. STATUS OF LICENSEE FINAL SURVEY

- | | |
|--|--------------|
| A. Final survey report submitted to the NRC. | (X) Y () N |
| B. Previous inspection(s) of licensee final survey program conducted. | () Y (X) N |
| C. Final survey report not submitted, licensee final survey in progress. | () Y (X) N |
| D. Final survey plan submitted and approved by NRC license reviewer. | (X) Y () N |

Basis for Findings: License letter dated March 30, 2001, submitted Final Status Survey of G-Warehouse in support of its amendment request to remove this facility from the listing of permanent restricted areas. This amendment request was approved by NRC letter dated October 9, 2001. Licensee also provided additional information to support its Final Status Survey documentation by letter dated November 15, 2001.

2. INSPECTION AREAS FOR LICENSEE FINAL SURVEYS

Notes:

4. For facilities where an approved decommissioning plan (DP) is required, inspections should be made against commitments in the DP and the licensee's final survey plan (which would have been approved by the NRC license reviewer during license review). For facilities where a DP is not required, inspections should be made against NRC regulations, license conditions, and applicable guidance in NUREG/CR-5849.

5. For facilities that require a significant decommissioning effort, all the inspection areas listed below should be inspected while the licensee's final survey program is in progress. For small, licensed facilities that do not require a significant decommissioning effort, only some of the inspection areas below may apply, and it may not be practicable to inspect these areas until after the licensee's final survey is completed and the licensee's final survey report has been submitted to NRC.

6. Inspection of a licensee's final survey may include independent confirmatory measurements by the inspector or NRC contractor. The extent of the confirmatory measurements, and whether the use of an NRC contractor is warranted, depends on a

number factors that are discussed in Section 2.C. In most cases, minimal confirmatory surveys should be sufficient.

7. The inspector should identify which inspection areas listed below are performed during each inspection.

A. SITE CONDITIONS AT TIME OF LICENSEE FINAL SURVEY

1. Site has been decontaminated/remediated in accordance with DP or site procedures. () Y (X) N

Basis for Findings: DP not required. No remediation was necessary.

B. LICENSEE FINAL SURVEY PLANS AND PROCEDURES

1. Contaminants:
- a. Licensee has identified all potential contaminants. (X) Y () N
 - b. Licensee has specified acceptable release criteria. (X) Y () N
 - c. Licensee has clearly documented the basis for any alternate criteria, if applicable. (X) Y () N
2. Organization and Responsibilities:
- a. Survey program documented. (X) Y () N
 - b. Survey staff responsibilities and qualifications documented. (X) Y () N
3. Quality Assurance/Quality Control: Not Inspected
- a. Organization () Y () N
 - b. QA Program () Y () N
 - c. Operational Procedures () Y () N
 - d. Document Control/Records Management () Y () N
 - e. Equipment Maintenance and Control () Y () N
 - f. Audits and Corrective Action () Y () N
 - g. Independent third party measurement QC () Y () N
4. Laboratory analytical procedures, including QA/QC, acceptable, and results adequately documented. () Y () N
5. Field Survey Instrumentation:
- a. Survey instrumentation is appropriate for contaminants of interest and site conditions. (X) Y () N
 - b. Licensee has properly calibrated survey instrumentation. (X) Y () N
 - c. Instrument operational procedures adequate (X) Y () N

Basis for Findings:

The licensee's FSS and letter dated November 15, 2001, provided the required information in accordance with MARSSIM guidance. No residual radioactive source material was identified. Contamination was generally consistent with background and well below release criterion.

6. Licensee is performing the survey in conformance with the approved survey plan (or regulations, applicable guidance in NUREG/CR-5849, and good industry practice, if NRC approval of a survey plan was not required):
- a. All potentially contaminated locations on-site and off-site have been properly classified as "affected" or "unaffected" areas. (X) Y () N
 - b. "Survey Units" have been properly selected. (X) Y () N
 - c. Background determination acceptable. (X) Y () N
 - d. Number and location of measurements and samples in each "survey unit" is acceptable. (X) Y () N
 - e. Surface scan procedures and percent coverage acceptable. (X) Y () N
 - f. Surface activity measurement procedures acceptable.
 - (1) Direct. (X) Y () N
 - (2) Removable. (X) Y () N
 - g. Exposure rate measurement procedures acceptable. (X) Y () N
 - h. Surveying and sampling of the following media conducted as appropriate:
 - (1) Soil and sediment, surface and subsurface. (NA)
 - (2) Groundwater. (NA)
 - (3) Surface water. (NA)
 - (4) Buildings, interiors and exteriors. (X) Y () N
 - (5) Equipment and systems. (X) Y () N
 - (6) Grounds. (NA)
 - (7) Other media: (NA)
-
-

Basis for Findings:

The licensee's contractor used gas-flow proportional floor and wall detector and exposure rate meters. No volumetric material was required based on classification of the area and scan surveys.

7. Licensee's Final Survey report sufficient to demonstrate that release criteria have been met.

Note: The final survey report will, in general, not be available for review at the time of an "in-process" inspection of a final survey program. However, at the end of the survey project, after the final survey report has been submitted, the inspector should ensure that these areas have been reviewed by either the license reviewer or project manager. If questions remain as to whether these areas have been satisfied by the licensee, or the final survey report has not been reviewed, the areas listed below should be addressed during the inspection.

- a. Survey results demonstrate, with 95% confidence, that average residual contamination in each "survey unit" is less than release criteria. (X) Y () N

- | | | |
|----|---|--------------|
| b. | Survey results demonstrate that the hot-spot criteria in NUREG/CR-5849 have been satisfied. | (x) Y () N |
| c. | Elevated survey results investigated by licensee. | (NA) |
| d. | Unaffected "Survey Units" reclassified, as necessary, based on survey results. | (NA) |
| e. | Survey report provides sufficient documentation of procedures and QA/QC. | (NA) |
| f. | Survey report provides diagrams or other documentation identifying survey locations. | (x) Y () N |

Basis for Findings:

Information documented in FSS and licensee letter dated November 15, 2001. Latter letter provided one page from survey that was not included in the original FSS documentation package.

C. NRC CONFIRMATORY SURVEY

- | | | |
|----|---|--------------|
| 1. | Evaluate whether a confirmatory survey is justified. | |
| a. | Significant, unresolved, weaknesses identified during the inspection of the licensee's final survey program. | () Y (X) N |
| b. | Repetitive violations. | () Y (X) N |
| c. | Significant public or Congressional interest. | () Y (X) N |
| d. | Small site where an in-process inspection not practical. | () Y (X) N |
| 2. | If a confirmatory survey is justified, determine if an NRC contractor should be used. Meeting one or more of the three criteria listed below will, in general, justify the use of a contractor. | |
| a. | Licensee's final survey involves unique or complex technical issues. | () Y (X) N |
| b. | Confirmatory survey is expected to require more than a man-week effort to complete field surveys and sampling. | () Y (X) N |
| c. | Confirmatory survey is very high priority that cannot be completed by NRC staff in a timely manner. | () Y (X) N |

Basis for Findings:

Residual radioactive material of concern was Th-232 in equilibrium with progeny and U-238 in equilibrium with progeny. The licensee demonstrated by alpha/beta and alpha measurements that the screening level of 600 disintegrations per minute per 100 cm² was not exceeded. Further, NRC conducted a screening survey (sixteen bias measurements) on September 18, 2001. These measurements were made using a Ludlum 43-8,Zinc-Sulfide (#054818) probe with Ludlum Model 2221 scaler (#054828), and Ludlum Model 19 (#009498) microR meter for exposure measurement. All measurements were consistent with background.

END