



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

September 15, 2006

Docket No. 04007455

License No. SMA-1018

Eric G. Lardiere
Vice President, General Counsel, and Secretary
Whittaker Corporation
1955 N. Surveyor Avenue
Simi Valley, CA 93063-3386

SUBJECT: INSPECTION 04007455/2006001, WHITTAKER CORPORATION, WHITTAKER SITE, TRANSFER, PENNSYLVANIA

Dear Mr. Lardiere:

On May 23 - August 24, 2006, Marjorie McLaughlin and James Kottan of this office conducted an announced safety inspection at the Whittaker Site, Transfer, Pennsylvania of activities authorized by the above listed NRC license. The inspection was an examination of your licensed activities as they related to radiation safety and to compliance with the Commission's regulations and the license conditions. The inspection consisted of observations and independent direct radiation measurements by the inspectors, interviews with personnel, and a selected examination of representative records. The findings of the inspection were discussed with the Radiation Safety Officer, Kevin Taylor, and others of your organization at the conclusion of the inspection. The enclosed report presents the results of this inspection.

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

Current NRC regulations are included on the NRC's website at www.nrc.gov; select **Nuclear Materials; Medical, Academic, and Industrial Uses of Nuclear Material**; then **Toolkit Index Page**. The current NRC Enforcement Policy is included on the NRC's website at www.nrc.gov; select **What We Do, Enforcement**, then **Enforcement Policy**. Or you may obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-888-293-6498. The GPO is open from 7:00 a.m. to 8:00 p.m. EST, Monday through Friday (except Federal holidays).

No reply to this letter is required. Your cooperation with us is appreciated.

Sincerely,

Original Signed by:

Marie Miller, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

Enclosure:
Inspection Report No. 04007455/2006001

E. Lardiere
Whittaker Corporation

2

cc:

Kevin E. Taylor, P.E., Radiation Safety Officer
Bryan Werner, PADEP Project Manager
Roy Woods, PADEP, Southwest Regional Office
State of California
Commonwealth of Pennsylvania

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SUNSI Review Complete: JKottan

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Inspection No. 04007455/2006001
Docket No. 04007455
License No. SMA-1018
Licensee: Whittaker Corporation
Address: 1955 N. Surveyor Avenue
Simi Valley, CA 93063-3386
Locations Inspected: 99 Crestview Drive
Transfer, PA 16154-2317
Inspection Dates: May 23 - August 24, 2006

Inspectors: Marjorie McLaughlin
Health Physicist

James Kottan
Senior Health Physicist

Approved By: Marie Miller, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Whittaker Corporation
NRC Inspection Report No. 04007455/2006001

Whittaker Corporation was actively working towards completion of the site remediation activities that were necessary to terminate its NRC license and release the site for unrestricted use. Decommissioning of Section 2 was complete, with the exception of areas requiring additional investigation and potential remediation. Whittaker was developing plans to address these areas, and was working on their implementation. Current site decommissioning activities were being performed in accordance with Whittaker's approved NRC license.

Whittaker Corporation was adequately providing for the security and control of the licensed radioactive material onsite. The licensee identified the presence of licensed material offsite, and ensured that the material was secured in accordance with NRC regulations. The site boundary was posted and maintained in accordance with NRC requirements.

Decommissioning activities were adequately staffed and managed. The site owner was regularly informed of project activities, and had authorized the decommissioning contractor to perform day-to-day control of site operations. Decommissioning activities were performed in accordance with NRC regulations and the licensing documents.

Radioactive waste shipments were adequately controlled and appropriately conducted in accordance with applicable Department of Transportation (DOT) and NRC regulations. Radiation surveys were performed to verify that dose limits were not exceeded. Shipping documentation was completed properly and truck postings met the exemption requirements.

REPORT DETAILS

I. Decontamination and Remediation of Soil and Sediment

a. Inspection Scope

The inspectors observed decontamination of soil and sediment to verify that remediation activities are being performed in accordance with applicable NRC regulations and guidance. The inspection included review of the licensee's investigation of an area with contamination at a greater depth than expected. The inspectors also reviewed the licensee's progress with obtaining an Access Agreement with a neighboring facility for the performance of subsurface soil characterization and potential remediation.

b. Observations and Findings

Section 2 of the Whittaker site was uniformly excavated to a depth of at least 16 feet (ft) below grade. The licensee identified higher concentrations of contaminated slag at greater depths in the southern portion of Section 2, where the excavation reached a depth of almost 20 ft. At this greater depth, what appeared to be native soil was exposed. The inspectors observed that this soil was composed primarily of river rock and coarsely-grained soil. This material was in sharp contrast with the bottom of the more shallow excavated areas, which were characterized by fine-grained foundry sand.

Whittaker identified a localized area of even deeper contamination in the southern tip of this excavated area. This pit comprised approximately 24 ft², was delineated with roping, and was excavated to a depth of 24 - 25 ft below grade. This depth was below the water table, as evidenced by groundwater intrusion into the excavation. The licensee obtained soil samples from various depths and sent them to a lab for analysis. The licensee also obtained samples of the groundwater in the excavation. The inspectors reviewed the results of these analyses, which indicated that the soil contamination did not extend beyond two feet below the excavation. Additionally, the inspectors noted that the groundwater samples did not contain radioactive material, but did contain trichloroethylene (a contaminant that the licensee stated impacts the groundwater throughout the industrial park within which the Whittaker site is located).

The inspectors observed exploratory trenches that the licensee had dug in locations both around the pit and throughout the remainder of Section 2. The inspectors reviewed the licensee's surveys within these trenches, which indicated that the deeper contamination was confined to the one localized area. The inspectors performed a direct radiation survey using a microR meter and found general area exposure rates within Section 2 averaged approximately 10 microrem per hour (uR/hr). At the boundary of the pit, general area exposure rates averaged 35 - 45 uR/hr. There were no concerns identified with the licensee's investigation of and remediation plans for the area of deeper contamination.

The inspectors observed licensee remediation activities in the Section 2 area. Licensee surveys previously identified pieces of slag on the surface of the river bank and wetlands areas, and also the presence of contaminated sediment in the riverbed. All slag had been removed from the original area of Section 2 (from the river bank to the original fence location at the boundary of the Greenville property) by the conclusion of the inspection on August 24, 2006, including the approximately 24 ft² area of deeper contamination in the southern tip of Section 2. This area of deeper contamination had been filled by the licensee. Prior to filling the excavation, the licensee performed a final status survey (FSS) of the excavation and obtained FSS soil samples. The preliminary FSS soil sample results were reviewed by the inspector, and two of the samples were split with the NRC for the purpose of intercomparison. The licensee analyzed the samples on site, and the NRC split samples will be analyzed by the NRC's contact laboratory, the Oak Ridge Institute for Science and Education radioanalytical laboratory. The results of these analyses will be reported in a subsequent inspection report. The inspectors also discussed with the licensee their plans for assessing contamination in the riverbed. The licensee indicated that they are developing a plan in cooperation with the Army Corps of Engineers to temporarily adjust the river flow so that surveys and remediation activities, if necessary, may be performed.

The inspectors also requested an update on the status of the licensee's Decommissioning Plan submittal and reviewed the licensee's general schedule of remediation activities for the remainder of 2006. The licensee stated that they planned to submit the Decommissioning Plan by the end of September 2006. With respect to decontamination and remediation activities, no findings of significance were identified.

c. Conclusions

Whittaker Corporation was actively working to complete the site remediation activities that are necessary for license termination and release of the site for unrestricted use. Decommissioning of Section 2 was complete, with the exception of areas requiring additional investigation and potential remediation. Whittaker was developing plans to address these areas, and was working on their implementation. Submittal and approval of either the Decommissioning Plan or individual work plans are necessary for the Greenville Metals and Shenango Riverbed activities to commence. Current activities were being performed in accordance with the approved license.

II. Security and Control of Contaminated Materials

a. Inspection Scope

The inspectors observed security and control of radioactive material in order to verify that the site was being maintained in accordance with applicable NRC regulations. The inspection included field observation of site postings and security.

b. Observations and Findings

Radioactive waste material staged at the Whittaker site consisted of slag and debris excavated from Section 2 and miscellaneous contaminated metal and drums. The inspectors observed that all waste material was staged in the northwestern portion of the site on the Section 3 concrete pad, located within the roped Radiological Controlled Area (RCA). The waste storage area was near the site fence between Whittaker and Greenville Metals. The inspectors reviewed the licensee's weekly fenceline radiation surveys, and determined that public dose limits were not exceeded by performing an independent fenceline direct radiation survey. In addition, the inspectors identified that fenceline radiation levels have decreased in this area of the site over the past several weeks as most of the material has now been shipped for disposal. The inspectors verified the operability and calibration of a sampling of the licensee's instrumentation, and reviewed the results of the licensee's radiation and contamination surveys and air sampling results.

The Whittaker site was located within an industrial park, and shared a common entrance with Greenville Metals. The entrance was secured with an electronic gate, and access was granted by personnel in a guardhouse. Whittaker was situated behind Greenville Metals, and was bounded by the plant to the west, the gravel access road and thick vegetation to the north, and additional thick vegetation and the Shenango River to the east and south. The Whittaker property was enclosed by a metal chain link fence that was topped with razor wire. The site was not easily accessible due to its location adjacent to the river and the heavy plant growth. The fenceline was posted at various intervals with Radioactive Materials postings. The licensee stated that, on occasion, radioactive materials area postings were stolen from the fence near the river, presumably by boaters who climb up the steep shoreline to the fence. The inspectors performed a site perimeter walk-down to verify posting and security requirements were being met. The inspectors identified no findings of significance.

The southwest corner of Section 2 borders Section 4 to the south and the neighboring Greenville Metals (Greenville) property to the west. The site fence at the top of the excavation along the Section 2 western boundary separates the Whittaker and Greenville properties. In this corner, the licensee had previously identified contamination on the western excavation wall, that appeared to extend below the surface onto the Greenville property. The licensee obtained an Access Agreement from Greenville in order to perform characterization surveys to determine the extent of the contamination and develop a remediation plan. The Whittaker decommissioning contractor began surveys of the Greenville property.

On May 31, 2006, the RSO notified the NRC inspectors of the licensee's identification of surface and subsurface slag pieces on the Greenville property across from Section 1 of the Whittaker site. The slag had been identified during a routine fenceline survey, when the HP technician moved several feet back from the fence. The RSO stated that slag had been found as far as fifty feet beyond the fence line and at depths greater than two feet. The RSO informed the inspectors that any material that could be removed by hand was relocated to the Whittaker property. Because the material was identified prior to the Access Agreement approval, heavy equipment and detailed subsurface characterization was not permitted. However, the RSO provided a copy of the licensee's radiation survey of the surface slag pieces. The radiation levels ranged from 20 $\mu\text{R/hr}$ to 120 $\mu\text{R/hr}$ on contact with the slag pieces and 12-14 $\mu\text{R/hr}$ general area, which was just above the background dose rate of 11 $\mu\text{R/hr}$. The slag exhibiting the highest contact dose rate was too large to remove by hand.

The RSO determined that the slag did not meet the posting requirement of 10 CFR 20.1902(e) for a Radioactive Materials Area. The inspectors verified the RSO's determination. The inspectors also determined that the security of the material was maintained by the security fence that surround the Greenville property. The inspectors required the licensee to notify the Greenville property owners of the discovery of the material and inform their employees to not remove or disturb the slag pieces. The inspectors also required the licensee to obtain agreement from Greenville that their site fence may be used to provide security of the material. On June 13, 2006, the licensee provided the inspectors a letter stating that Greenville Metals was notified of the slag discovery on June 1, 2006. The licensee obtained a signed memorandum from Greenville acknowledging that its employees will not remove the slag material and that its fence may provide for the material's security. The June 13 letter also stated that, under the newly-signed Access Agreement, the licensee will perform additional surveys of the Greenville property in this area, and will install a separate fence to enclose the material. The inspector identified no areas of concern with the licensee's analysis and actions related to the discovery and control of this material.

c. Conclusions

Whittaker Corporation was adequately providing for the security and control of its licensed radioactive material. The licensee identified the presence of licensed material offsite, and ensured that the material was secured in accordance with NRC regulations. The licensee was pursuing removal of this material and the performance of additional surveys to assess the extent of the problem. The site boundary was posted and maintained in accordance with NRC requirements.

III. Management Organization and Controls

a. Inspection Scope

The inspectors reviewed the licensee's implementation of approved plans and programs and license conditions for management and control of facility decommissioning. The inspection included review of the implementation of the Erosion and Sediment Pollution Control Plan, and the extent of any excavation activities within site wetland areas.

b. Observations and Findings

Whittaker Corporation, the site owner and licensee, employed a contractor for site maintenance, oversight, and remediation. The contractor company had undergone one merger and changed names twice over the past year. Personnel involved with the Whittaker project have principally remained unchanged, however, the contractor recently assigned a new project manager (PM). The PM performed high level project oversight, planning, and coordination, and served as the main point of contact between Whittaker Corporation and the contractor. The previous PM provided the Whittaker Vice President with a project status report every month. The inspectors interviewed the new PM, who indicated that this practice would continue. The site RSO was also a contractor employee. The RSO worked from an office in South Carolina, but visited the site regularly, and was present for the inspection. The inspectors reviewed an independent inspection of the site radioactive waste management operations conducted on April 26, 2006 by the RSO. This inspection was conducted in sufficient detail to identify programmatic problems in the radioactive waste management area, and the contractor prepared a detailed written response to each identified inspection observation. Contractor personnel currently stationed at the site include a Site Supervisor, who provided day-to-day oversight of work activities, two health physics technicians, one shipper/health physicist, and two equipment operators. The licensee indicated that site staffing may decrease slightly when shipping of the staged Section 2 material was completed. The inspectors identified no areas of concern with site staffing or project oversight.

The Whittaker NRC license authorized the decommissioning activities currently underway at the site, including excavation of specific areas and radioactive waste shipping. Specific controls associated with these activities were described in the most recent license renewal application (dated May 26, 2004) and in the tie-down document, "Erosion and Sediment Pollution Control Plan for Phase 1 and Phase 2 Activities at the Whittaker Remediation Site" (ESPCP). The ESPCP described the control of site runoff and migration of slag material and sediments from the excavation areas. The inspectors verified that silt fencing was in place, and in good condition, at the base of the excavated area slopes in accordance with the ESPCP. The inspectors also verified that a previously-excavated subsurface area in the southwest corner of Section 2, that extends onto the Greenville Metals property, was stabilized with fill material. This material was a temporary stabilization measure that was put in place prior to the winter demobilization. The inspectors verified that the stabilization of this area was in accordance with the ESPCP.

c. Conclusions

The decommissioning activities at the Whittaker site were adequately staffed and managed. The site owner was regularly informed of project activities, and had authorized the decommissioning contractor to perform day-to-day control of site operations. Decommissioning activities were performed in accordance with NRC regulations and the licensing documents.

IV. Transportation of Wastes

a. Inspection Scope

The inspectors observed the licensee's radioactive material shipments, reviewed shipping manifests and survey records, and performed independent radiation surveys to determine compliance with NRC and Department of Transportation (DOT) requirements for placarding and marking, shipping paper documentation, and radiation exposure limits.

b. Observations and Findings

The Whittaker site demobilized in November 2005, with approximately 4500 tons of radioactive material remaining for shipment to a radiological waste disposal facility. With the restart of decommissioning activities in April 2006, the primary action had been completing the shipment of this material. The licensee informed the inspectors that there were approximately fifteen shipments of this material every day, four days per week. Each shipment contained approximately 21 tons of waste material.

The inspectors observed twelve radioactive material shipments. Three trucks with open-top trailers carried the waste material from the Whittaker site to ALARON, where the material would be consolidated in gondola rail cars and transported to the EnergySolutions Bulk Waste Facility in Utah. The same three trucks were used for all shipments, and they traveled back and forth between the two sites.

The inspectors observed that the trucks backed into the Radiological Controlled Area (RCA) where a Whittaker equipment operator used a front loader truck to load the trailer with material. The material had been previously screened to remove the non-radiologically contaminated (or clean) soil, leaving only large pieces of slag and some other metal debris. The inspectors observed that dust controls were not used, and were not necessary (i.e., loading the trucks with the slag did not create dust). The licensee loaded the trucks to the approximate load limit (based on weight of the material). Because the slag density is high, the trucks approach the weight limit well before the volume is filled, leaving a lot of empty space on each truckload.

After a truck was loaded, the Whittaker HPs performed contamination surveys of the tires and contact radiation surveys of the outer truck liner. The inspectors verified the operability and calibration of the licensee's instruments. The inspectors performed independent survey measurements of one loaded truck. The outer liner measured 200

$\mu\text{R/h}$ to $900 \mu\text{R/hr}$. The radiation readings measured by the inspectors corresponded to the readings measured by the licensee

After the radiation surveys, the inspectors observed that the licensee weighed each truck using the Greenville scale, to verify that the load limit was not exceeded. The inspectors observed that the licensee completed the shipping manifest and provided it to the driver while the truck was being weighed. The licensee utilized the exemption in 49 CFR 173.401(b)(4), for natural material and ores containing naturally occurring radionuclides which are not intended to be processed for use of the radioactive components, provided the activity does not exceed ten times the values listed in 49 CFR 173.436. The inspectors determined that this exemption was being appropriately applied. No findings of significance were identified.

c. Conclusions

The Whittaker waste transportation activities were performed in accordance with applicable DOT and NRC regulations. Radiation surveys were performed to verify that dose limits were not exceeded. Shipping documentation was completed properly and truck postings met the exemption requirements.

V. Exit Meeting

After the site inspection on May 23, 2006 and August 24, 2006, the initial results of the inspection were discussed with the Whittaker RSO, Site Supervisor, Project Manager and the environmental contractor.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

Pat Horkman, EnergySolutions, Whittaker Supervisor
Tom Riley, TETRA TECH NUS, Inc, Civil Engineer
Kevin Taylor, EnergySolutions, Radiation Safety Officer
Gerard Toumey, EnergySolutions, Project Manager
Randy, EnergySolutions, Whittaker HP and Shipper
Jimmy Valentine, EnergySolutions, Whittaker HP

PADEP

Edward Orris, PADEP, Northwest Region, Permits and Technical Services, Watershed Management
Bryan Werner, PADEP, Bureau of Radiation Protection, Project Manager
Roy Woods, PADEP, Bureau of Radiation Protection, Southwest Region, Health Physicist