



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
612 EAST LAMAR BLVD, SUITE 400  
ARLINGTON, TEXAS 76011-4125

October 25, 2011

Arlene Faunce, Radiation Safety Officer  
Power Resources, Inc.  
P.O. Box 1210  
Glenrock, Wyoming 82637

SUBJECT: NRC INSPECTION REPORT 040-08964/11-002 AND NOTICE OF VIOLATION

Dear Ms. Faunce:

This refers to the announced, routine inspection conducted from August 29 through September 1, 2011, at the Smith Ranch uranium recovery facility in Converse County, Wyoming. This 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 with the conditions of your license. Within these areas, the inspection consisted of selected examination 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. The final exit briefing was conducted with you telephonically on September 27, 2011.

Based on the results of this inspection, the NRC has determined that three Severity Level IV violations of NRC requirements occurred. The violations are related, a) to your failure to store byproduct waste bins within a restricted area, as required by a license condition, b) your failure to provide the NRC with copies of excursion and spill that had been reported to the State of Wyoming, as required by a license condition, and c) failure to have an alarm to notify wellfield operators that an exceedence had occurred, as required by the license application. 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](http://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 because the NRC identified the violations rather than your staff. In addition, the violations are being cited to ensure that you provide us with the corrective actions necessary to prevent recurrence of the violations.

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, 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.

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 at 817-860-8299 or the undersigned at 817-860-8191.

Sincerely,

*/RA/*

D. Blair Spitzberg, PhD, Chief  
Repository and Spent Fuel Safety Branch

Docket: 040-08964  
License: SUA-1548

Enclosures:

1. Notice of Violation
2. NRC Inspection Report 040-08964/11-002
3. NRC Information Notice 96-28

cc w/Enclosure:

Ms. Carol Bilbrough  
Program Manager  
Wyoming Department of Environmental Quality  
Land Quality Division  
122 West 25th  
Cheyenne, Wyoming 82002

Mr. Lowell Spackman  
District I Supervisor  
Land Quality Division  
Herschler Building - Third Floor West  
122 West 25th  
Cheyenne, Wyoming 82002

Wyoming Radiation Control Program Director

bcc w/enclosure via e-mail:

- R. Caniano, D:DNMS
- V. Campbell, DD:DNMS
- J. Whitten, C:NMSB-B
- B. Spitzberg, C:RSFS
- L. Gersey, RSFS
- E. Striz, FSME/DWMEP/DURLD
- D. Mandeville, FSME/DWMEP/DURLD
- B. VonTill, FSME/DWMEP/DURLD
- M. Herrera, Fee Coordinator, DRMA

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 FINAL: R:\\_DNMS\2011\PRI-SR IR 2011-002.docx

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**U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV**

Docket: 040-08964

License: SUA-1548

Report: 040-08964/11-002

Licensee: Power Resources, Inc.

Facility: Smith Ranch In-Situ Recovery Facility

Location: Converse County, Wyoming

Dates: August 29 through September 1, 2011

Inspector: Linda M. Gersey, Health Physicist  
Repository and Spent Fuel Safety Branch

Accompanied by: Elise Striz, Hydrogeologist  
Decommissioning and Uranium Recovery Licensing Directorate  
Division of Waste Management and Environmental Protection  
Office of Federal and State Materials and Environmental  
Management Programs

Drew Persinko, Deputy Director  
Division of Environmental Protection and Performance  
Assessment Directorate  
Office of Federal and State Materials and Environmental  
Management Programs

Approved by: D. Blair Spitzberg, PhD, Chief  
Repository and Spent Fuel Safety Branch

Attachment: Supplemental Inspection Information

Enclosure

## NOTICE OF VIOLATION

Power Resources, Inc.  
Converse County, Wyoming

Docket: 040-08964  
License: SUA-1548

During an NRC inspection conducted on August 29 through September 1, 2011, three violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

- 1) License Condition 10.1.7 states, in part, that the licensee shall maintain an area within the restricted area boundary for storage of contaminated materials prior to their disposal.

Contrary to the above, on August 30, 2011, the licensee had two byproduct disposal bins, containing contaminated materials, stored in an unrestricted area adjacent to the Central Processing Plant.

This is a Severity Level IV violation (Section 6.7).

- 2) License Condition 12.1 states, in part, that if the licensee is required to report any wellfield excursions, spills, or pond leaks of source, 11e.(2) byproduct material, and process chemicals that may have an impact on the environment, or any other incidents/events, to State or Federal Agencies, a report shall be made to the NRC Headquarters Project Manager within 24 hours. Also, once a notification of a spill is made, the licensee is required to submit a written report documenting the event, corrective actions, and the outcome within 30 days.

Contrary to the above, the licensee failed to provide a 30 day follow-up report for a spill that occurred on May 5, 2011, in Mine Unit 15A. The licensee also failed to provide NRC with copies of correspondence addressed to the Wyoming Department of Environmental Quality, dated May 9, 2011, August 12, 2011 and August 26, 2011, related to the spill at Mine Unit 15A.

This is a Severity Level IV violation (Section 6.9).

- 3) Section 3.3 of the NRC approved license application states, in part, that monitoring and alarm instrumentation are employed to provide centralized monitoring of key process components, and when operating parameters move outside specified normal operating ranges, an alarm will notify the operator to initiate corrective action to alleviate the problem.

Contrary to the above, on May 3, 2011, a release of production fluids occurred in Mine Unit 15A involving eight production wells, which caused operating parameters to move outside of the specified normal operating range. As a result of this occurrence, no automatic alarm was received at satellite building SR-1 to tell the night shift operator that there was a problem.

This is a Severity Level IV violation (Section 6.3).

Pursuant to the provisions of 10 CFR 2.201, Power 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 30 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 2 working days.

Dated this 25<sup>th</sup> day of October 2011

## **EXECUTIVE SUMMARY**

### Power Resources, Inc. Smith Ranch In-Situ Recovery Facility NRC Inspection Report 040-08964/11-001

This inspection included a review of site status, site tours, management organization and controls, site operations, radiation protection, environmental protection, transportation, and radioactive waste management.

#### **Management Organization and Controls**

- The organizational structure and staffing levels maintained by the licensee during the inspection period met the requirements specified in the license and were sufficient for the work in progress (Section 1.2).
- The licensee completed the safety and environmental review panel evaluations in accordance with license requirements (Section 1.2).

#### **In-Situ Leach Facilities**

- With the exception of the three violations identified in this report, the licensee was conducting plant site operations in accordance with license and regulatory requirements (Section 2.2).
- An Unresolved Item related to the purge storage reservoir 2 and its impact on groundwater remains open (Section 2.2a).
- A violation related to the alternate decommissioning schedule for mine units was closed (Section 2.2c).
- Radiologically restricted areas were properly posted, plant parameters were within required operating intervals, and plant security met license requirements (Section 2.2).

#### **Radiation Protection**

- The licensee implemented a radiation protection program that met the requirements of 10 CFR Part 20 and the license (Section 3.2).
- The doses to employees were below occupational dose limits (Section 3.2).

#### **Effluent Control and Environmental Protection and Maintaining Effluents from Materials Facilities as Low As Reasonably Achievable (ALARA)**

- The licensee implemented environmental, groundwater, and surface water monitoring programs in accordance with the license, with two exceptions (Section 4.2).
- One violation was identified related to the failure of the licensee to provide a 30 day spill report to the NRC (Section 4.2c).
- One violation was identified related to failure to have an alarm that allows an operator to initiate corrective action (Section 4.2c)

- One unresolved item was identified related to failure to evaluate wells that may have exceeded injections pressures after an incident (Section 4.2c).

#### Inspection of Transportation Activities and Radioactive Waste Management

- One violation related to failure to follow DOT requirements while transporting licensed material was closed (Section 5.2).
- One violation was identified related to the storage of byproduct storage bins containing contaminated materials in an unrestricted area (Section 5.2).
- The licensee was transporting radioactive material in accordance with NRC and DOT requirements (Section 5.2).
- The licensee had collected wastewater samples as required by the license application, and the sample results indicated that the fluid met the criteria for disposal by land application (Section 5.2).



## Report Details

### **Site Status**

At the time of the inspection, Power Resources, Inc. was mining uranium using the in-situ recovery process. Four satellite facilities (Sat-2, Sat-3, SR-1, and SR-2) were in service and supporting ten operating wellfields. Seven wellfields were in active restoration. Three wellfields were in development and five were in delineation phase. Uranium processing and drying operations were in progress at the Smith Ranch Central Processing Plant (CPP). Uranium recovery operations were on standby at the Highland CPP.

The licensee was conducting limited work at its other licensed satellite facilities. In order to initiate operations at the Reynolds Ranch satellite, the licensee was in the process of obtaining approval for the Reynolds Ranch Environmental Assessment from the U.S. Bureau of Land Management and pursuant approval from the Wyoming Department of Environmental Quality (WDEQ). The Gas Hills, Ruth, and North Butte satellites are not in operation at this time. The licensee, however, has installed a meteorological station at North Butte, drilled 400 delineation holes, designed the first wellfield, and is planning the first pumping test for the fourth quarter 2012. The licensee has installed a meteorological station at Gas Hills and drilled two test holes to evaluate the target formation for the proposed deep disposal well. No activity is occurring or planned at the Ruth Satellite. Both the Gas Hills and Ruth Satellite are inspected once per quarter by the licensee.

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

#### **1.1 Inspection Scope**

Ensure that the licensee had established an organization to administer the technical programs and to perform internal reviews, self-assessments, and audits.

#### **1.2 Observations and Findings**

##### **a. Organizational Structure**

The licensee's organizational structure is illustrated in Figure 9-1 of the February 2008 license amendment that was approved by the NRC on August 18, 2008. The inspectors reviewed the licensee's current organizational structure and found that it was in agreement with the structure specified in Figure 9-1. At the time of the inspection, the licensee had 155 full time employees. The licensee had 14 vacancies, one of which was the manager of safety, health, environment, and quality. The licensee's radiation safety staff consisted of one Radiation Safety Officer (RSO), one qualified health physics technician (HPT), and two HPTs in training. The licensee uses contractors for drilling work and as needed. The inspectors determined that the licensee had sufficient staff to implement the radiation protection, groundwater monitoring, and environmental programs at its current operating level.

Since the previous inspection, in February 2011, two changes to the radiation safety staff occurred. On March 3, 2011, the licensee evaluated the approval of a new RSO, through the Safety and Environmental Review Panel (SERP) process, recorded as SERP 03/11-2. Although the licensee concluded that the new RSO met the education, training, experience, and knowledge, as required under NRC Regulatory Guide (RG)

8.31, they asked the NRC for specific approval of the RSO in letter dated June 3, 2011. The NRC responded to this written request in letter dated August 19, 2011, which stated that formal review and a determination would be made during the next inspection. The inspectors reviewed the credentials for the new RSO and agreed with the licensee's determination that the RSO was qualified for the position and that no license amendment was required for this change. On September 1, 2011, the inspectors attended the SERP evaluation (SERP 08/11-1) conducted by the licensee to evaluate if one of the radiation safety staff had the education, training, and experience, as required in RG 8.31, to be a qualified HPT. The inspectors reviewed the qualifications of the proposed HPT and agreed with the licensee's determination that the individual was qualified to be an HPT and this action did not require NRC approval or license amendment.

b. Safety and Environmental Review Panel

The inspectors reviewed ORC/SERP 02/10-1, Deep Disposal Well (DDW) Installation, related to the installation of WDEQ permitted deep disposal wells, DDW-6, DDW-9, and DDW-10 within the license area. The SERP documented the technical details of these wells. The well installation was described in the Operational Review Committee (ORC) minutes. The committee found the installation, injection formation, monitoring and operation of these wells to be the same as existing permitted deep disposal wells. Therefore, the SERP concluded the installation and operation the deep injection wells are not contrary to the license or reviews conducted by the NRC during previous review or approvals. The inspectors concluded that the licensee had implemented the SERP determination in accordance with the performance-based license conditions.

The inspectors reviewed ORC/SERP 08/10-1, Mine Unit D-Extension Restoration, related to starting restoration at the MU-D ext by adding it to the restoration plan as required by License Condition (LC) 10.1.9b. The ORC minutes contained the restoration plan for this mine unit and concluded a SERP must be conducted. The final SERP appears to be a summary document of the ORC analysis. The inspectors concluded that the licensee had implemented the SERP determination in accordance with the performance-based license conditions; however, the inspectors suggested that the ORC minutes should be included in the SERP documents in the future to show a comprehensive analysis was conducted.

The inspectors reviewed ORC/SERP 03/11-1, conducted on May 5, 2011, related to the change to training frequency during a given year. The change removed the word "quarterly" from the license application and inserted "at most four times per year." The licensee determined that the change would not alter the presentation of required information but would provide more flexibility in scheduling annual training sessions. The SERP also determined that the change would not compromise employee safety nor degrade the time devoted to radiation safety training. The inspectors concluded that the licensee had implemented the SERP determination in accordance with the performance-based license conditions.

1.3 Conclusions

The organizational structure and staffing levels maintained by the licensee during the inspection period met the requirements specified in the license and were sufficient for the work in progress. The licensee completed the SERP evaluations in accordance with license requirements.

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

### **2.1 Inspection Scope**

Determine if in-situ recovery activities were being conducted by the licensee in accordance with the NRC's regulatory requirements and the license.

### **2.2 Observation and Findings**

#### **a. Unresolved Item 040-08964/0801-03**

In response to Unresolved Item 040-08964/0801-03, identified by inspectors during the March 2008 inspection, the licensee committed to install four shallow monitoring wells (MW-1S, MW-2S, MW-3S, and MW-4S) near Purge Storage Reservoir 2 (PSR2) to determine whether or not PSR2 was leaking into the surrounding groundwater. The licensee's commitment was documented in a letter to the NRC dated June 22, 2009. The wells have been installed and sampling of the wells was conducted on September 11, 2009, March 23, 2010, June 30, 2010, September 28, 2010, November 18, 2010 and March 16, 2011. The groundwater samples were analyzed for bicarbonate, chloride, sulfate, barium, selenium, uranium, and radium-226 concentrations by a contract laboratory.

The inspectors evaluated the water quality monitoring well data (2009-2011) from the four new wells and historical monitoring data from the South and East shallow wells (1996-date). They compared the PSR2 pond water quality data (1996-date) provided in the semi-annual monitoring reports to the water quality in the six shallow monitoring wells. The inspectors concluded from this analysis that the water quality in five out of the six shallow monitoring wells reflected elevated concentrations for chloride, conductivity, natural uranium, and selenium similar in magnitude to those found in the PSR2 pond water. In addition, for the original PSR 2 South and East monitoring wells which have water quality data from 1996 to date, these constituents demonstrated an increasing trend with time.

During the inspection, the licensee provided the inspectors with two separate reports prepared by a contractor who was hired by the licensee to determine if the waste water in PSR2 was leaking into the surrounding groundwater. The first report was titled, "Purge Storage Reservoir No. 2 Shallow Groundwater Characterization Monitoring Plan," dated August 17, 2011. The second report was titled, "Work Plan for Installing Groundwater Monitoring Wells," dated August 30, 2011.

The first contractor report presented an analysis of water levels and selenium in the four new monitoring wells around PSR2. It also presented a groundwater characterization plan to provide the data necessary to determine whether the waste water in PSR 2 is leaking into shallow groundwater beneath the impoundment. The report stated that the "groundwater encountered in the shallow monitoring wells is considered to be perched and laterally discontinuous." The report also stated "the uppermost continuous water – bearing zone is postulated to be at a depth of at least approximately 50-60 feet below ground surface (bgs). The inspectors noted that in the original application for PSR2 approved by NRC in 1994, the licensee stated that the first groundwater detected underneath PSR2 was located at 200 feet bgs and no groundwater was present above this depth.

The contractor report also presented the selenium concentrations in the four new monitoring wells. The inspectors noted these values ranged from 1.76-2.3 milligrams per liter (mg/l) in the new west well, MW1S; 0.003 to 0.006 mg/l in the new north well, MW2S; 0.554 to 0.840 mg/l in the new east well , MW-4S; and 0.178 to 0.44 mg/l in the new south well, MW-3S. These values of selenium are of the same magnitude as the historical concentrations of selenium in the pond water in PSR2, with the exception of the north well. The inspectors noted that the well completion reports provided by the licensee during the inspection indicated the north well was completed in a zone 8-15 feet higher than the other three shallow wells, which could explain why it did not show similar concentrations to the other wells.

Based on the information provided in the first contractor report and NRC's internal analysis, the inspectors conclude that the presence of perched groundwater, which was not described before PSR2 was approved by NRC, indicates that water has seeped from PSR2 into the surrounding sediments. In addition, the associated water quality in this perched water as measured in the four new shallow monitoring wells and the historic South and East wells also support the conclusion that water from PSR2 is seeping into the surrounding sediments. However, the inspectors noted the presence of water seeping into the sediments from PSR2 is not evidence that the seepage is leaking into deeper groundwater aquifers. Therefore, the inspectors conclude that the licensee must conduct further characterization of the groundwater under PSR2 to determine if the seeping water has impacted a groundwater aquifer.

One of the contractor reports described an acceptable characterization plan to evaluate if there is any movement of fluids to the next deeper sandstone below the new shallow monitoring wells. The second contractor report described the associated work plan for this characterization plan. The inspectors found the characterization plan and work plan to be generally satisfactory to make a determination if the fluids seeping from PSR2 have impacted a groundwater aquifer; however, the inspectors, in consultation with the licensee's NRC project manager, would like the characterization to include an analysis of bicarbonate, chloride, conductivity, sulfate, barium, selenium, natural uranium and radium-226 in all of the monitoring wells instead of only selenium. The licensee has committed to conduct this characterization as described in the contractor's characterization and work plan and include testing of the additional listed constituents in the new and all existing wells. Once this characterization is completed, the licensee will determine if the groundwater in the next lower sandstone has been impacted by the seepage of PSR2 fluids into the surrounding sediments. The results will be reviewed in future inspections and Unresolved Item 040-08964/0801-03 remains open.

b. Recovery Operations and Restoration

At the time of this inspection, recovery operations were being performed at Highland Mine Units (MU) F, H, I, J, and K. Recovery operations were also being conducted at Smith Ranch Mine Units 2, 3, 9, and 15/15A. Restoration activities were in progress at MUs C, D/D-extension, and E on the Highlands side and MUs 1 and 4 on the Smith Ranch side. MUK North is awaiting approval for operation from WDEQ. MU4A is in restoration planning awaiting a SERP to be concluded. Development is underway in MUs 7 and 10. Delineation is underway in MUs 8, 11, 16, 17, and I extension. The bioremediation trial at MUC had mixed results, and the mine unit was returned to conventional groundwater restoration treatment. Wells in several older mine units, MUs

C, D and E, had to be replaced prior to performing full-scale restoration activities, which delayed implementation of the restoration activities.

At the time of the inspection, the licensee had seven deep disposal wells that were installed and available for use. Two additional wells were permitted for operation but had not been installed. In addition to the deep disposal wells, the licensee was authorized to dispose of wastewater via land application. Since the last inspection, the licensee operated one of two land application irrigators in the months of June, July and August 2011. Section 5.2.c of this inspection report provides additional details about the disposal of wastewater via land application.

The inspectors also conducted a review of the licensee's control of its disposal pathways for plant wastewater. The sources of wastewater include the production bleed stream, plant wash-down water, sump water, laboratory wastes, and reverse osmosis system water. At the CPP, the sources of wastewater also include the yellowcake thickener overflow and filter press wash water. As described in the license application, the licensee is authorized to dispose of wastewater through land application or by deep-disposal well injection.

At this time, seven wellfields are in restoration, with MUC in restoration since 1999. Only one wellfield, MUA, has been approved for restoration by NRC. The licensee has indicated that one factor that has hampered restoration activities in the past was the limited disposal capacity. With the recent installation of additional disposal wells, DDW-6, DDW-8 and DDW-10, the licensee has added disposal capacity. However, based on inspector interviews with licensee staff, the deep disposal wells are not performing as expected due to plugging problems from scaling. The licensee stated that all seven DDWs were operating at much lower capacity than permitted and would require acid treatment to restore some capacity. The range of permitted capacity for the seven DDWs was reported as 105-150 gallons per minute (gpm) with an average of 134.4 gpm. The range of actual capacity reported by the licensee for the seven wells was 38-85 gpm with an average of 49.8 gpm. Another factor limiting restoration was reported in the past to be the lack of infrastructure to connect all satellites to all waste treatment operations and DDWs. The licensee stated it is planning to install a five mile pipeline between Smith Ranch CPP and the Highlands Satellite 2 to carry reverse osmosis (RO) reject. The licensee stated this pipeline will enable it to access the waste disposal treatment system and deep disposal wells on the Highland operation to improve restoration operations.

The WDEQ and NRC have approved restoration activities at MUA. The groundwater restoration completion report for MUB was submitted to the NRC by letter dated June 26, 2009. NRC staff completed its acceptance review and determined that the report was insufficient. The licensee was notified by letter dated September 29, 2009, that the report was considered unacceptable for the purposes of conducting a detailed technical review. One issue regarding the MUB restoration was the existing long-term excursion status of one monitoring well B42. During the previous inspection, the licensee reported that monitoring well B42 failed a mechanical integrity test (MIT) and was replaced by MW B42 A. During the inspection, the inspectors reviewed the sampling report for MW B42A for a water quality sample taken on December 21, 2010. The report showed that none of the excursion indicators were exceeded at the well. The natural uranium was 0.0514 mg/l. The inspectors also inquired if any excursion monitoring was being conducted at MUB since the WDEQ has approved the restoration.

The licensee provided the inspectors with a February 8, 2005, memo from WDEQ which stated that all routine excursion monitoring at MUB may be discontinued. The inspectors found this documentation to be consistent with the NRC license application, Section 6.1.3.4, which states that excursion monitoring would be conducted until stability monitoring is completed and approved by WDEQ. The licensee stated they intend to apply for alternate concentration limits for the MUB when it resubmits the restoration report for NRC review and approval.

c. VIO 040-08964/0902-01

During the September 2009 inspection, one violation (VIO 040-08964/0902-01) of NRC requirements was identified related to the licensee's failure to decommission mine units within 24 months and failure to request an alternate decommissioning schedule for mine units that required greater than 24 months to decommission. The licensee responded to this violation by stating that a schedule is pending WDEQ review under a Consent Order between the licensee and the WDEQ for decommissioning, initiating groundwater restoration activities in one mine unit, and initiating infrastructure improvements at additional mine units, and that this schedule will be submitted as an alternate schedule to NRC pending WDEQ approval. During the review period, WDEQ staff issued comments to the licensee on the proposed schedule.

The licensee responded to the violation in letter dated September 14, 2011, requesting review and approval of an alternate decommissioning schedule for restoration of mine units. The licensee provided a restoration schedule that has been approved by the WDEQ. The NRC project manager will review and provide the approval of the restoration schedule. This response to this violation is considered adequate and is considered closed.

d. Site Tours

The inspectors conducted site tours to observe in-situ recovery operations in progress. Areas toured included the Smith Ranch CPP, the Highlands CPP (which is not operating) and the surrounding areas, the four operating satellites, the Selenium Plant, selected mine units, selected header houses (HH), PSR2, and the area used for storage of old equipment (referred to as the "boneyard"). The inspectors reviewed the status of plant equipment, radiation protection postings and site security. Plant parameters were within required operating intervals, plant equipment appeared to be in good condition, radiological postings were in place, and site security was adequate. In summary, the licensee was maintaining control of the areas and equipment in accordance with license and regulatory requirements.

The inspectors conducted independent radiological surveys of the gamma exposure rates present in the plant. The surveys were conducted using a Ludlum Model 19 microRoentgen survey meter (NRC 015546, calibration due date of 02/21/2012) and a Ludlum Model 2401-EC2 survey meter (NRC 016294G, calibration due date of 01/03/12). The inspectors did not identify any areas that had not already been identified and posted as radiation areas by the licensee.

## 2.3 Conclusions

With the exception of the three violations identified in this report, the licensee was conducting plant site operations in accordance with license and regulatory requirements. An Unresolved Item related to the PSR2 and its impact on groundwater remains open. A violation related to the alternate decommissioning schedule for mine units was closed. Radiologically restricted areas were properly posted, plant parameters were within required operating intervals, and plant security met license requirements..

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

### 3.1 Inspection Scope

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

### 3.2 Observations and Findings

#### a. Occupational Exposures

The inspectors reviewed the licensee's dose assessment records for January through July 2011. Approximately 60 employees were monitored for external exposures using thermoluminescent dosimeters that were exchanged on a quarterly basis. Occupationally monitored employees included CPP operators, satellite/restoration operators, health physics staff, and maintenance workers. The highest deep dose equivalent for January through July 2011 was 346 millirems (3.46 milliSieverts).

The licensee conducted air sampling, in part, for assessment of internal exposures. The inspectors reviewed the licensee's radon-222 air sampling records and the uranium particulate and worker breathing zone sample results for December through July 2011. The highest derived airborne concentration in hours (DAC-hrs) for radon daughters for an employee for the time reviewed was 70.82 DAC-hrs. The highest employee airborne uranium exposure was 1.35 DAC-hrs. The inspectors confirmed that the licensee had conducted sampling at the required intervals, and the sample results were included in the worker's total effective dose equivalent exposure records.

The licensee collected urine bioassay samples to assess the potential for intakes of uranium. The inspectors reviewed the bioassay program to verify compliance with License Conditions 11.2 and 11.3. From January through August 2011, only one bioassay sample result exceeded the action level of 15 micrograms per liter ( $\mu\text{g/l}$ ), the action level specified in Chapter 9 of the licensee's approved license application for implementation of corrective actions. On March 31, 2011, an employee's urine bioassay result was reported by the analytical laboratory as 51.2  $\mu\text{g/l}$ . The licensee had an albuminuria test on the sample and the results were non-detect. A second bioassay was collected on April 1, 2011, and the results were non-detect. The licensee performed an investigation and do not believe the individual received a true intake because the worker was in an area of very low natural uranium and no other workers from the same crew has positive bioassays. The licensee will assign a dose to the individual based on the bioassay result. The inspectors reviewed the investigation documentation and agree with the licensee's findings.

The licensee also monitors for soluble uranium intake in compliance with 10 CFR 20.1201e. The highest soluble intake of uranium from January through August 2011 was calculated to be 1.2 milligrams of uranium. This is below the regulatory limit of 10 milligrams.

b. Radiation Protection Surveys

Section 9.8 of the license application requires, in part, that the licensee perform quarterly gamma radiation surveys in specific locations throughout the satellite buildings and CPP areas to verify radiation area postings and to assess external radiation conditions. At the time of the inspection, the inspectors determined that the licensee was conducting the gamma radiation surveys on a weekly frequency in all areas, except the header houses. The header houses were surveyed on a monthly basis. The inspectors reviewed the survey results and found them to meet the requirements of the license.

Alpha contamination surveys were conducted by the licensee on a weekly frequency in clean areas of the site and in the process areas, although Section 9.13 of the license application authorizes the licensee to conduct monthly process area surveys. The inspectors reviewed the survey results and found them to meet the requirements of the license.

c. Training

The licensee is required to conduct training in accordance with License Condition 9.7 and license application Section 9.6 for its contractors and new employees and provide annual refresher training for current employees. The inspectors reviewed radiation safety training records for two current employees and several new contractors hired since the previous inspection. All training activities and records were in accordance with the requirements of the license.

d. Instrumentation

The inspectors reviewed the licensee's operability, calibration, and maintenance records for portable radiation survey instruments. On an annual basis, the licensee sends all portable survey instruments to an outside vendor for calibration. The inspectors reviewed instrument calibration certificates for several portable survey instruments and found the calibration certificates to be adequate and the instruments currently calibrated. The inspectors observed survey meters being used by the licensee's employees when exiting restricted areas. The survey instruments examined by the inspectors were found to be in calibration and were being used appropriately by the licensee's staff.

3.3 Conclusions

The licensee implemented a radiation protection program that met the requirements of 10 CFR Part 20 and the license. The doses to employees are below occupational dose limits.



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

##### **4.1 Inspection Scope**

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

##### **4.2 Observations and Findings**

###### **a. Environmental Monitoring**

License Condition 12.2 states, in part, that the results of effluent and environmental monitoring shall be reported to the NRC in accordance with the provisions of 10 CFR 40.65. The inspectors reviewed the licensee's Semiannual Effluent and Environmental Monitoring Report for January 1 through June 20, 2011, dated August 26, 2011 (referred to in this report as "semiannual report"). The licensee's environmental monitoring program consisted of air particulate, radon, ambient gamma radiation, groundwater, and surface water. As part of the licensee's wastewater land application permit from the WDEQ, soil and vegetation, irrigation fluid and radium treatment system samples, soil water samples at the irrigation areas, and monitor wells at PSR2 are sampled.

Continuous air particulate sampling was conducted at three locations: a background station, a downwind boundary station and a nearest downwind resident station. The licensee sampled the air for uranium, radium-226, and lead-210 particulate concentrations. The licensee also elected to voluntarily sample for thorium-230 concentrations in the air. None of the sample results for the first and second quarters of 2011 exceeded the respective effluent concentration limits specified in 10 CFR Part 20, Appendix B.

The licensee also sampled for radon-222 concentrations in the air at the three sample stations. The inspectors reviewed the radon-222 airborne concentration results for the first and second quarters of 2011. All sample results taken by the licensee were less than the effluent concentration limit specified in 10 CFR Part 20, Appendix B.

The licensee measured ambient gamma radiation levels at the three sample stations using thermoluminescent dosimeters. For the first and second quarters of 2011, all sample results were comparable to background level.

###### **b. Groundwater and Surface Water Environmental Monitoring**

The surface and groundwater monitoring program consists of quarterly sampling of groundwater and surface water for natural uranium and radium-226 in nearby wells and surface water sites used for livestock or for domestic water services which are located within 1 kilometer of the operating wellfields. The sampling consists of 10 surface water (stock) ponds, 7 windmills (groundwater), and 11 wells (groundwater). The semiannual report provided by the licensee at the time of inspection, showed sample data for 3 out of 20 possible surface water samples for the 2011 first and second quarter sampling events. Ten samples were not collected because the stock ponds were reported as dry. For the groundwater locations, the semiannual report provided sample data for 14 out of

36 possible groundwater samples. Twenty-two samples were not collected because the windmill or well was not operating at the time of sample collection. All reported values for natural uranium and radium-226 were within the respective effluent concentration limits. The inspectors concluded that the licensee had implemented the groundwater and surface water monitoring programs in accordance with Chapter 5 of the license application and License Condition 11.6.

The semiannual report also included results from Satellites 2 and 3 radium filter press effluents which are monitored as one grab sample after selenium treatment. The monitoring results show that none of the radium-226 concentrations in the six samples exceeded the 10 CFR Part 20, Appendix B, effluent concentration limit of 6.00E-8 microcuries per milliliter ( $\mu\text{Ci/ml}$ ).

Water levels are measured on a quarterly basis and groundwater samples are collected on a semiannual basis from the six shallow groundwater monitoring wells located at PSR2. The required monitoring data were obtained and reported in the semiannual report and the sample results continue to be trended by the licensee for a study to resolve Unresolved Item 040-08964/0801-03 (see Section 2.2a of this report).

During the review period, Irrigator 1 did not operate during the monitoring period. In the semiannual report, the licensee included monthly grab samples of the fluid through Irrigator 2 during the month that it operated (June 2011). The radium concentration in one sample exceeded the estimated limit in the original license application but was below the effluent limit in Table 2 of 10 CFR Part 20, Appendix B.

c. Wellfield and Excursion Monitoring

License Condition 12.1 requires, in part, that the licensee maintain documentation on spills of source materials, 11e.(2) byproduct materials, or process chemicals. The licensee is also required to report to the NRC any wellfield excursions, spills, or pond leaks involving source materials, 11e.(2) byproduct materials, or process chemicals that may have an impact on the environment, that is required to be reported to a State or Federal Agency. Within 30 days of notification to the NRC, the licensee is required to submit a written report that details the conditions leading to the spill or incident, corrective actions taken, and the results achieved.

The licensee stated that four spills had taken place since the last inspection. The first spill occurred on May 3, 2011 in MU15A as a consequence of a power and automatic shutdown valve failure at HH15-20 which led to an over injection event. The licensee indicated they left a voicemail with the NRC Project Manager on May 4, 2011. However, the licensee failed to provide a follow-up report on this spill. This failure is a violation (VIO 040-08964/1102-01) of LC 12.1, which requires, in part, that once a notification of a spill is made, the licensee is required to submit a written report documenting the event, corrective actions, and the outcome within 30 days. The licensee also failed to provide NRC with copies of correspondence addressed to the WDEQ, dated May 9, 2011, August 12, 2011 and August 26, 2011, related to the spill at Wellfield 15A. The licensee staff agreed during the inspection they could not find evidence they sent NRC the 30 day report or the three letters to the WDEQ.

The inspectors reviewed the licensee's in-house version of the report of the May 3, 2011, MU15A spill in the wellfield serviced by HH15-20, which was provided to WDEQ on May 9, 2011 but not to NRC. The inspectors also visited the spill location and HH15-20 and interviewed several licensee staff with knowledge of the spill event. The report, location visit and interviews indicated that the spill was caused by a power failure of unknown origin at HH15-20 sometime on the night of May 3, 2011. The power failure shut down all 20 production wells in the HH15-20. The power failure should also have triggered an automatic shutdown of a pressure restrictor valve on the main injection line to the header house to stop injection into the wells. However, this valve, known as a Cla-Valve pressure restrictor, failed to shut down either electronically through a solenoid or mechanically in response to an increase in pressure on the downstream side from loss of production. This valve failure allowed injection to continue into the 38 injection wells serviced by the HH at a licensee estimated rate of 400 gpm.

No automatic alarm was received at satellite building SR-1 to tell the night shift operator that there was a problem. The alarm light on the front of the header house was only equipped with 15 minutes of battery power so no visual alarm was maintained. The over injection apparently continued for the entire night shift. An operator came on the morning shift and noticed a problem with the flow and pressure reports in the wellfield. The operator, however, had no method to identify the source of the problem, so he had to perform a random check of all header houses until he found the valve failure at 8:00 am at HH 15-20. By this time, the over injection into the ore zone had caused a sufficient increase in ore zone aquifer pressure to cause eight production wells to flow at the surface. The size of the surface spill was estimated to be 1500 gallons of pregnant lixiviant with a concentration of 99 parts per million natural uranium. The licensee was able to recover approximately 200 gallons. On May 4, 2011, the licensee staff replaced the valve and returned all the wells in HH15-20 to operation.

Section 3.3 of the licensee's approved license application, states in part, " when operating parameters move outside specified normal operating ranges, an alarm will notify the operator to initiate corrective action to alleviate the problem." The inspectors questioned why no alarm had notified operators of the valve failure and over injection at HH15-20 which led to the spill. The licensee responded that there was a red light alarm on the front of the HH. However, the licensee indicated this alarm only had fifteen minutes of battery power and was not detected. The inspectors noted HH 15-20 is a newer HH with updated design and equipment including a camera and is tied into computer monitoring at SR-1, although no alarm was provided to the operator to enable them to identify the problem at HH15-20 and take corrective actions. This failure to have an alarm that allows an operator to initiate corrective action is a violation (VIO 040-08964/1102-02) of Section 3.3 of the license application.

The inspectors identified one Unresolved Item (URI 040-08964/1102-03) related to the incident in HH 15-20. The licensee has a commitment in Section 3.2.4.7 of the approved license application which states in part, "the surface injection pressures will not exceed the maximum surface pressures posted in each header house". The licensee had not evaluated whether they had exceeded the maximum injection pressure of 110 pounds per square inch (psi) listed on the main injection line at HH15-20 during the over injection event. Section 3.2.4.6 of the approved license application states in part, "During wellfield operations, injection pressure at the injection well heads will not exceed the integrity test pressure." The licensee did not evaluate if they had exceeded the integrity test pressure during the over injection event; however, they indicated that all

injection wells in the wellfield had a pressure relief valve which would open at 150 psig. Also, Section 3.2.4.6 of the approved license application states in part, "Any injection well with evidence of suspected subsurface damage will require a new mechanical integrity test (MIT) prior to the well being returned to service." The licensee had not performed MITs to see if the over injection had damaged the injection wells prior to returning the wells to service the next day. During the inspection, the licensee stated that HH15-20 had been taken out of production and they would MIT the remaining wells impacted by this incident. This Unresolved Item will remain open until the licensee determines if any injection pressures have been exceeded on the HH injection line or at the injection well heads. This information will be reviewed during a future inspection to determine if any violations of the license occurred.

The second spill was reported on May 19, 2011, at a bellhole 1 near Satellite SR-2. The follow up report on May 26, 2011, stated the release resulted from restarting the wells and booster pumps after a power outage and discovering a gasket failure. The release was 790 gallons. The inspectors found this spill was properly reported and handled. The third spill was reported on July 25, 2011. In the follow up report dated July 29, 2011, the licensee stated 53 gallons of injection fluids were accidentally released to a well that was being repaired at the wellhead, when flow was started before the repairs were completed. The inspectors found this spill was properly reported and corrected. The last spill involved the failure of a pumping test water tank in Mine Unit K north which released approximately 35,000 gallons of water to the surface on March 10, 2011. WDEQ was informed on June 8, 2011 and the NRC project manager was notified on June 7, 2011. The 30 day follow up letter was not provided to the NRC. The licensee is being issued a violation (see above) related to failure to report events to the NRC as required by LC 12.1.

License Condition 11.5 requires, in part, that the licensee monitor groundwater at the designated monitoring wells twice a month. The licensee has approximately 1,300 groundwater monitoring wells that are sampled during a typical month using six field sampling personnel. The inspectors reviewed some of the groundwater sampling records and concluded that these records indicated operational groundwater monitoring was being conducted as required by the license.

Two wells, DM-003 and CM-32, were in long term excursion status during the prior inspection. CM-32 went off excursion in April 2011. Since the last inspection, the licensee reported three new wells went in excursion. Well JM-005 was reported on excursion on March 9, 2011, and a follow up report was provided on March 14, 2011. Well DM-010 was reported on excursion on June 08, 2011. However, no required follow up report was provided to NRC. The licensee is being issued a violation (see above) related to failure to report events to the NRC as required by LC 12.1. An excursion at KM-031 was reported to NRC on June 15, 2011, with a follow-up report on June 21, 2011. At the time of the inspection only two wells, DM-003 and DM-010, remained on excursion for the entire licensed area. These wells are believed to be subject to the influence of nearby underground mine workings from previous uranium mine operators not associated with this licensee. The licensee has hired a consultant to evaluate if the current pumping design to correct the excursions at these wells is the appropriate approach.

Aside from this failure to provide follow-up reports for the excursion at DM-010, the inspectors determined that the licensee had conducted the requisite monitoring for the

excursion monitoring program and submitted the required reports within a timely manner pursuant to License Condition 11.5.

Since the last inspection, the licensee reported two separate leak events in the east storage pond. NRC was notified of the first leak into the secondary containment on June 13, 2011. The licensee drained the pond to investigate the leak and repaired a tear in the primary liner on July 7, 2011. Following the repairs, water was returned to the pond. On August 15, 2011, a second leak was discovered in the east evaporation pond sump. The licensee notified the NRC. The pond level was lowered for a second time to examine the leak and repairs were made on August 29, 2011. Water was being returned to the pond at the time of the inspection. NRC inspectors found the leak was reported and corrected in a manner consistent with LC 12.1.

License Condition 10.1.3 requires, in part, that an MIT be performed prior to an injection or recovery well being brought into service and every 5 years thereafter. The inspectors concluded that the licensee has performed MIT tests as required, with the exception of MU 15A wells impacted by the May 3, 2011, spill, pursuant to LC 10.1.3.

#### 4.3 Conclusions

The licensee implemented environmental, groundwater, and surface water monitoring programs in accordance with the license, with two exceptions. One violation was identified related to the failure of the licensee to provide a 30 day spill report to the NRC. One violation was identified related to failure to have an alarm that allows an operator to initiate corrective action. One unresolved item was identified, related to failure to evaluate if well that may have exceeded injections pressures after an incident.

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

#### 5.1 Inspection Scope

Determine if transportation and disposal activities conducted by the licensee were conducted in compliance with regulatory requirements.

#### 5.2 Observations and Findings

##### a. Inspection of Transportation Activities

The inspectors reviewed the licensee's transportation records maintained since the February 2011 inspection. Trucks with tanker trailers are routinely utilized by the licensee to transport resin to and from the satellite buildings and the CPP. The inspectors reviewed selected resin tanker trailer shipping papers and found them to include the pertinent information required by Department of Transportation (DOT) regulations.

License Condition 9.6 requires, in part, that the licensee possess a waste disposal agreement to dispose of 11e.(2) byproduct material at an offsite location. In 2010, the licensee generated a waste disposal contract with a new vendor. Since the previous inspection, twenty-six waste disposal shipments were made to the newly contracted waste disposal site. Material sent for disposal consisted of 11e.(2) contaminated

equipment, such as filters, pipes, and pumps. The inspectors reviewed selected shipping records found them to be complete.

The licensee also ships licensed yellowcake material off site. From January through August 2011, a total of 28 shipments of yellowcake, loaded in 55-gallon drums, were shipped to an out-of-state processing facility. Beginning in January 2011, the licensee began shipping yellowcake to Canada for processing. The licensee has an NRC export license, held by a broker, that authorizes yellowcake to be brought into Canada for conversion into uranium hexafluoride and then returned to the U.S. for future processing. The inspectors reviewed a selected sample of shipping records and found them to be complete and in accordance with DOT and NRC regulations.

During the August 2010 inspection, one violation (VIO 040-08964/1002-01), was identified related to the failure of the licensee to comply with appropriate DOT regulations while transporting licensed material over public highways. Specifically, the licensee shipped water transfer filters and trash classified as 11e.(2) waste from Satellites SR-2 and SR-1 to the CPP without performing radiation or contamination surveys to ensure compliance with DOT requirements. In addition, the license transported radium-226 contaminated filters to an analytical laboratory without verifying compliance with DOT radiation or contamination limits. These examples are violations of 10 CFR 71.5(a), which requires that a licensee who transports licensed material outside of the site of usage comply with the applicable requirements of the regulations appropriate to the mode of transport of the DOT in 49 CFR Parts 170 through 189.

The licensee responded to the violation in letter dated February 23, 2011. NRC staff found the response did not adequately address the violation and requested additional information. Specifically, the licensee did not state how they will transport over public highways water filters and trash classified as 11e.(2) byproduct material from Satellites SR-2 and SR-1 to the CPP using the appropriate DOT requirements. By letter dated June 17, 2011, the licensee stated they had updated the transportation procedures to include shipment of contaminated filters using the appropriate DOT requirements. The inspectors reviewed the procedures and found them to be responsive to the violation. This violation is closed.

b. Solid Radioactive Waste

The inspectors identified one violation (VIO 040-08964/1102-04) related to the location of byproduct storage bins. License Condition 10.1.7 states, in part, that the licensee shall maintain an area within the restricted area boundary for storage of contaminated materials prior to their disposal. The inspectors found that the licensee had two byproduct disposal bins, containing contaminated materials, stored in an unrestricted area adjacent to the Central Processing Plant.

c. Review of Wastewater Treatment Activities

The license application authorizes the licensee to dispose of wastewater at both the Satellites 1 and 2 land application facilities. Prior to discharge to the purge storage reservoirs, the plant wastewater is processed to remove the excess uranium, radium-226, and selenium concentrations in the water. After treatment, the wastewater is sampled to ensure that it meets the criteria specified in the license application as well as WDEQ requirements for land application.

During 2011, the licensee disposed of wastewater at the Satellite No. 2 land application facility, but not the Satellite No. 1 land application facility. The licensee operated Irrigator No. 2 during July-August 2011. In accordance with Tables 5-8 and 5-9 of the license application, the licensee samples the irrigation fluid monthly at the PSR 2 suction line for the irrigator pivot for natural uranium, radium-226, selenium, and other chemical constituents. The licensee's sample results indicate that the natural uranium and radium-226 concentrations were less than the NRC's effluent concentration limits, and the selenium concentrations were less than the WDEQ's limit.

### 5.3 Conclusions

One violation related to failure to follow DOT requirements while transporting licensed material was closed. One violation was identified related to the storage of byproduct storage bins in an unrestricted area. The licensee was transporting radioactive material in accordance with NRC and DOT requirements. The licensee had collected wastewater samples as required by the license application, and the sample results indicated that the fluid met the criteria for disposal by land application.

## 6 **Exit Meeting Summary**

The NRC inspectors presented the preliminary inspection results to the licensee's representatives at the conclusion of the onsite inspection on September 1, 2011. The final exit briefing was conducted by telephone on September 25, 2011. During the inspection, the licensee did not identify any information reviewed by the NRC inspectors as proprietary that was included in the report.

**SUPPLEMENTAL INSPECTION INFORMATION**

**PARTIAL LIST OF PERSONS CONTACTED**

Licensee

B. Berg, General Manager  
D. Moody, Operations Manger  
J. McCarthy, Assistant Radiation Safety Officer  
A. Faunce, Radiation Safety Officer

**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

**ITEMS OPENED, CLOSED, AND DISCUSSED**

Open

040-08964/1102-01	VIO	Failure to provide a 30 day incident report to the NRC
040-08964/1102-02	VIO	Failure to have an alarm for operators to initiate a corrective action
040-08964/1102-03	URI	Failure to evaluate if wells exceeded injections pressures after an incident
040-08964/1102-04	VIO	Failure to store byproduct waste material in a restricted area

Closed

040-08964/1002-01	VIO	Failure to perform radiation and contamination surveys on packages used for shipment of licensed material.
040-08964/0902-01	VIO	Failure to decommission wellfields within 24 months and failure to request an alternate decommissioning schedule

Discussed

040-08964/0801-03	URI	Verify whether PSR2 was leaking into the groundwater
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## LIST OF ACRONYMS USED

ALARA	as low as reasonably achievable
CPP	central processing plant
CFR	<i>Code of Federal Regulations</i>
DAC-hrs	derived air concentration hours
DDW	deep disposal well
bgs	bellow ground surface
DOT	U.S. Department of Transportation
gpm	gallons per minute
HH	header house
HPT	health physics technician
IP	NRC Inspection Procedures
LC	License Condition
MIT	mechanical integrity test
µg/l	microgram per liter
mg/l	milligrams per liter
MU	mine unit
µCi/ml	microcuries per milliliter
ORC	Operational Review Committee
psi	pounds per square inch
PSR	purge storage reservoir
RG	NRC Regulatory Guide
RO	reverse osmosis
RSO	Radiation Safety Officer
SERP	Safety and Environmental Review Panel
URI	unresolved item
VIO	violation
WDEQ	Wyoming Department of Environmental Quality