



UNITED STATES
NUCLEAR REGULATORY COMMISSION

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

August 20, 2010

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

SUBJECT: NRC INSPECTION REPORT 040-08943/10-001 AND NOTICE OF VIOLATION

Dear Mr. Teahon:

This refers to the unannounced, routine inspection conducted on June 8-10, 2010, 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 23, 2010.

Based on the results of this inspection, the NRC has determined that two Severity Level IV violations of NRC requirements occurred. These violations were evaluated in accordance with the NRC Enforcement Policy included on the NRC's Web site at www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html. The violations are cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in detail in the subject inspection report. The violations are being cited in the Notice because they were identified by the NRC, rather than being identified by the licensee.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. For your consideration and convenience, an excerpt from NRC Information Notice 96-28, "Suggested Guidance Relating to Development and Implementation of Corrective Action," is enclosed. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

Based on the results of this inspection, the NRC has also determined that one additional Severity Level IV violation of NRC requirements occurred. This violation involve your failure to perform mechanical integrity tests on two wells prior to placing them back into service after work had been performed on them, as required by License Condition 10.2. This non-repetitive, licensee-identified and corrected violation is being treated as Non-Cited Violation (NCV), consistent with Section VI.A.8 of the Enforcement Policy. The NCV is described in the subject inspection report. If you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to

the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, Region IV, and the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response 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) 860-8197.

Sincerely,

/RA/

Jack E. Whitten, Chief
Nuclear Materials Safety Branch B

Docket: 040-08943
License: SUA-1534

Enclosures:

1. Notice of Violation
2. NRC Inspection Report 040-08943/10-001
3. NRC Information Notice 96-28

cc w/enclosures 1&2:
Public Document Room
Upper Niobrara-White Natural Resources District
805 East Third
Chadron, Nebraska 69337

Nebraska Department of Environmental Control
Box 94877 Statehouse Station
301 Centennial Mall South
Lincoln, Nebraska 68509

Nebraska Radiation Control Program Director

bcc w/enclosures 1&2 (via ADAMS e-mail distribution):

- C. Cain, DD:DNMS
- J. Whitten, C:NMSB-B
- L. Gersey, NMSB-B
- L. Roldan, NMSB-B
- V. Kurian, FSME/DWMEP/DURLD
- R. Burrows, FSME/DWMEP/DURLD
- T. Lancaster, FSME/DWMEP/DURLD
- W. VonTill, FSME/DWMEP/DURLD
- Fee Coordinator, DRMA, RIV

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Publicly Avail	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sensitive	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Sens. Type Initials	LMG
RIV:DNMS:NMSB-B	FSME:DWMEP	FSME:DWMEP	C:NMSB-B		
L. Gersey	R. Burrows	T. Lancaster	J. Whitten		
/RA/	/RA ViaEmail/	/RA ViaEmail/	/RA/		
08/20/2010	08/19/2010	08/19/2010	08/20/2010		

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NOTICE OF VIOLATION

Crow Butte Resources, Inc.
Crawford, Nebraska

Docket 040-08943
License SUA-1534

During an NRC inspection conducted on June 8 through June 10, 2010, two violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

- A. License Condition 9.12 states, in part, that the licensee shall follow the guidance set forth in the U.S. Nuclear Regulatory Commission Regulatory Guide 8.31, "Information Relevant to Ensuring That Occupational Radiation Exposures at Uranium Recovery Facilities Will Be As Low As Reasonably Achievable."

Contrary to the above, the licensee failed to have a minimum of one full-time health physics technician that met the education, training, and experience, as required by Regulatory Guide 8.31, Section 2.4, Technical Qualifications of Health Physics Staff.

This is a Severity Level IV violation (Supplement VI).

- B. 10 CFR 40.9(a) requires, in part, that information required by the Commission's regulations to be maintained by the licensee shall be complete and accurate in all material respects.

10 CFR 20.1502(b)(1) states, in part, that a licensee shall monitor for the occupational intake of radioactive material by, and assess the committed effective dose equivalent to, adults likely to receive, in 1 year, an intake in excess of 10 percent of the applicable annual limits.

Contrary to the above, between mid-2007 and June 2010, the licensee used the modified Kusnetz method to verify compliance with 10 CFR 20.1502(b) for occupational exposure to radon progeny. Due to a spreadsheet error involving incorrect time factors, the licensee's occupational dose records were not maintained complete and accurate in all material respects.

This is a Severity Level IV violation (Supplement V).

Pursuant to the provisions of 10 CFR 2.201, Crow Butte Resources, Inc. is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region IV within 60 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time. If you contest

this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response 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, it should not include any personal privacy, proprietary or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 20th day of August 2010

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.: 040-08943

License No.: SUA-1534

Report No.: 040-08943/10-001

Licensee: Crow Butte Resources, Inc.

Facility: Crow Butte Facility

Location: Dawes County, Nebraska

Dates: June 8-10, 2010

Lead Inspector: Linda M. Gersey, Health Physicist
Nuclear Materials Safety Branch B

Accompanied by: Ronald A. Burrows, CHP, RRPT, Senior Health Physicist
Uranium Recovery Licensing Branch
Decommissioning and Uranium Recovery Licensing Directorate
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Lizette Roldan, PhD, Health Physicist
Nuclear Materials Safety Branch B

Approved by: Jack E. Whitten, Chief
Nuclear Materials Safety Branch B

Attachment: Supplemental Inspection Information

ENCLOSURE 2

EXECUTIVE SUMMARY

Crow Butte Resources, Inc.
NRC Inspection Report 040-08943/10-001

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

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 conducted the As Low As Reasonably Achievable program review 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).
- One violation was closed pertaining to a failure of the licensee to request an alternate decommissioning schedule for wellfield restorations (Section 2).

Radiation Protection

- The licensee implemented a radiation protection program that met the requirements of 10 CFR Part 20 and the license, with two exceptions (Section 3).
- One violation was identified 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).
- One violation was identified pertaining to dose records that were required by 10 CFR Part 20 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 (Section 4a)

ENCLOSURE 2

- The annual dose to members of the public was below regulatory limits (Section 4).
- One non-cited violation was identified related to failure to perform mechanical integrity tests on wells that had been worked over and placed back into service (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).
- One violation was closed related to the failure of the licensee to provide U.S. Department of Transportation hazardous material training to several employees (Section 5).

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). The current operational status of the facility is as follows:

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

Based on Nebraska Department of Environmental Quality Permit NEO122611, the licensee can have no more than five mine units in production and no more than five mine units in restoration at any one time. Therefore, production in Mine Unit 11 cannot start operation until Mine Unit 6 is placed into restoration.

Since the previous inspection, conducted in July 2008, NRC staff has been reviewing the licensee's North Trend site expansion amendment, and a hearing has been granted for this licensing action. The licensee also submitted a license renewal application which is currently under NRC review. Hearing requests were submitted for the license renewal, and subsequently granted for the license renewal.

The operating flow observed at the time of the inspection was 7,800 gallons per minute (gpm). Three new small ion-exchange columns were added to the CPP since the previous inspection. The new columns were being used to treat pond water for uranium and had been in service for approximately 1.5 months. The treated pond water will then be 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 by the end of 2010.

In August 2010, the licensee submitted an application for a satellite operation at the Three Crow site located south of Crawford, Nebraska. The licensee has completed the exploration phase at this site and is now engaged in developmental drilling. According to the statements made by the licensee, the application for this site is approximately 50% complete. 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. During the inspection, the inspectors reviewed the organizational structure. At the time of the inspection, the licensee had 67 full time employees including two temporary employees. The licensee also employed contractors for all drilling operations and other work, as needed. Since the previous inspection, there has been a turn-over of six employees, mostly from maintenance and operations staff. The inspectors concluded that the licensee had sufficient staff to implement the conditions of the license.

License Condition 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 nine SERP evaluations that were performed by the licensee since the last inspection (SERP 09-05, SERP 09-06 and SERPs 10-01 through 10-07). The evaluations made by the SERP included a technical review involving the approval to operate the pond water treatment circuit for removing uranium from the commercial evaporation ponds, resulting in the ultimate disposal of the waste water down the licensee's deep disposal well. The inspectors concluded that the evaluations were technically adequate and provided sufficient detail to support the proposed changes and that 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 Reasonable Achievable" (ALARA) program reviews. The inspectors noted that the annual ALARA audit for 2009 licensed activities was conducted during June 2010 by a third-party contractor. The independent audits conducted by the third-party contractor did not identify any significant problems. The inspectors determined that the licensee's ALARA audit was a thorough review of licensed activities.

The inspectors interviewed several employees and contractors during the inspection. The purpose of the interviews was to assess the personnel's level of knowledge of the licensee's safety procedures and to determine how the interviewees would handle emergencies should they occur. During these interviews, the inspectors found that the staff exhibited a proactive safety-consciousness about radiation and industrial safety. It appeared to the inspectors that a strong safety culture existed and there were mechanisms for personnel to voice safety concerns and receive a response from management.

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 conducted the ALARA program review 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, research and development 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.

The inspectors observed a dryer operator prepare for entry into the yellowcake packaging room followed by the operator drumming dried yellowcake. The dryer operator performed all drumming activities in accordance with written procedures. License Condition 10.8B requires, in part, the monitoring of the pressure differential every four hours during yellowcake drying operations; however, the licensee has elected to monitor the pressure differential continuously.

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 Pond 4 liner tear, as discussed below, was also viewed by the inspectors. The inspectors observed that the spray evaporation system was operating satisfactorily.

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 October 30, 2009. 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 a letter to the NRC dated March 24, 2010, which indicated that a liner leak potentially existed in Pond 4. 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 Pond 4 was lowered and the location of the tear was identified. At the time of the inspection, the licensee was still working on repairs. Water sampling results from nearby monitoring wells showed that no pond water was leaking into the surrounding groundwater. The leak was confined to the upper liner. The results of the repair will be evaluated during the next inspection.

ENCLOSURE 2

The licensee was issued a violation (VIO 040-08943/0901-02) during the previous inspection, related to the failure to comply with the decommissioning requirements specified in 10 CFR 40.40(h)(1) and 10 CFR 40.42(i), as it relates to wellfields. By letter dated July 24, 2009, the licensee submitted a request for alternate decommissioning (groundwater restoration) schedule to the NRC for wellfields 2 through 5. The NRC approved this request in a letter to the licensee dated August 20, 2009. At the time of the inspection, wellfields 2 through 5 were found to be the only wellfields in restoration at the facility. These wellfields were determined to be currently compliant with the approved alternate decommissioning schedule. In the licensee's reply to the violation, dated October 19, 2009, the licensee committed to reviewing the decommissioning schedule for wellfields and documenting the review in the Annual Summary of Changes that is submitted to the NRC annually. This violation is considered closed.

2.3 Conclusions

Site operations were being conducted in accordance with applicable license conditions and regulatory requirements. One violation was closed pertaining to a failure of the licensee to request an alternate decommissioning schedule for wellfield restorations.

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) 2009, 58 employees were monitored for occupational exposure. The licensee's exposure records for 2009 through the first quarter 2010 were reviewed. Occupational doses are based on a summation of airborne uranium and radon progeny, if applicable, urine bioassay results, and optical stimulated luminescence dosimetry reported doses. No bioassay results were found to be greater than the action level of 15 micrograms per liter of urine, and therefore, did not contribute to any employee's dose.

The occupational exposure records indicated that the highest total effective dose equivalent for CY 2009 was 678 millirems. The highest total effective dose equivalent for the first quarter of 2010 was 147 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 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 spreadsheet error was found to begin sometime in mid-2007 and extend through the time of the inspection. The licensee anticipated that when the exposure

calculations are corrected, the increase in radon progeny exposure will be less than an additional 10% of the currently reported total dose. This is a violation of 10 CFR 40.9(a), which requires, in part, that information required by the Commission's regulations to be maintained by the licensee shall be complete and accurate in all material respects.

Since the previous inspection, fetal monitors were assigned to two declared pregnant women. One woman was monitored from March through May 2010 and the total dose assigned to the fetus was 3 millirems, based on fetal monitoring. The second woman was monitored from March through May 2010 and the dose assigned to the fetus was 1 millirem, based on fetal monitoring. The fetal exposures 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 2009 through June 10, 2010, 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.

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 2010 for 97 employees and contractors. The training included review of the NRC license and State permits, emergency response, U.S. Department of Transportation hazardous materials (DOT HAZMAT) training, 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 the initial and refresher training programs to be adequate.

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 NRC Regulatory Guide (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 three 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. The licensee's two HPTs have 6.6 weeks and 9.4 weeks, respectively, taking into account four weeks of on-the job training. This is a violation of License Condition 9.12, which states that the licensee shall follow the guidance in U.S. NRC Regulatory Guidance 8.31.

During site tours, the inspectors performed independent radiological surveys using an NRC-issued survey meter, a Ludlum Model 19 microRoentgen meter (NRC Number 015544, calibration due date April 6, 2011, calibrated with radium-226). 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 12000 $\mu\text{R/hr}$ and these reading were found near the acid bath in the CPP, which is a restricted area. 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, with two exceptions. One violation was identified related to the failure of the licensee to have one health physics technician that met the training requirements in License Condition 9.12. One violation was identified pertaining to dose records that were required by 10 CFR Part 20 were not 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 License Condition 11.3, and the reporting requirements are specified in License Condition 12.1. The two Semi-annual Radiological Effluent and Environmental Monitoring Reports (semi-annual reports) for CY 2009 were reviewed during the inspection. The semi-annual 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 25-38 millirems, and were comparable to background levels.

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 2009. 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 2009 semi-annual reports also contained water supply well data. Water supply wells located within 1-kilometer of the wellfields were sampled quarterly. A total of 18 wells were sampled in 2009. One well was shut off by the owner and was not sampled. Results presented in the semi-annual reports are consistent with previously collected data.

The licensee's evaluation of the annual dose to the public was submitted with the semi-annual report for the third and fourth quarters of 2009. 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 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 17 millirem for CY 2009, 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 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 July 2009 to June 2010, to determine if the licensee was collecting samples at the required frequency and if 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 License Condition 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, 11 spills occurred resulting in a total of 3,682 gallons of unrecovered fluids. Of the total unrecovered volume, 1,995 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 if test results were being appropriately reported and the tests were being properly performed. The inspectors observed a MIT at well I372P and verified that the test was performed in accordance with test procedures outlined in Document P-23 of the facility's operating manual. The inspectors determined that the licensee was properly performing and documenting the MITs.

During the inspection, the licensee discussed a self-identified violation. During October 2009, the licensee found that wells I-366 and I-367 were taken out of service on April 21, 2009, to perform well workovers and placed back in service on May 27, 2009, without

MIT testing. Subsequently on October 15, 2009, a MIT technician discovered that these wells were not tested prior to being placed back into service. On the day of this discovery, MIT tests performed on each well and each test passed. This is a violation (NCV 040-08943/1001-03) of License Condition 10.2, which requires, in part, that MITs shall be performed on each injection and production wells that have been serviced with equipment or procedures that could damage the well casing. However, this non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VI.A.8 of the NRC Enforcement Policy. The licensee initiated a tag-out procedure to be completed by the senior Geologist to prevent recurrence. The inspectors reviewed the corrective actions and found them to be adequate.

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. One non-cited violation was identified related to failure to perform mechanical integrity tests on wells that had been serviced prior to being used.

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

5.1 Inspection Scope

Determine if 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 inspectors noted that a new waste disposal agreement had been generated through a new vendor, although the agreement had not been submitted to the NRC for review, as required by LC 9.7. The licensee had maintained an active waste disposal agreement with the previous vendor, and thus, had 90 days before termination to submit the new agreement for NRC approval. The licensee submitted the new waste disposal contract to the NRC in letter dated July 12, 2010.

The licensee had made one byproduct waste shipment since the previous inspection. The inspectors reviewed the waste disposal shipments and found them to be in compliance with DOT and NRC requirements. The licensee maintained records of 19 yellowcake shipments that occurred between July 2009 and June 7, 2010. The shipping papers were compared to the requirements of 49 CFR 172 Subpart C. All required information was presented on the shipping papers.

The licensee was issued a violation (VIO 040-08943/0901-04) during the previous inspection pertaining to the licensee's failure provide DOT HAZMAT training, as specified in 49 CFR 172.702, to employees involved in shipping of radioactive materials. The licensee's reply to the violation, dated October 19, 2009, stated that all HAZMAT employees were appropriately trained in September 2009. The inspectors reviewed the training documentation and found them to be adequate. To prevent recurrence, the

licensee committed to reviewing the HAZMAT training records on an annual basis. This violation is considered closed.

5.3 Conclusions

The licensee was conducting waste disposal operations in accordance with license and regulatory requirements. One violation was closed related to the failure to provide DOT HAZMAT training to several employees.

Exit Meeting Summary

The inspectors presented the preliminary inspection results to the licensee's representatives at the conclusion of the onsite inspection on June 10, 2010. A final exit briefing was conducted by telephone with the licensee on July 23, 2010. 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

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
040-08943/1001-03	NCV	Failure to perform MITs on two wells having workovers

Closed

040-08943/0901-02	VIO	Failure to request an alternate decommissioning schedule for well-field restorations
040-08943/0901-04	VIO	Failure to provide DOT hazmat training to several employees
040-08943/1001-03	NCV	Failure to perform MITs on two wells having workovers

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

List of Acronyms Used

ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
CPP	Central Processing Plant
DOT	U.S. Department of Transportation
gpm	gallons per minute
HAZMAT	hazardous material
HPT	health physics technician
IP	Inspection Procedure
MIT	mechanical integrity test
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
SERP	Safety and Environmental Review Panel
μ R/hr	microRoentgens per hour
VIO	violation