



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

May 5, 2006

Mr. E. Jonathan Jackson, President/CEO
FMRI (a subsidiary of reorganized Fansteel, Inc.)
Number Ten Tantalum Place
Muskogee, Oklahoma 74403

SUBJECT: INSPECTION REPORT 040-7580/06-001

Dear Mr. Jackson:

This refers to the inspection conducted April 10-12, 2006, at FMRI's rare earth recovery facility in Muskogee, Oklahoma. An exit briefing was conducted onsite at the conclusion of the inspection on April 12, 2006, and a final telephonic exit was conducted with you on May 5, 2006. The enclosed report presents the results of that inspection.

The purpose of the inspection was to examine activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, conditions of your license, and the approved decommissioning plan. Within these areas, the inspection consisted of selected examination of procedures and representative records, facility site tours, and interviews with personnel.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/Adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction.

Should you have any questions concerning this inspection, please contact Ms. Beth Schlapper at (817) 860-8169 or the undersigned at (817) 860-8191.

Sincerely,

/RA/

D. Blair Spitzberg, Ph.D. Chief
Fuel Cycle and Decommissioning Branch

Docket No.: 040-07580
License No.: SMB-911

Enclosure:
NRC Inspection Report 040-07580/06-001

FMRI, Inc.

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FCDB File

RIV Nuclear Materials File - 5th Floor

SISP Review Completed: bas

ADAMS: Yes No Initials: bas

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ENCLOSURE 1

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.: 040-07580

License No.: SMB-911 (expired September 30, 2002)

Report No.: 040-07580/06-001

Licensee: FMRI (a subsidiary of Reorganized Fansteel)

Facility: Muskogee Plant

Location: Muskogee, Oklahoma

Inspection Dates: April 10 - 12, 2006

Inspector: Beth Schlapper, Health Physicist
Fuel Cycle & Decommissioning Branch

Accompanied By: John Flynn, Environmental Engineer
Oklahoma Department of Environmental Quality
Waste Management Division
Radiation Management Section

J. Paul Davis, Environmental Programs Specialist
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Robert D. Singletary, Assistant Attorney General
Office of Attorney General, State of Oklahoma

Approved By: D. Blair Spitzberg, Ph.D., Chief
Fuel Cycle & Decommissioning Branch

Attachment: Supplemental Inspection Information

EXECUTIVE SUMMARY

FMRI, Muskogee Plant
NRC Inspection Report 040-07580/06-001

This inspection included a review of radiation protection, environmental protection, low-level radioactive waste storage and radioactive waste management, onsite construction, decommissioning, management and organization, transportation activities and followup of previous NRC inspection findings. Overall, the licensee was conducting Phase 1 reclamation and routine site operations in accordance with regulatory and license requirements.

Radiation Protection

- The licensee implemented a radiation protection program that met the requirements established in 10 CFR Part 20 and the license. Site tours confirmed that security and control of radioactive material were adequate. Occupational exposures were below regulatory limits, and contamination control efforts were effective (Section 1).

Environmental Protection

- The environmental and effluent monitoring programs were implemented in accordance with license requirements. All required samples were collected, and no sample result exceeded any regulatory or reporting limit (Section 2).

Low-Level Radioactive Waste Storage and Radioactive Waste Management

- The licensee had effectively implemented the license requirements related to the management of radioactive waste. All radioactive material storage areas were protected and controlled with proper radiological posting/labeling as required (Section 3).

Onsite Construction

- The licensee had constructed the onsite material drying, staging, and processing areas in accordance with the Decommissioning Plan (DP), construction drawings, and work plans. The licensee planned to request an extension to the temporary exemption to License Condition 25 for the staging of work-in-process (WIP) material if a license amendment is not received by the planned disposition site (Section 4).

Decommissioning Inspection Procedure for Materials Licensees

- Decommissioning was being conducted in a manner that was protective of workers' radiological health and safety. The licensee had established a radiation health and safety plan that was in compliance with license requirements (Section 5).

Management Organization and Controls

- The staffing level was adequate to maintain the plant in a shutdown condition with Phase I decommissioning ongoing and to ensure compliance with applicable regulations and license conditions (Section 6).
- Although Phase I decommissioning related activities were in progress, FMRI had not completed activities associated with the removal and off-site transportation of contaminated WIP materials from Ponds 2 and 3. FMRI was awaiting approval of a request for amendment from the State of Utah to authorize International Uranium Corporation (IUC) to accept the WIP material as alternate feed.
- FMRI did not submit the required information for Table 15-12 by March 31, 2006 and was in continued non-compliance since March 31, 2005 with this License Condition. This is considered a repeat violation of NOV040-07580/0501-01. Because the previous violation is still open and the repeat of this violation is of minor significance, no response is required. FMRI submitted a request for license amendment in response to this violation on March 31, 2006. This request was still under NRC review at the conclusion of the onsite inspection (Section 6).

Inspection of Transportation Activities

- The licensee had not shipped any radioactive material off site since the last inspection, but was preparing to ship currently staged WIP material to IUC following IUC's license amendment from the State of Utah (Section 7).

Followup

- FMRI responded by letters dated August 23, 2005, October 11, 2005, and March 13, 2006 responding to a Notice of Violation (NOV) issued by the NRC to FMRI on July 26, 2005, and to NRC letters dated September 12, 2005 and December 15, 2005. FMRI has continued to be in noncompliance with this license requirement since March 31, 2005, and again did not submit the updates to Table 15-12 by March 31, 2006. This is considered a repeat violation, with minor significance, with proposed corrective actions in place. Therefore, no response to this repeat violation is required. FMRI proposed to seek a modification to a portion of License Condition 45 by the submission of a license amendment request dated March 31, 2006. This request was still under NRC review at the end of the onsite inspection. This Violation remains open (Section 8).

Report Details

Summary of Site Status

Decommissioning of the FMRI site is expected to occur in four phases. Phase 1 consists of remediation and offsite disposal of residue material in Ponds 2 and 3. At the time of the inspection, the facility was conducting Phase I decommissioning activities. The work was being conducted in accordance with the NRC-approved DP dated January 14, 2003.

Residue WIP material was being excavated from Pond 3 and was being relocated to one of two temporary processing and packaging areas (TPPAs). The TPPAs, situated adjacent to Pond 3, were being used for material drying and processing operations. Once dried, the waste material was then bagged in 2-ton super-sacks and staged for future disposal or disposition at an offsite location. Prior to the onsite inspection (April 4, 2006), the licensee had excavated approximately 77-percent of the contents of Pond 3 and had bagged about 7500 tons of WIP material.

As part of Phase 1 decommissioning, the licensee plans to generate about 9,000-10,000 two-ton super-sacks of material. The licensee plans to begin shipping this material to an offsite location beginning in June 2006 following the approval of an IUC amendment plus 30-days of transportation preparation time. The material will be shipped by rail, and the licensee estimates that each railcar will hold roughly 50 bags (100 tons) of waste material.

Plant systems were in suspended operations mode, although the groundwater treatment system, waste water treatment plant, environmental monitoring systems, plant boilers, air compressors, and building utilities (electricity, heat, water) remained in service. All process systems had been drained of potentially radioactive material. Previously bagged impacted soil material from Pond 5 remained in storage in the former sodium reduction building. WIP drums All calcium fluoride (CaF₂) material in the plant was previously returned to Ponds 8 and 9 via the waste water treatment system. The licensee also continued to store 16 drums of solvent extraction material in Chem A building, material that had been previously removed from the solvent extraction process circuit.

1 Radiation Protection (83822)

1.1 Inspection Scope

The inspector examined the licensee's radiation protection program for compliance with 10 CFR Part 20 and license requirements.

1.2 Observations and Findings

a. Site Tour

Site tours were conducted to observe facility conditions and activities in progress. The tours included all buildings, ponds, and radioactive material storage areas. The site tours confirmed that all areas with radiological materials were properly secured and posted with "Caution, Radioactive Material" signs.

Radiological surveys were conducted using a Ludlum Model 19 (NRC No. 015518, calibration due date of 12/22/06) microRoentgen survey meter. The ambient exposure rates in most areas of the main plant were noted to be at background levels, which were noted to be approximately 10 $\mu\text{R/hr}$ in buildings and 30 - 40 $\mu\text{R/hr}$ in outdoor areas. The highest exposure rate in areas accessible to plant personnel was 250 $\mu\text{R/hr}$ near the temporary staging areas for WIP material. All exposure rate measurements were below the definition of a radiation area (5000 $\mu\text{R/hr}$).

Adequate protective clothing and contamination control practices were evident in the areas where work was being conducted. Water used at the boot wash station was pumped to the waste water treatment facility for processing.

Site security was provided by a contract security company and by site personnel during regular business hours. Access to the site was limited by locked gates and fences during non-business hours to prevent unauthorized access to the facility. The site perimeter fences and access gates were in good condition and properly posted, with the exception of the automatic front gate which had been recently hit by lightning. Repairs to the front gate of the facility were in process at the conclusion of the on-site inspection, and site personnel had increased oversight for site access. All radioactive material storage areas were secured and controlled within the site boundary in accordance with the requirements of 10 CFR 20.1801. As noted above, all radioactive material storage areas displayed proper radiological postings as required by 10 CFR 20.1902(e).

b. Occupational Exposures

The external exposure requirements are discussed in Section 10.4 of the DP. The licensee assigned thermoluminescent dosimeters to site workers. The inspector reviewed the occupational exposure records for 2005. During 2005, fourteen individuals were monitored for external exposures. During 2005 the highest external dose received by an FMRI employee was 12 millirems, and the highest dose to a contractor was 121 millirems, well below the regulatory limit of 5,000 millirems per calendar year.

The licensee monitored workers for internal exposures in accordance with License Condition 10 which references Section 3.5.1 of Part B to the license application. Internal occupational exposure assignments were based on portable air sample results. Lapel air samplers were assigned to selected workers to monitor breathing air. Fixed air samplers were located in strategic positions for general area monitoring, and to determine a need for additional personnel monitoring. The potential for internal personnel exposures was reduced by requiring personnel working in areas likely to have airborne contamination to wear full-face negative pressure respirators. One contractor wears a half-face negative pressure respirator because of prescription eyeglasses. The highest individual results for 2005 were 159 millirems total organ dose equivalent (50,000 millirem regulatory limit) and 122 millirems total effective dose equivalent (5,000 millirem regulatory limit).

The inspector reviewed the 2005 internal dose assignments for completeness. Occasionally, sample results exceeded the licensee's gross alpha action level. These occasional exceedances were documented in Condition Reports. Investigations of action level exceedances included determination of causes, followup radiological

surveys, and corrective actions to prevent recurrence. Doses were assigned to workers as necessary based on air sample results. At the time of the inspection, no sample result exceeded any regulatory limit.

c. Special Work Permits

In accordance with Section 3.2 of Part B to the license application, the licensee had a special work permit (SWP) program in place. The SWPs were used to describe specific or special worker protection requirements for activities involving radioactive material and not covered by a procedure. The completed SWPs for January 2005 to March 2006 were reviewed. The SWPs listed both radiological and non-radiological safety hazards, personnel protective equipment requirements, and monitoring requirements. The inspector concluded that the licensee had implemented the SWP program as required in the license application.

d. Radon Sampling

The license application, Part B, Section 3.5.4 specifies that radon sampling be conducted on a quarterly basis. Radon sampling was conducted at seven locations around the site. The sodium reduction building consistently exceeded the action level of 30 pCi/l because radioactive materials were being stored in this building. Sample results varied from 32.5 pCi/l during the third quarter of 2004 to 101.9 pCi/l for the second quarter of 2005. All other sample results at these seven locations were less than 5 pCi/l.

During the 3rd quarter 2005, the licensee added a radon sampler to the temporary processing and packaging area (TPPA) based on personnel air monitor results. The TPPA exceeded the action level of 30 pCi/l because WIP material removed from Pond 3 was stored in this area. The licensee issued a condition report on the TPPA, and added an additional eight monitoring locations during the 4th quarter 2005, including one for personnel working in Pond 3 and the TPPAs. The inspector reviewed the 4th quarter results for these additional eight locations were less than 5 pCi/l. The licensee planned to discontinue the use of additional monitors at the property fence line if results remained below 5 pCi/l, but will continue to monitor the TPPA and personnel working in the area. A total of ten locations will be monitored throughout Phase I remediation.

The licensee continued to post the sodium reduction building as an airborne radiation area, and a SWP was required for entry. The building continued to be controlled by lock and key by the licensee. The licensee also posted the TPPA and the Pond 3 areas as airborne radiation areas and an SWP was required for entry.

e. Radiation Protection Program Reviews

License application Section 2.1.2 (Part B) specifies that a radiation safety committee be established and meet at least quarterly. The inspector confirmed that the radiation safety committee met quarterly during 2005 to discuss relevant issues, including potential trends. A review of the content and implementation of the radiation protection program is required annually by 10 CFR 20.1101. The annual program review for 2005

was provided to the radiation safety committee during the March 2006 meeting. The program review included all program areas.

f. Contamination Control

The licensee had a contamination control program in place at the site that included routine bi-weekly swipe samples and surface surveys of plant areas for removable contamination. The inspector reviewed the biweekly swipe samples for January 2005 to March 16, 2006. FMRI was maintaining the surface contamination control program in compliance with Section 3.5.2 of the license application. The inspector noted that when the action levels were exceeded, decontamination was performed followed by a second survey of the area. Additional decontamination was not needed following a second survey.

Section 3.5.2 of the license application states that surface contamination surveys will be conducted prior to release of equipment from radiologically controlled areas. The licensee had a contamination control program in place at the site that included equipment release control. The inspector reviewed free release records for equipment and tools, and noted that no equipment was released above the action levels. The majority of licensee surveys indicated that equipment and tools were at or near background levels. The licensee was effectively monitoring personnel for contamination.

1.3 Conclusions

The licensee implemented a radiation protection program that met the requirements established in 10 CFR Part 20 and the license. Site tours confirmed that security and control of radioactive material were adequate. Occupational exposures were below regulatory limits, and contamination control efforts were effective.

2 Environmental Protection (88045)

2.1 Inspection Scope

The inspector reviewed the licensee's program to control, monitor, and quantify releases of radioactive material to the environment to determine if the program was effectively implemented per regulatory and license requirements.

2.2 Observations and Findings

The environmental and effluent monitoring program requirements are specified in Section 3.5.6 of Part B to the license application. The program consisted of liquid effluent monitoring, groundwater monitoring, and air sampling. The inspector examined the licensee's sample results for 2005 and portions of 2006 to determine if effluents were being maintained below regulatory limits.

Plant liquid effluents were discharged from Pond 6 to the Arkansas River through Outfall 001. All other outfalls were used solely for the discharge of storm water runoff. The liquids were released in batch modes. Water samples were collected during each

batch release. The fluid was sampled for gross alpha and beta concentrations. The gross alpha and beta action levels, 15 picocuries per liter and 50 picocuries per liter, respectively, were occasionally exceeded. If the action levels were exceeded, the licensee conducted a followup isotopic analysis of the sample for comparison to the individual reportability action levels. The inspector reviewed the release records for 2005. No sample result exceeded the licensed limit for reportability to the NRC. Further, no sample result exceeded the effluent concentration limits provided in Appendix B to 10 CFR Part 20.

Air particulate samples were collected at six locations; four perimeter stations, an offsite (environmental) station located at the north property boundary, and a background station located at the western edge of the property. The air particulate samples were exchanged weekly and analyzed for gross alpha activity. The sample results for January 2005 through March 8, 2006 were reviewed. No sample result exceeded the action level of $4.30E-14$ $\mu\text{Ci/ml}$ for gross alpha activity.

Groundwater monitoring consisted of sampling 19 wells and 4 sumps from the interceptor trench. The wells and sumps were sampled quarterly, and the samples were analyzed for gross alpha and beta concentrations. The wells were also sampled on a semi-annual basis for a number of chemical constituents in accordance with a state permit. The gross alpha and beta action levels were measured and compared to administrative action levels. If the action levels are exceeded, then the licensee was required to conduct an isotopic analysis of the sample. The sample results for January 2005 through March 8, 2006 were reviewed. The inspector concluded that the licensee collected the required number of groundwater samples and analyzed the samples for the correct radiological and chemical constituents. Selected sample results exceeded the 25 percent action level for uranium isotopes, and condition reports were issued for each exceedance. For the time interval reviewed, no sample result exceeded the respective 10 CFR Part 20, Appendix B, Table II release limit.

The inspector also reviewed groundwater monitoring results for four wells (MW-67, MW-72, MW-74, and MW-71) and Sump 2 downgradient of Pond 3. Only well MW-71 was down-gradient of Pond 3, but prior to the french drain surrounding Pond 3. Well MW-71 was dry during three quarters of 2005, and during the second quarter of 2005, gross alpha was below 12 pCi/l and gross beta was below 30 pCi/l. Sump 2 collects the water from the interceptor trench surrounding the site and the water is then treated at the waste water treatment plant. Although there were elevated levels of uranium-234 and uranium-238 (greater than 300 pCi/l) in well MW-67 in all samples taken in 2005, there were no elevated measurements in Sump 2.

2.3 Conclusions

The environmental and effluent monitoring programs were implemented in accordance with license requirements. All required samples were collected, and no sample result exceeded any regulatory or reporting limit.

3 Low-Level Radioactive Waste Storage (84900) and Radioactive Waste Management (88035)

3.1 Inspection Scope

The inspector interviewed licensee representatives, toured the radioactive waste storage areas, and reviewed applicable records to determine if the licensee had established and maintained an effective radioactive waste management program.

3.2 Observations and Findings

The requirements for temporary storage of licensed material are provided in Section 3.6 of Part B to the license application and License Condition 25. The inspector observed and toured the following onsite radioactive waste storage locations:

- There were approximately 180 55-gallon drums of contaminated concrete debris material stored at a temporary storage area located outdoors behind the thermite building. The containers were stored on pallets with a plastic cover and within a bermed concrete pad as required by License Condition 25. The plastic cover was replaced during November 2005 due to wind damage, but no additional damage was noted during this inspection. During the November 2-4, 2005 inspection, the inspector noted that at least two drums were experiencing degradation. The licensee repackaged these drums in late November 2005.
- The sodium reduction building was being used as a temporary storage area. The building housed approximately 15 55-gallon drums of WIP material containing uranium and precious metal material extracted from the process equipment when the facility shut down in 2001. The inspector noted that at least two drums at the entrance to the sodium reduction building were degraded and the material was spilled onto the floor of the building. At the conclusion of the inspection, the licensee was preparing a work package and SWP to inspect the drums in the sodium reduction building and repackage any drums showing degradation. In addition, the building housed super-sacks containing impacted soil remediated from Pond 5. The super-sacks were stored on pallets inside the building. Radiological surveys conducted by the inspector using the Ludlum Model 19 survey instrument noted that the exposure rate measurements of the entrances to the sodium reduction building ranged from 100 - 120 $\mu\text{R/hr}$.
- The storage yard behind the Chem C building was being used to store potentially radioactive trash and debris. This potentially contaminated scrap material was being segregated and surveyed. Material measuring greater than twice the background established by the licensee was being moved to an adjacent concrete pad area. Radiological surveys conducted by the inspector using the Ludlum Model 19 survey instrument noted that the exposure rate measurements of the storage yard ranged from 24 - 28 $\mu\text{R/hr}$.
- The licensee was collecting and storing trash from cleanup activities (personal protective equipment, gloves, respirator cartridges, etc.) in the Chem C building for eventual release or disposal.

- A stockpile of 6,700 tons of soil above the action level for soils (14.1 pCi/g uranium, 10.1 pCi/g thorium and 37 pCi/g actinium-228) was located next to the research and development building. This soil was removed during construction of the french drain system. The stockpile was covered with polyvinyl material and properly posted. Radiological surveys conducted by the inspector using the Ludlum Model 19 survey instrument noted that the exposure rate measurements of the soil stockpile material did not exceed twice background.
- The last area toured were the three temporary staging areas for WIP material in two-ton supersacks awaiting offsite disposal or disposition. As of April 4, 2006, the three lined staging area contained 3,660 two-ton supersacks covered in plastic sheeting. Additional supersacks were filled and staged during the inspection, but a final count was not received by the completion of the onsite inspection on April 12, 2006.

All areas were properly posted with caution radioactive material signs or airborne radioactive material areas. In summary, the licensee was storing the waste material in accordance with license requirements.

3.3 Conclusions

The licensee had effectively implemented the license requirements related to the management of radioactive waste. All radioactive material storage areas were protected and controlled with proper radiological posting/labeling as required.

4 **Onsite Construction (88001)**

4.1 Inspection Scope

The purpose of this portion of the inspection was to determine by direct observation if onsite construction was being accomplished in accordance with the license application, license conditions, and construction specifications.

4.2 Observations and Findings

By letters dated July 30, 2004 and June 22, 2005, the licensee submitted its Phase 1 decommissioning supplemental work plans to the NRC. The documents provided details of Phase 1 decommissioning activities. Further, the procedures to excavate the site soils and residues are provided in Section 8.3 of the DP. The inspector observed the work in progress to ensure that construction activities were being conducted in accordance with commitments made in the DP and the work plans. The inspection included site tours of the work areas, review of pertinent documents, and interviews with site personnel.

The licensee estimates that approximately 18,800 tons of residues will be excavated from Ponds 2 and 3, packaged in 2-ton super-sacks, and shipped offsite for reclamation at a licensed facility. At the time of the inspection, WIP material was being excavated from Pond 3. The excavated material was placed on the slope of Pond 3 to pre-dry the material by allowing excess water to drain from the material.

Following bulk draining and drying, the material was removed from Pond 3 and relocated to one of two TPPAs. These areas were being used to further dry and prepare the material for bagging. The two areas (TPPA-A and TPPA-B) totaled about 2,500 ft² in size and are structurally independent from each other. The TPPAs were constructed in a manner to promote dewatering and drying of the WIP material. There were no changes to the TPPAs since the last inspection.

Staging areas were used for temporary storage of the bagged material. The staging areas were located in the vicinity of the former ore storage pad. By letter dated October 7, 2005, the NRC informed the licensee that staging of bagged material was not subject to the storage requirements of License Condition 25 subject to expiration September 30, 2006. The licensee constructed three material staging areas, and used a 11-mil cover over any bagged material located in the staging area to protect it from the elements. Also, channels were installed in the staging areas to allow rainwater to drain from the areas. During the inspection, three staging areas had been constructed and were being used to temporarily store 3,660 filled super-sacks.

The licensee plans to request an extension to the temporary exemption to the storage requirement in License Condition 25 within 60 days prior to expiration pending a license amendment at IUC from the State of Utah, the planned disposition site. In this letter, the licensee plans to propose a date for a request for license amendment to modify License Condition 25 to include more permanent staging requirements awaiting a disposition or disposal site for the WIP material. These requirements for storage will be discussed with the supersack's manufacturer to avoid potential degradation of the supersacks by the elements.

4.3 Conclusions

The licensee had constructed the onsite material drying, staging, and processing areas in accordance with the DP, construction drawings, and work plans. The licensee planned to request an extension to the temporary exemption to License Condition 25 for the staging of WIP material if a license amendment is not received by the planned disposition site.

5 Decommissioning Inspection for Materials Licensees (87104)

5.1 Inspection Scope

The objective of this portion of the inspection was to determine if decommissioning activities were being conducted in a manner that was protective of the health and safety of workers and the general public.

5.2 Observations and Findings

During April 2005, the licensee selected A&M Engineering and Environmental Services, Inc. as the contractor that will conduct Phase 1 reclamation activities. The contractor began onsite mobilization of staffing and equipment. During June 2005, the licensee commenced with an air drying study to determine the optimal moisture content of the

Pond 3 material for handling, bagging, and transport operations. The study concluded that 32-percent by weight was the best moisture content.

The licensee commenced with Phase I decommissioning activities on June 22, 2005, when the contractor was granted authorization to commence with material removal from Pond 3. Material bagging commenced on October 21, 2005. Full scale bagging operations commenced on November 21, 2005. At the end of the inspection period, the licensee's schedule continued to show a Phase 1 completion date of December 31, 2006.

The requirements for radiation protection during decommissioning were provided, in part, within the licensee's Radiation Health and Safety Plan, referenced in License Condition 52. The inspector conducted a review of the licensee's proposed radiological health and safety program for handling the pond material. Based on characterization survey data collected in 1993, the average radiological contaminants ranged from 360 to 640 pCi/g of uranium-238 and 360 to 440 pCi/g of thorium-232 in Ponds 2 and 3. The radiological protection controls included use of general area air samplers, lapel air samplers, respirators, and protective clothing.

General area air samplers were installed to monitor excavation and bagging activities, activities that had the potential for creating wind-blown dust. Four air samplers were installed to monitor the work. The four samplers were located inside the bagging station, adjacent to Pond 3, inside the work zone between the TPPA and Pond 3, and south of Pond 3 in the tank farm area. Lapel air samplers were used daily, but the number issued depended on the number of people in the work zone. A review of recent air sample results indicated that some sample results were elevated; however, the workers were required to wear respirators while in this area. Internal doses were assigned to workers as appropriate.

During site tours, the inspector observed the work zone boundaries around both Ponds 2 and 3. Pond 2, located behind the Chem C building, was covered with approximately 16-24 inches of top soil but was exposed in one area. Access to both Ponds 2 and 3 were controlled by the licensee for personnel radiological protection. The inspector noted that the boundaries around both ponds were roped, marked, and posted on all sides. The inspector also observed the bagging process from loading of the bags at the bagging station, weighing the bags at the temporary staging area, and staging the bags in temporary staging area 3.

Potentially contaminated trash from the Pond 3 work zone was being collected and stored in Chem C building. The licensee plans to radiologically survey, segregate, and dispose of this trash at some point in the future.

5.3 Conclusions

Decommissioning was being conducted in a manner that was protective of workers' radiological health and safety. The licensee had established a radiation health and safety plan that was in compliance with license requirements.

6 Management Organization and Controls (88005)

6.1 Inspection Scope

The organizational structure was reviewed to determine whether management controls were in place to ensure compliance with license and regulatory requirements. The inspector interviewed licensee staff regarding the organizational structure, reviewed related documentation and license condition commitments.

6.2 Observations and Findings

Figure 9-1, "Decommissioning Management Organization," of the DP provided the organizational chart that depicted job functions needed to support decommissioning activities. The inspector compared the onsite organization to the structure provided in Figure 9-1. At the time of the inspection, there were five full-time FMRI employees, one part-time FMRI employee, one contract security worker, and ten to twelve contract personnel for Phase I remediation activities. FMRI had also contracted with Penn E&R and Omega for quality control activities. The current staffing level was determined to be adequate to maintain compliance with regulatory and license requirements while the plant remained shut down, and Phase I remediation was in progress.

Although Phase I decommissioning related activities were in progress, FMRI had not completed activities associated with the removal and off-site transportation of contaminated WIP materials from Ponds 2 and 3. FMRI was awaiting the approval of a license amendment request from the State of Utah for IUC prior to off-site shipment and disposal of the staged WIP material. FMRI plans to conduct a preoperational test shipment once the amendment is received, and will contact NRC with the proposed dates prior to this limited shipment of WIP. At the time of the inspection, FMRI planned to ship one to two rail cars as a test shipment prior to full-scale off-site shipment and disposal activities.

License Conditions 43 - 45 and 47 required the submittal of annual financial reporting. License Condition 45, states in part, that FMRI shall submit updated versions of Tables 15-11 and 15-12, showing actual figures for previous periods and updated projections using current information by March 31st of each year. Although FMRI submitted a letter dated March 31, 2006 which included Table 15-11 showing expenditures and figures for previous periods, the licensee did not include Table 15-12 which should have provided updated projected income for the licensee's parent company, Fansteel, using current information.

In the licensee's letter dated March 31, 2006, the licensee referred to correspondence between FMRI and NRC, as well as the management meetings related to NOV 040-07580/0501-01. This March 31, 2006 letter also referred to a separate letter also dated March 31, 2006 requesting a license amendment to License Condition 45 to assure that this license condition is not violated in the future. The failure to provide the required financial information was identified as a repeat violation of minor significance to License Condition 45 (NOV 040-07580/0501-01).

6.3 Conclusions

The staffing level was adequate to maintain the plant in a shutdown condition with Phase I decommissioning ongoing and to ensure compliance with applicable regulations and license conditions.

Although Phase I decommissioning related activities were in progress, FMRI had not completed activities associated with the removal and off-site transportation of contaminated WIP materials from Ponds 2 and 3. FMRI was awaiting approval of a request for amendment from the State of Utah to authorize IUC to accept the WIP material as alternate feed.

FMRI did not submit the required information for Table 15-12 by March 31, 2006 and was in continued non-compliance since March 31, 2005 with this License Condition. This is considered a repeat violation of NOV040-07580/0501-01. Because the previous violation is still open and the repeat of this violation is of minor significance, no response is required. FMRI submitted a request for license amendment in response to this violation on March 31, 2006. This request was still under NRC review at the conclusion of the onsite inspection.

7 Inspection of Transportation Activities (86740)

7.1 Inspection Scope

The inspector reviewed the licensee's program for the shipment and transportation of potentially radioactive material.

7.2 Observations and Findings

Raw material and product sampling requirements are provided in Section 3.5.11 of the license application. There were no off site shipments of radioactive material since the last inspection. The movement of WIP material was limited to on-site activities. The licensee had secured a contractor, A&M Engineering, to perform transportation activities for the offsite disposition of WIP material to IUC. At the time of the inspection, A&M Engineering was also performing the WIP bagging and was planning to subcontract the transportation activities once the IUC amendment was approved. The licensee expects a 30-day delay of transportation of WIP material to perform one to two test shipments prior to full-scale off-site shipment once the IUC amendment is approved.

7.3 Conclusions

The licensee had not shipped any radioactive material off site since the last inspection, but was preparing to ship currently staged WIP material to IUC following IUC's license amendment from the State of Utah.

8 Followup (92701)

(Discussed) Violation 040-07580/0501-01: Failure to Submit Financial Information to NRC as Stipulated by License Condition 45

The inspector discussed NOV040-07580/0501-01 with the licensee regarding a failure to provide an updated version of Table 15-12 by the deadline provided in the license. License Condition 45 states, in part, that FMRI shall submit updated versions of Tables 15-11 and 15-12, showing actual figures for previous periods and updated projections using current information. Although FMRI submitted a letter dated March 30, 2005 that included Table 15-11 showing expenditures and figures for previous periods, the licensee failed to include Table 15-12 which should provide a projected income using current information from Fansteel. The failure to provide the required financial information was identified as a violation of License Condition 45.

FMRI responded by letters dated August 23, 2005, October 11, 2005, and March 13, 2006 responding to a Notice of Violation (NOV) issued by the NRC to FMRI on July 26, 2005, and to NRC letters dated September 12, 2005 and December 15, 2005. FMRI has continued to be in noncompliance with this license requirement since March 31, 2005, and again did not submit the updates to Table 15-12 by March 31, 2006. This is considered a repeat violation with proposed corrective actions in place and therefore no response to this repeat violation is required.

In order to discuss this violation and FMRI's corrective actions, the NRC held a management meeting with FMRI on February 15, 2006. As a result of this meeting, and as stated in your March 13, 2006, letter, FMRI proposed additional corrective actions to achieve compliance with License SMB-911 and to prevent the recurrence of such violation. FMRI proposed to seek a modification to a portion of License Condition 45 by the submission of a license amendment request to the NRC within 30 days of the March 13, 2006, letter. The request for a license amendment to License Condition 45 was requested by letter dated March 31, 2006. This request was still under NRC review at the end of the onsite inspection. This Violation remains open.

9 Exit Meeting Summary

The inspector reviewed the scope and preliminary findings of the inspection during an exit meeting conducted at the conclusion of the onsite inspection on April 12, 2006. A final telephonic exit was conducted with you on May 5, 2006. The licensee did not identify any documents as proprietary or any other information provided to, or reviewed by, the inspector.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

FMRI

Jonathan Jackson, President FMRI
Keyton Payne, Radiation Safety Officer and Plant Safety Director
James Burgess, Plant Operations Manager
George Daniels, Radiation Technician
Marty Ausen, Technician

Contractor (A&M Engineering and Environmental Services, Inc.)

Dan Baker, Site Construction Supervisor and Health Physics Supervisor

Contractor (Civil & Environmental Consultants, Inc.)

Andrew J. Lombardo, Certified Health Physicist

INSPECTION PROCEDURES USED

IP 83822	Radiation Protection
IP 88045	Environmental Protection
IP 84900	Low-Level Radioactive Waste Storage
IP 88035	Radioactive Waste Management
IP 88001	Onsite Construction
IP 87104	Decommissioning Inspection Procedure for Materials Licensees
IP 88005	Management Organization and Controls
IP 86740	Inspection of Transportation Activities
IP 92701	Followup

ITEMS OPENED, CLOSED AND DISCUSSED

Opened

None.

Closed

None.

Discussed

040-07580/0501-01 NOV	Failure to Submit Financial Information to NRC as Stipulated by License Condition 45
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LIST OF ACRONYMS USED

CaF ₂	calcium fluoride
CFR	Code of Federal Regulation
DP	Decommissioning Plan
ft ²	square feet
IP	Inspection Procedure
IUC	International Uranium Corporation
μR/hr	microRoentgens per hour
NOV	Notice of Violation
NRC	Nuclear Regulatory Commission
pCi/g	picocuries per gram
pCi/L	picocuries per liter
SWP	special work permits
TPPA	temporary processing and packaging area
WIP	work-in-process