



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION IV  
612 EAST LAMAR BLVD, SUITE 400  
ARLINGTON, TEXAS 76011-4125

August 4, 2011

Larry L. Teahon  
Manager, Safety, Health,  
Environment and Quality  
Crow Butte Resources, Inc.  
86 Crow Butte Road  
Post Office Box 169  
Crawford, Nebraska 69339-0169

SUBJECT: NRC INSPECTION REPORT 040-08943/11-001

Dear Mr. Teahon:

This refers to the announced, routine inspection conducted on June 20-24, 2011, at the Crow Butte Resources facility in Crawford, Nebraska. The inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and the conditions of your license. Within these areas, the inspection consisted of selected examinations of procedures and representative records, observations of activities, and interviews with personnel. The preliminary inspection findings were discussed with you at the exit briefing conducted at the conclusion of the onsite inspection, and the final inspection findings were presented to you by telephone on July 8, 2011. No violations were identified, and no response to this letter is required.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response, if you choose to make one, 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's 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. Linda M. Gersey, Health Physicist, at (817) 860-8299, or the undersigned at (817) 860-8191.

Sincerely,

*/RA/*

D. Blair Spitzberg, Ph.D., Chief  
Repository and Spent Fuel Safety Branch  
Division of Nuclear Materials Safety

Docket: 040-08943  
License: SUA-1534

Enclosure:

NRC Inspection Report 040-08943/11-001

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U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket: 040-08943

License: SUA-1534

Report: 040-08943/11-001

Licensee: Crow Butte Resources, Inc.

Facility: Crow Butte Facility

Location: Dawes County, Nebraska

Dates: June 20-24, 2011

Lead Inspector: Linda M. Gersey, Health Physicist  
Repository and Spent Fuel Safety Branch  
Division of Nuclear Materials Safety

Accompanied by: Thomas R. Lancaster, CPG, Hydrogeologist  
Uranium Recovery Licensing Branch  
Decommissioning and Uranium Recovery Licensing Directorate  
Division of Waste Management and Environmental Protection  
Office of Federal and State Materials and Environmental  
Management Programs

D. Blair Spitzberg, Ph.D., Chief,  
Repository and Spent Fuel Safety Branch  
Division of Nuclear Materials Safety

Approved by: D. Blair Spitzberg, Ph.D., Chief  
Repository and Spent Fuel Safety Branch  
Division of Nuclear Materials Safety

Attachment: Supplemental Inspection Information

ENCLOSURE

## EXECUTIVE SUMMARY

Crow Butte Resources, Inc.  
NRC Inspection Report 040-08943/11-001

This inspection included a review of site status, management organization and controls, site tours, radiation protection, environmental protection, effluent controls, transportation, radioactive waste management activities, and emergency preparedness. In summary, the licensee was conducting operations in accordance with regulatory and license requirements.

### Management Organization and Controls

- The organizational structure and staffing levels were sufficient for the work in progress at the facility (Section 1).
- The licensee's Safety and Environmental Review Panel evaluations reviewed by the inspectors were conducted in accordance with requirements of the performance-based license (Section 1).
- The licensee was conducting audits and walk-throughs as required by the license (Section 1).

### In-Situ Leach Facilities

- Site operations were being conducted in accordance with applicable license conditions and regulatory requirements (Section 2).
- The licensee was in the process of installing a second yellowcake dryer (Section 2).
- The licensee had identified a tear in the Pond 1 liner and was in the process of repairing it (Section 2).

### Radiation Protection

- The licensee implemented a radiation protection program that met the requirements of 10 CFR Part 20 and the license (Section 3).
- A violation identified during a previous inspection was closed related to the failure of the licensee to have one health physics technician that met the training requirements in License Condition 9.12 (Section 3)
- A violation identified during a previous inspection was closed pertaining to dose records that were required by 10 CFR Part 20 which were not complete and accurate as required by 10 CFR 40.9(a) (Section 3).

Effluent Control and Environmental Protection and Maintaining Effluents from Materials Facilities As Low As Reasonably Achievable

- The licensee conducted environmental monitoring in accordance with license requirements. Effluents were below the regulatory limits specified in 10 CFR Parts 20 and 40 (Section 4a).
- The annual dose to members of the public was below regulatory limits (Section 4a).
- Mechanical integrity testing of wells was being conducted in accordance with approved procedures (Section 4b).

Inspection of Transportation Activities and Radioactive Waste Management

- The licensee was conducting radioactive waste disposal operations in accordance with license and regulatory requirements (Section 5).
- The licensee was conducting yellowcake shipments in accordance with U.S. Department of Transportation and NRC requirements (Section 5).

Emergency Preparedness

- The licensee was maintaining an emergency preparedness program which met license requirements (Section 6).
- Emergency training and scenario exercises for emergencies were being conducted as required (Section 6).

## Report Details

### Site Status

The Crow Butte Resources, Inc. facility started commercial operations in April 1991. At the time of the inspection, the licensee continued to recover uranium through in-situ recovery operations. Uranium processing and drying operations were in progress at the Central Processing Plant (CPP). Restoration of groundwater in mined well field units continued to be performed via reverse osmosis in the Restoration Building. The current operational status of the mine units is as follows:

- Groundwater in Mine Unit 1 has been restored and wells and wellhouses were decommissioned
- Mine Units 2, 3, 4, 5, and 6 were undergoing groundwater restoration
- Mine Units 7, 8, 9, 10, and 11 were in production

The operating flow observed at the time of the inspection was 6,760 gallons per minute. The amount of CPP process waste effluent sent to the facility ponds was reduced over the past year through increased facility efficiencies (e.g., addition of micron filters). These efficiencies resulted in the reduction of the use of the facility ponds' working capacity (i.e., 36,700 gallons) from approximately 95 percent to approximately 55 percent over the past year. As observed in the previous inspection, three small ion-exchange columns were added to the CPP. The columns continue to be used to treat pond water for uranium before being disposed of in the licensee's deep disposal well. Also, the licensee is in the process of installing a second yellowcake dryer. Installation is expected to be completed in August 2011.

NRC staff is continuing its review of the license renewal application and the North Trend expansion amendment. Hearing requests were submitted and subsequently granted for both of these licensing actions. In August 2010, the licensee submitted an application for a satellite operation at the Three Crow site located south of Crawford, Nebraska. In April 2011, the licensee requested NRC staff to suspend the review of this licensing action so that they could supplement their application with operational process changes. The licensee stated they were also performing exploration drilling at another potential satellite identified as the Marsland site, which is approximately 30 miles southeast of the current facility. Based on estimates made by the licensee, the application for this site will be submitted to the NRC during 2012. The licensee commented that meteorological towers will be installed at both the Three Crow and Marsland sites to derive relevant wind information for licensing decisions.

## **1 Management Organization and Controls (88005)**

### 1.1 Inspection Scope

Determine if the licensee had established an organization to administer both the technical programs and the programs that are necessary to perform internal reviews, self-assessments, and audits.

## 1.2 Observations and Findings

The licensee's corporate organizational structure is illustrated in Figure 5.1-1 of the license application. At the time of the inspection, the licensee had 66 full time employees. The licensee also employed contractors for all drilling operations and other work, as needed. Since the previous inspection, there has been a turnover of five employees, mostly from maintenance and operations staff. The licensee was in the process of training a new health physics technician (HPT) who was formerly a plant operator for the licensee. The inspectors concluded that the licensee had sufficient staff to implement the conditions of the license and current operations.

License Condition (LC) 9.4 of the performance-based license requires, in part, that the licensee establish a Safety and Environmental Review Panel (SERP) to evaluate if program changes require an NRC license amendment prior to implementation. The inspectors reviewed seven SERP evaluations that were performed by the licensee since the last inspection (SERPs 10-08 to 10-10 and 11-01 to 11-04). The SERPs included a technical review involving the approval of the operation of Well Field 11, Well Houses 54, 55, and 61, and Well 3945 in Well House 40. Additionally, the technical review in the SERPs included the replacement of unusable baseline restoration Well BL-5 with Well P-224 and the replacement of the unusable baseline restoration Well CM-9 with Well P-456.

The licensee had also approved a change in organizational structure in which radiation safety and regulatory affairs reports directly to the general manager. Prior to the change, radiation safety reported to the manager of Safety, Health, Environment, and Quality. The inspectors concluded that the evaluations were technically adequate, provided sufficient detail to support the proposed changes, and the changes resulting from the SERP recommendations did not negatively impact the licensing basis of the site.

License Condition 9.12 and License Application Section 5.4.4 require an Annual "As Low As Reasonably Achievable" (ALARA) program review. The licensee stated that the annual ALARA audit for 2010 licensed activities was in the process of being finalized, but was not ready for inspector review. The inspectors will review the audit findings for 2010 during the next inspection.

The inspectors reviewed the audits and inspections being generated by the licensee in accordance with LC 9.12 and NRC Regulatory Guide (RG) 8.31, "Information Relevant to Ensuring that Occupational Radiation Exposure at Uranium Recovery Facilities will be ALARA." The licensee was conducting and documenting a daily walk-through of all work and storage areas of the facility to ensure good radiation practices were being followed. The Radiation Safety Officer (RSO), or appropriate alternate when the RSO was not available, was performing a weekly inspection of all facility areas to observe general radiation control practices and review required changes in procedures and equipment. Also, the RSO was generating a monthly report that summarized the results of the daily and weekly inspections and monitoring and radiation exposure data. The inspectors found that the audits and inspections met requirements contained in the license.

### 1.3 Conclusions

The organizational structure and staffing levels were sufficient for the work in progress at the facility. The licensee's SERP evaluations reviewed by the inspectors were conducted in accordance with requirements of the performance-based license. The licensee was conducting audits and walk-throughs as required by the license.

## **2 In-Situ Leach Facilities (89001)**

### 2.1 Inspection Scope

Determine if in-situ leach operations were being conducted in accordance with regulatory and license requirements.

### 2.2 Observations and Findings

Site tours were conducted to observe in-situ recovery operations in progress. Areas toured included the CPP, restoration building, selected wellfields, selected header houses, and the evaporation ponds. The inspectors observed the condition of plant equipment, fences, postings, and gates. Plant operating parameters (flow, pressure) were compared to licensed limits. The six new pressurized downflow columns in the CPP appeared to be functioning as designed. The inspectors also viewed the three new small ion-exchange columns that were added to the CPP since the previous inspection. The three new ion-exchange columns were being used to treat pond water for uranium. In summary, operations appeared to be conducted in accordance with license requirements and established procedures.

During the inspection, dryer operations were suspended while a second dryer was being installed. The second dryer is similar to the existing dryer and will be used alternately to dry yellowcake. The licensee anticipates installation to be complete the second week of August 2011. The inspectors will review the new dryer during the next inspection to ensure compliance with license requirements.

The inspectors observed the three commercial ponds (Ponds 1, 3, and 4) to assess the condition of the pond liners, condition of the side slopes, and the manner in which the ponds were being operated. Although the licensee is authorized to construct a total of five ponds, Ponds 2 and 5 were never constructed. The inspectors observed that the licensee was maintaining the proper amount of freeboard on the respective ponds. The area near the potential primary liner breach in Pond 1, as discussed below, was also viewed by the inspectors.

License Condition 11.4 and license application Section 5.8.8.3 specify, in part, that the licensee must perform and document inspections of its onsite evaporation ponds. The most recent annual pond inspection report provided by the licensee was submitted to the NRC by letter dated November 10, 2010. The inspection of the licensee's onsite evaporation pond was conducted by a third-party engineer who stamped and signed the report. The engineer's report indicated that the ponds are operating within the constraints of the engineering design.

The licensee submitted correspondence to the NRC dated July 9, 2010, April 7, 2011, and June 1, 2011, which indicated that a primary liner leak potentially existed in Ponds 1 and 3. This correspondence provided analytical data, monitoring results, mitigative actions, and the results of those actions as required by License Condition 11.4. The water in Ponds 1 and 3 was lowered and the location of the tear was identified in Pond 1. Inspection of the primary liner of Pond 3 by facility staff and pond data indicated that the potential leak in the primary liner did not occur. At the time of the inspection, the licensee was still working on repairs of Pond 1. Water sampling results from nearby monitoring wells showed that no pond water was leaking into the surrounding groundwater.

### 2.3 Conclusions

Site operations were being conducted in accordance with applicable license conditions and regulatory requirements. The licensee was in the process of installing a second yellowcake dryer. The licensee had identified a tear in the Pond 1 liner and was in the process of repairing it.

## **3 Radiation Protection (83822)**

### 3.1 Inspection Scope

Determine if the licensee's radiation protection program was in compliance with the license and 10 CFR Part 20 requirements.

### 3.2 Observations and Findings

The licensee's occupational dose monitoring program was reviewed to ensure that no worker had exceeded the occupational dose limits specified in 10 CFR 20.1201. In calendar year (CY) 2010, 57 employees were monitored for occupational exposure. The licensee's exposure records for 2010 through the first quarter 2011 were reviewed by the inspectors. Occupational doses are based on a summation of airborne uranium, radon progeny, and optical stimulated luminescence dosimetry reported doses. Urine bioassays are taken to ensure that the respiratory protection program and engineering controls for airborne uranium are being utilized appropriately. The licensee submits bioassays to an outside analytical laboratory for analysis on a monthly basis for the yellowcake dryer operators and quarterly for plant operators and others in the bioassay program. No bioassay results were found to be greater than the action level of 15 micrograms per liter of urine.

The occupational exposure records indicated that the highest total effective dose equivalent for CY 2010 was 713 millirems. The highest total effective dose equivalent from January through May 2011 was 485 millirems. The weekly uranium intake was also being monitored to satisfy 10 CFR 20.1201(e) chemical toxicity requirements. All exposures remained below both the annual limit of 5,000 millirems as specified in 10 CFR 20.1201(a) and the 10 milligrams in a week chemical toxicity limit specified in 10 CFR 20.1201(e).

One violation (VIO 040-08943/1001-01) was identified during the previous inspection, related to the licensee's use of erroneous time factors used when calculating occupational dose from radon progeny. The licensee inadvertently deleted several

modified Kusnetz time factors from a spreadsheet, which resulted in incorrect radon progeny exposure results for hundreds of samples. The licensee had hired a contractor to correct the occupational dose records. Initially, the licensee thought that the spreadsheet error had occurred beginning in 2007, but later determined that the error occurred in 2008. The contractor corrected a total of 150 dose records. The maximum change in occupational dose after the records were corrected resulted in an additional 3 millirem to several employees in one CY. Corrections were made to all employee exposure summaries that were affected by the errors and the licensee stated that the corrected annual reports for 2008 and 2009 will be distributed with the 2010 annual exposure reports. For corrective actions, the licensee locked the time factors in the spreadsheet so they cannot inadvertently be deleted, and a periodic verification of all electronic worksheets will be performed to ensure the calculations are correct. The inspectors will continue to review the results of the periodic verifications during future inspections. The inspectors found the corrective actions to be adequate and this violation is closed.

Since the previous inspection, one fetal monitor was assigned to a declared pregnant woman. The total effective dose equivalent assigned to the fetus was 52 millirem. The fetal exposure remained below the limit of 500 millirems as specified in 10 CFR 20.1208(a).

In addition to occupational exposure records, the inspectors reviewed selected records from July 2010 through June 17, 2011, for in-plant radiological surveys, material release surveys, solid waste surveys, radiation work permits, and instrument calibrations. Based on these records, it appears that all program areas met regulatory and license requirements.

In November 2010, the licensee hired a contractor to perform an airflow study in the CPP as a result of recent changes to the building's ventilation system and the expansion of the building to house the equipment for the pond water treatment. The licensee had also found transient elevated radon progeny levels shortly after the pond water treatment equipment was put into service. The results of the airflow study indicated that the current locations where air samples were being taken for uranium particulates and radon progeny were good choices. Some areas did have stagnant air, although these areas were not high traffic areas. The licensee added additional venting and fans in the stagnant areas to increase air flow.

The inspectors reviewed the training records for two new employees and annual refresher for all employees. The annual radiation safety refresher training was conducted during May 2011 for 97 employees and contractors. The training included review of the NRC license and State permits, emergency response, spill prevention, radiation safety, and radiation work permits. Each employee and contractor took and passed a written exam to demonstrate their understanding of the training. The inspectors found that the initial and refresher training programs met the requirements of the license and 10 CFR Part 19.

During the previous inspection, one violation (VIO 040-08943/1001-02) was identified pertaining to the failure of the licensee to have one health physics technician (HPT) that satisfied the training requirements specified in RG 8.31, "Information Relevant to Ensuring that Occupational Radiation Exposure at Uranium Recovery Facilities will be As Low As Reasonably Achievable." The RG 8.31, Section 2.4.2(2), specifies that a

minimum of one HPT will have a total of 3 months (12 weeks) of specialized training (up to one month of on-the-job training may be counted) in radiation health protection relevant to uranium recovery facilities. Neither HPT had a total of 12 weeks of specialized training. This was a violation of LC 9.12, which states that the licensee shall follow the guidance in RG 8.31. The inspectors reviewed the documentation for six additional specialized training courses completed since the previous inspection by one HPT to fulfill the training requirement. The inspectors found the corrective actions to be adequate and this violation is closed.

During site tours, the inspectors performed independent radiological surveys using two NRC-issued survey meters, a Ludlum Model 19 microRoentgen meter (NRC 015546, calibration due date February 21, 2012, calibrated with radium-226) and a Ludlum Model 2401-EC2, calibration due date of January 3, 2012. The background was approximately 15 microRoentgens per hour ( $\mu\text{R/hr}$ ) in the unrestricted areas. The inspectors noted the highest gamma readings were up to 5000  $\mu\text{R/hr}$  near the reverse osmosis units in the restoration building. This area was posted as a radiation area and had restricted entry. The inspectors did not measure any areas greater than 5000  $\mu\text{R/hr}$  which the licensee had not previously identified and posted as radiation areas. The inspectors determined that the licensee was identifying and posting radiation areas as required in 10 CFR 20.1902.

### 3.3 Conclusions

The licensee implemented a radiation protection program that met the requirements of 10 CFR Part 20 and the license. A violation identified during a previous inspection was closed related to the failure of the licensee to have one health physics technician that met the training requirements in LC 9.12. A second violation identified during a previous inspection was closed pertaining to dose records that were required by 10 CFR Part 20 not being complete and accurate as required by 10 CFR 40.9(a).

## **4 Effluent Control and Environmental Protection and Maintaining Effluents from Materials Facilities ALARA (88045, 87102)**

### 4.1 Inspection Scope

Determine if the environmental and effluent monitoring programs were effective to monitor the impacts of site activities on the local environment.

### 4.2 Observations and Findings

#### a. Environmental Monitoring

The effluent and environmental monitoring program requirements are specified in LC 11.3, and the reporting requirements are specified in LC 12.1. The two Semi-annual Radiological Effluent and Environmental Monitoring Reports (semiannual reports) for CY 2010 were reviewed during the inspection. The semiannual reports were submitted to the NRC in a timely manner and provided relevant data for the facility.

The environmental monitoring program consisted of air particulate, radon, surface water, sediment, and ambient gamma exposure rate sampling. The licensee has seven monitoring stations at various locations around the licensed property, including one background station.

The seven monitoring stations were used to measure natural uranium, radium-226, and lead-210 concentrations in air. Radon-222 was also measured using track-etch detectors. The sample results reported by the licensee were less than the respective effluent concentration limits specified in 10 CFR Part 20, Appendix B, Table 2, for air releases. The sample results of the perimeter stations were similar to the background station sample results.

The licensee measured ambient gamma radiation levels at the seven sample stations using dosimeters that were exchanged quarterly. The annual ambient gamma radiation levels ranged from 28-39 millirem and were comparable to a background level of 40 millirem. The background radiation level was taken in the office area.

Surface water was collected quarterly from streams and water impoundments in the wellfield areas. The licensee collected water samples from five streams (unless they were dry) and three impoundments during 2010. The samples were analyzed for natural uranium and radium-226 concentrations. The sample results were less than the effluent concentration limits specified in 10 CFR Part 20 for water.

Stream sediment samples were also collected annually at the eight locations where surface water samples were collected. The samples were analyzed for natural uranium radium-226, and lead-210 concentrations. No specific limit has been established for sediment samples, but the data is used by the licensee for trending purposes.

The 2010 semiannual reports also contained water supply well data. Water supply wells located within 1 kilometer of the wellfields were sampled quarterly. A total of 19 wells were sampled in 2010. Results presented in the semiannual reports are consistent with previously collected data.

The licensee's evaluation of the annual dose to the public was submitted with the semiannual report for the third and fourth quarters of 2010. The licensee showed compliance by demonstrating that the annual average concentrations of radioactive effluents released at the restricted area boundary did not exceed the values in Table 2 of Appendix B to 10 CFR Part 20 and that the external dose to an individual continuously present in an unrestricted area would not exceed 2 millirem in an hour and 50 millirem in a year. The licensee showed that the dose to the public from operations was 2.69 millirem for CY 2010, which is under the 100 millirem per year dose limit specified by 10 CFR 20.1301.

b. Wellfield and Excursion Monitoring

License Condition 11.2 specifies, in part, the monitoring well sampling requirements and the criteria for placing a well on excursion status. The licensee's groundwater sampling program requirements include biweekly monitoring of well sampling in active mine units, weekly sampling of wells in excursion status, and lower-frequency well sampling in mine units under restoration. The inspectors reviewed groundwater sampling records from June 2010 to July 2011 to determine whether the licensee was

collecting samples at the required frequency and whether excursions were properly identified. The inspectors selected monitoring data at random and examined the reports to confirm the licensee's automated excursion reporting system was functioning properly. Data from known excursions was also reviewed to ensure that the monitoring frequency had been increased according to LC 11.2 requirements. The inspectors concluded that the licensee was implementing the groundwater monitoring program in accordance with the license.

The inspectors reviewed the spill records for the past 12 months. According to the licensee's records, eight spills occurred resulting in a total of 1,952 gallons of unrecovered fluids. Of the total unrecovered volume, 1,775 gallons was production fluid. The licensee indicated that no human-error spills occurred since the beginning of 2010.

The inspectors reviewed recent mechanical integrity test (MIT) documentation to determine whether test results were being appropriately reported and that tests were being properly performed. The inspectors observed a MIT at Well I-1083 and verified that the test was performed in accordance with test procedures outlined in Standard Operating Procedure P-23 of the facility's operating manual. The inspectors determined that the licensee was properly performing and documenting the MITs.

#### 4.3 Conclusions

The licensee conducted environmental monitoring in accordance with license requirements. The annual dose to members of the public was below regulatory limits. Mechanical integrity testing of wells was being conducted in accordance with approved procedures.

### **5 Inspection of Transportation Activities and Radioactive Waste Management (86740, 88035)**

#### 5.1 Inspection Scope

Determine whether transportation and radioactive waste disposal activities were being conducted in compliance with license requirements.

#### 5.2 Observations and Findings

License Condition 9.7 specifies, in part, that the licensee dispose of 11e.(2) byproduct material at a site licensed to receive such material. The licensee's waste disposal agreement with a licensed facility was valid through June 30, 2015. The licensee had made four byproduct waste shipments since the previous inspection. The inspectors reviewed the waste disposal shipments and found them to be in compliance with U.S. Department of Transportation and NRC requirements.

The licensee maintained records of 16 yellowcake shipments that occurred between July 2010 and June 17, 2011. The shipping papers were compared to the requirements of 49 CFR 172, Subpart C. All required information was presented on the shipping papers.

### 5.3 Conclusions

The licensee was conducting waste disposal operations in accordance with license and regulatory requirements. The licensee was conducting yellowcake shipments in accordance with DOT and NRC requirements.

## **6 Emergency Preparedness (88050)**

### 6.1 Inspection Scope

Determine whether the licensee's emergency preparedness program was being maintained in a state of readiness.

### 6.2 Observations and Findings

The licensee maintains emergency procedures in Volume VIII of the Procedure Manual. The medical emergency response procedures include the ability to use Flight for Life to evacuate an employee with a serious injury and how to handle contaminated injured personnel. The licensee also has one certified emergency medical technician on site. Other procedures include how to respond to fires and explosions, chemical emergencies, natural disasters, security threats, radiological emergencies, transportation emergencies, and evacuations. Spills of radiological material were also in this manual and the reporting requirements were adequately identified.

During the inspection, the inspectors questioned several employees as to how they would respond to certain emergencies. The inspectors found the answers to be complete and consistent. Training for emergency preparedness met license requirements.

In October 2010, the licensee hired a contractor to perform a table-top emergency exercise and a full scale exercise to evaluate the licensee's response plans and capabilities. Both exercises were successful and strengths and weaknesses were identified.

### 6.3 Conclusions

The licensee was maintaining an emergency preparedness program which met license requirements. Emergency training and scenario exercises for emergencies were being conducted as required.

### **Exit Meeting Summary**

The inspectors presented the preliminary inspection results to the licensee's representatives at the conclusion of the onsite inspection on June 23, 2011. A final exit briefing was conducted by telephone with the licensee on July 8, 2011. Representatives of the licensee acknowledged the findings as presented. During the inspection, the licensee did not identify any information reviewed by the inspectors as proprietary.

## **SUPPLEMENTAL INSPECTION INFORMATION**

### **Partial List of Persons Contacted**

#### Licensee

R. Grantham, Radiation Safety Officer  
J. Stokey, Mine Manager  
L. Teahon, Manager, Health Safety and Environmental Affairs  
D. Paulick, Operations Manager  
W. Beins, Senior Geologist

### **Items Opened, Closed, and Discussed**

#### Open

None

#### Closed

040-08943/1001-01	VIO	Failure to maintain complete and accurate occupational dose records
040-08943/1001-02	VIO	Failure to have one health physics technician that met the training as required by License Condition 9.12

#### Discussed

None

### **Inspection Procedures Used**

IP 88005	Management Organization and Controls
IP 89001	In-Situ Leach Facilities
IP 83822	Radiation Protection
IP 88045	Effluent Control and Environmental Protection
IP 87102	Maintaining Effluents from Materials Facilities ALARA
IP 86740	Inspection of Transportation Activities
IP 88035	Radioactive Waste Management
IP 88050	Emergency Preparedness

### List of Acronyms Used

ALARA	As Low As Reasonably Achievable
CY	Calendar Year
CFR	Code of Federal Regulations
CPP	Central Processing Plant
DOT	U.S. Department of Transportation
HPT	health physics technician
IP	Inspection Procedure
LC	License Condition
MIT	mechanical integrity test
NRC	Nuclear Regulatory Commission
RG	NRC Regulatory Guide
RSO	Radiation Safety Officer
SERP	Safety and Environmental Review Panel
$\mu\text{R/hr}$	microRoentgen per hour
VIO	violation