ENCLOSURE 2

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

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License No.	SMC-1559
Report No.	40-8989/98-02
Licensee:	Envirocare of Utah, Inc.
Facility:	South Clive Facility
Location:	Tooele County, Utah
Dates:	October 5-8, 1998
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Attachments:	1. Supplemental Information 2. Photographs Taken at the Envirocare Facility

EXECUTIVE SUMMARY

Envirocare of Utah, Inc.
NRC Inspection Report 40-8989/98-02

This inspection included a review of site status, management organization and controls, site operations, radiation protection, and the environmental protection program. Also, a followup review was performed of several violations and other issues previously identified by NRC.

Management Organization and Controls

- The onsite organizational structure had not been revised by the licensee since the last inspection. The licensee continued to maintain an effective management structure (Section 2.2).

- The licensee had implemented the conditions of the performance-based license in an effective manner. Improvement was noted in both the administrative and technical areas of the Safety and Environmental Review Panel process (Section 2.3).

- Site procedures had been established in accordance with the conditions of the license, with one exception concerning procedures for the utilization of rail track No. 4. Also, the licensee had reviewed site procedures on an annual basis as required by the license (Section 2.4).

Operations Review

- An extensive site tour was performed, and site operations appeared to be progressing in a safe and orderly manner (Section 3.2).

- The licensee had not routinely returned 11e.(2) wastes received with free standing liquids to the generators and further, the guidance documentation and license commitments regarding the licensee's course of action when shipments are received containing free standing liquids was noted to be inconsistent. An unresolved item was identified and will be referred to the NRC program office to determine whether the licensee had committed to an appropriate course of action when shipments are received with free standing liquids (Section 3.3).

- The inspectors noted that the licensee was handling and storing shipments containing low-level radioactive wastes on a rail track outside of the restricted area, although the licensee had not developed operating procedure guidance for such activities. The licensee's failure to develop standard operating procedures for all activities involving the handling and storage of radioactive wastes was identified as a violation of License Condition 9.6 (Section 3.4).

- The licensee failed to notify the shipper of a leaking railcar in a timely manner because of a weakness in the problem reporting process. This was identified as a non-cited violation since the problem was licensee-identified and corrective actions were taken by the licensee (Section 3.5).

- During recent weeks prior to the inspection, the licensee identified a number of violations related to shipments received. In response to these findings, the licensee appeared to have taken appropriate actions, although problems had been experienced while attempting to obtain water samples when needed for radiological analyses. Corrective actions taken by one generator were not effective in eliminating the root cause of a shipping problem and, consequently, may have resulted in additional shipping violations (Section 3.5).

Radiation Protection

- Radiation protection program areas including employee exposures, routine radiological monitoring and surveys, and respiratory protection activities were found to have been conducted in compliance with the conditions of the license and NRC regulations (Section 4).

Radioactive Waste Management/Environmental Protection

- The inspectors were unable to completely review this program area in part because pertinent records were not available onsite for inspector review. Problems relating to recordkeeping, meeting site specific standards, and analytical lower limits of detection were identified in the groundwater monitoring program area that were representative of previously identified problems. An unresolved item was issued to review licensee actions related to these technical issues in the groundwater monitoring program area (Section 5).

Followup of Previously Identified Issues

- During the review of a previously-identified unresolved item, the NRC concluded that as-built drawings required by the license had been reviewed, stamped, and signed by an individual who was not a certified professional engineer. This issue was identified as a non-cited violation since the problem was licensee-identified and corrective actions were taken by the licensee (Section 6.2).

Report Details

1 Site Status

License SMC-1559 was issued to Envirocare during November 1993. The licensee received the first 11e.(2) waste shipment for disposal during September 1994. Since the last routine inspection conducted in June 1998, the licensee has continued to add material to the 11e.(2) disposal pile. The pile was being constructed in discrete sections and continued to expand in the north and south directions as additional material was being added. As of October 7, 1998, the licensee had received 8,469 shipments of 11e.(2) material and had disposed of 552,750 cubic yards of material in the disposal cell.

2 Management Organization and Controls (88005)

2.1 Inspection Scope

The licensee's organizational structure and management controls were reviewed to determine: (1) whether functional responsibilities and personnel qualifications had been clearly established and fulfilled in accordance with the conditions of the license, and (2) what controls were in place to ensure compliance with NRC requirements.

2.2 Management Organization

The organizational structure requirements are provided in License Conditions 9.3 (which references the license application), 9.9, and 9.10. The NRC inspectors compared the organizational structure in place at the time of the inspection to the structure referenced in the license. The licensee had not changed the onsite and offsite staffs since the last inspection. The inspectors noted however, that some management titles had been changed by the licensee's Safety and Environmental Review Panel (SERP) process without these changes having been incorporated into the license. This was noted to be a violation of minor significance, not subject to formal enforcement action.

2.3 Performance-Based License Review

The NRC inspectors reviewed the licensee's implementation of the performance-based license provisions specified in License Condition 9.4 to ensure that any changes made by the licensee did not negatively impact the licensing basis of the site. The changes made by the licensee under License Condition 9.4 are required to be reviewed and approved by the licensee's SERP. The SERP's summaries of meetings that had been held since the last inspection were reviewed by the inspectors. The review included three SERP meetings which were held since the last NRC inspection in June 1998. All SERP-approved changes were found to be in compliance with the performance-based license.

2.4 Standard Operating Procedures

License Condition 9.6 states, in part, that the licensee shall establish and implement standard operating procedures (SOPs) for all operational activities involving the handling, storing or disposing of radioactive materials. In addition, SOPs shall be established and implemented for non-operational activities to include environmental monitoring, bioassay analysis, and instrument calibration. License Condition 9.8 further states that all existing facility SOPs related to operational and non-operational activities shall be reviewed and documented by the corporate radiation safety officer on an annual basis.

The NRC inspectors reviewed a representative portion of the SOPs during the inspection. All SOPs were found to be technically adequate. The NRC inspectors also confirmed that the SOPs had been reviewed annually by the corporate radiation safety officer in accordance with License Condition 9.8. Overall, the NRC inspectors determined that the licensee had established procedures as required by the license, with one exception. The exception, discussed in further detail in Section 3.4 of this inspection report, involved the handling and storing of radioactive materials on rail track 4 without having established or implemented an operating procedure for this activity.

2.5 Conclusions

The onsite organizational structure had not been revised since the last inspection and was in compliance with the requirements of the license. Also, the licensee had implemented the conditions of the performance-based license in an effective manner. The SERP determinations appear to improve over time in both the administrative and technical areas. Site procedures had been established in accordance with the conditions of the license, with one exception discussed in Section 3.4 of this report. Also, the licensee had reviewed site procedures on an annual basis as required by the license.

3 Operations Review (88020)

3.1 Inspection Scope

The objective of this portion of the inspection was to verify that site activities were being conducted in accordance with applicable regulations and the conditions of the license, and to ensure that operational controls were adequate to protect the health and safety of the workers and the members of the general public.

3.2 Site Operations

A facility tour was performed to observe activities in progress, including the transfer of wastes from intermodal storage containers received by rail car. Overall, work appeared to be progressing in a safe, orderly fashion. Radiation protection and security controls were in effect at the entry points. The licensee was in the process of expanding the

11e.(2) cell for increased disposal operations. Overall, no significant health or safety concern was identified during the site tour, and site operations appeared to be in compliance with the conditions of the license.

During the previous inspection of the 11e.(2) disposal cell, large blocks of debris, including concrete blocks, were observed near the cell. The licensee stated during the tour that this material had been received with some 11e.(2) shipments, but the material was too large to be disposed of in the cell. The licensee had since crushed the material into smaller pieces for disposal within the cell.

Chemical and radiological laboratories were inspected. Personnel were knowledgeable and professional, observing all pertinent safety precautions as well as standard laboratory practices. Equipment was well maintained and calibrated, and all standards were within appropriate limits.

3.3 Control of 11e.(2) Waste Shipments Containing Free Standing Liquids

License Condition 10.6 states that the licensee shall, upon arrival of the waste and before acceptance on site, visually inspect the waste or use the Environmental Protection Agency paint filter liquid test to determine if the waste contains free liquid. The licensee shall not accept any waste containing free liquid for disposal. In addition, the 11e.(2) license application, Section 16, "Facility Operations," states that any container having more than 1 percent free standing liquid will be rejected and will be returned to the generator.

During the inspection, the inspectors attempted to ascertain whether the licensee was performing the required inspections of the wastes for free standing liquids. The inspectors concluded that the licensee was performing the inspections using guidance provided in the Waste Characterization Plan. This Plan, part of Envirocare's Agreement State license application, states that Envirocare will not accept a waste for disposal if a waste is found to contain free liquids. Any wastes which are found to contain free liquids shall be rejected for receipt or disposal, and the waste shall be returned to the generator.

The inspectors determined that the licensee's use of the Waste Characterization Plan in lieu of the 11e.(2) license application was acceptable in this case because the Plan was more conservative than the NRC-approved license application. Specifically, the 11e.(2) license application has an upper limit of 1 percent for free standing liquids, while the Waste Characterization Plan assumes a 0 percent upper limit.

The inspectors noted that the licensee had not routinely returned 11e.(2) wastes received with free standing liquids to the generators. In a letter to the NRC dated July 29, 1998, regarding some shipments received with free standing liquids, the licensee stated, "It is Envirocare's position that the environmentally responsible approach is to not transport the shipments back to the generator due to the potential danger of the spread of contamination." Further, shipment of wastes with free standing liquids back to a generator could be a violation of U.S. Department of Transportation requirements. The question of whether the licensee has committed to an appropriate

course of action when shipments are received with free standing liquids was identified as an unresolved item (URI 40-8989/9802-01). This issue will be referred to the NRC's Office of Nuclear Material Safety and Safeguards for resolution to ensure that the licensee has committed to a proper course of action for shipments received with free standing liquids.

Currently, if the licensee identifies a shipment with free standing liquids, it would immediately notify the generator of the problem. The licensee would then expect the generator to create and implement a corrective action plan that would permanently resolve the problem. If a generator failed to take effective corrective actions, then the licensee could issue a "stop shipment order" which would result in the loss of disposal privileges until corrective actions have been taken that are effective.

The NRC inspectors noted that when the licensee received a shipment containing free standing liquids, the licensee would reprocess the wastes in the restricted area until the wastes no longer contained free standing liquids. This typically involved mixing the wastes with clean sand or clay in a process called solidification. Once the reprocessed waste material passed the free standing liquid test, then the material would be transferred to the 11e.(2) disposal cell.

3.4 Control of 11e.(2) Waste Shipments Located on Rail Track 4

During 1997, the licensee installed a new rail track on the eastern side of the site. This track, referred to as Track 4, was originally intended to be a staging area for empty rail cars being released from the site. The track is located on owner-controlled property outside of the restricted area.

During this inspection, the NRC noted that 32 rail cars containing 11e.(2) wastes were situated on this track. These wastes had been in short-term storage at this location for up to 10 weeks. The area was fenced, but the gates were open and unsecured. Further review by the NRC inspectors revealed that the material on track 4 had been received by the licensee but had not been accepted or rejected for disposal. The material was being stored at this location by the licensee following receipt for eventual transfer into the site restricted area.

During a review of the operational controls for these 32 rail cars, the NRC inspectors noted that neither the license, license application, or site procedures discussed the use of track 4, or any rail track. For example, there were no surveillance requirements for these railcars and no routine surveillances had been conducted. If the railcars had been located inside of the restricted area, the license application specifies that monthly container integrity inspections would be required. During the site tours, the NRC noted material on the tracks beneath 2 railcars on track 4 which indicated that leakage had occurred. This material had not been analyzed by the licensee for contamination and, consequently, represented a potential source of contamination of track 4. This finding indicated that the licensee was not effectively monitoring or controlling wastes at this location. Situations such as this create the potential for long-term problems with future decommissioning and the requirement to maintain records of spills of radioactive

materials or spread of contamination in and around the site in accordance with 10 CFR 40.36(f).

License Condition 9.6(a) states that the licensee shall establish and implement standard operating procedures for all operational activities involving the handling, storage, or disposing of radioactive materials. Contrary to this requirement, the licensee was noted to be handling and storing radioactive materials on track 4, although the licensee did not have procedures for performing such activities. The licensee's failure to have developed procedures or related guidance for the handing and storing of radioactive wastes on track 4 was identified as a violation of License Condition 9.6(a) (VIO 40-8989/9802-02).

The NRC inspectors noted that the material was not located in an area that was easily accessible to members of the public, and the rail cars contained low concentrations of radioactivity. According to the licensee, the average concentration of waste material being received from their primary generator was only 163 picocuries per gram. The average radionuclide concentration in wastes from the second-largest waste generator was only 111 picocuries per gram. Therefore, the wastes did not represent a significant exposure hazard.

During the inspection, the licensee obtained samples of the railcar leakage to ascertain whether the leakage was radioactive waste material. The sample results revealed that the specimens contained radioactive material at background levels. In this particular instance, the railcar leakage apparently was not radioactive waste material.

Immediately after the conclusion of the onsite inspection, the licensee moved all 32 railcars into the restricted area. The licensee then unloaded the waste material from 25 railcars. The licensee planned to unload the remaining 7 railcars in the near future. Also, the licensee committed during the exit briefing to modify site procedures to ensure that any shipments in temporary storage outside of the restricted area receive the same level of attention and surveillance that shipments in storage inside of the restricted area would receive.

The licensee stated during the final exit briefing that they initially thought that the material on track 4 was still in transit. Since the licensee assumed that the material was in transit, operational control of the railcars did not have to be included in the site procedures. However, the NRC inspectors noted that the material could not be considered in transit if the material was under the control of the licensee, and the inspectors concluded that the railcars located on track 4 were under the control of the licensee. To resolve this procedure deficiency, the licensee committed to revise existing site procedures by the end of January 1999 to include written guidance for track 4 operations.

3.5 NRC Notification of Waste Shipment Violations

License Condition 12.5 states that the licensee shall immediately notify the NRC by telephone within 24 hours and by letter within 7 days of receipt of any waste shipment where a violation of applicable regulations or license conditions has been found. Since

the previous inspection, the licensee experienced a number of incidents involving three waste generators that resulted in numerous notifications to the NRC. The NRC inspectors determined that the licensee notified the NRC of each incident as required by the license, but the licensee was not timely with one shipper notification. Also, the NRC inspectors determined that the licensee took appropriate corrective actions in response to the incidents.

The licensee considers the names of their clients to be proprietary information; therefore, this NRC inspection report refers to the three generators as Generators 0659, ZG001, and 4004. These designators are the identification numbers assigned by the licensee to the generators.

a. Generator 0659

This generator routinely ships a significant number of railcars containing 11e.(2) waste material to the licensee. To fulfill U.S. Department of Transportation regulations, the waste material has to be shipped in strong, tight containers. Generator 0659 uses the railcar and its associated cover as the container whereas other generators wrap the material during the railcar loading process so the wrapping material is the container versus the railcar itself.

On October 17, 1997, one leaking railcar was received by the licensee from Generator 0659. During the receipt inspection, the licensee observed a small drip coming from this railcar. Immediate corrective actions included notifying the State of Utah and the generator. Further investigation revealed that this railcar did not contain any free standing liquids. The licensee verbally notified the NRC 3 days later and by letter 7 days later. The licensee subsequently concluded that the event was not a violation and was not reportable because the water apparently did not come into contact with the waste material. The water apparently originated from a void space located at the bottom of this railcar. No fluid sample was obtained and analyzed because the licensee could not collect enough volume for sampling.

On March 18, 1998, nine railcars were received from Generator 0659 that were either leaking or contained free standing liquids. This was the first incident of containers with free standing liquids involving Generator 0659. Acceptance of shipments with free standing liquids would be a violation of License Condition 10.6, while leaking containers may involve a failure on the part of the waste generator to meet the requirements of 49 CFR Part 173 (failure to maintain integrity of strong, tight containers). To meet the reporting requirements of License Condition 12.5, these noncompliances were reported to the NRC by letter dated March 25, 1998.

An investigation was conducted by the generator who concluded that the container lids were not properly sealed. The unsealed lids allowed rain and snow to enter the railcars during shipment to the Envirocare site. Proposed corrective actions included modification of the railcar lids. By letter dated June 10, 1998, the licensee reaffirmed the generator's corrective actions which included repairing, modifying, and sealing the railcar lids to prevent future reoccurrences.

On July 1, 1998, the licensee received one railcar that was observed to be leaking. Water samples indicated that the leaking fluid was not contaminated, and a visual inspection of the shipment did not reveal free standing liquids. The water apparently leaked from the external shell of the railcar and not from the interior of the container. Although the NRC was notified of this event by letter dated July 7, 1998, no violation of NRC or DOT requirements occurred as a result of this incident.

The licensee received two additional leaking railcars on September 9, 1998, from this generator. Further inspection revealed that these two railcars, and a third railcar that was not leaking, contained free standing liquids. Sample results confirmed that the leaking fluids were contaminated. The NRC was notified of these shipping violations by letter dated September 16, 1998.

The licensee suspected that the material itself, and not the railcar lids, was the source of the problem. The licensee thought that the 11e.(2) material was being loaded into the railcars while saturated, and the material settled during shipment. The settling process allowed water to leach to the surface of the load.

However, by letter dated September 18, 1998, the generator concluded that the material did not contain excessive amounts of moisture during loading and the shipments did not contain free standing liquids just prior to departure to the Envirocare site. The generator continued to support the idea that the root cause of the problem was the loose fit of the railcar cover lids. The generator also stated that its repair program so far has resulted in the modification to 128 of 270 covers, and this effort was going to continue until all 270 covers have been modified.

Two additional railcars arrived at the site on September 30, 1998, containing free standing liquids. The licensee discovered the free standing liquids on October 2, 1998, and notified the NRC of these shipping violations by letter seven days later. The licensee and a representative from the generator jointly inspected these railcars, and they concluded that the free standing liquids were not attributable to the integrity of the lids but were most likely due to the initial moisture content of the waste material.

The licensee issued the generator a stop shipment order on October 7, 1998, in accordance with Envirocare's Waste Characterization Plan. By letter dated October 9, 1998, the generator submitted a revised corrective action plan to the licensee. The generator suspected that the material contained more sand than material previously shipped and that absorbent material would be added to the wastes to reduce the moisture content of this sandy waste material. Also, the generator suspected that the method used to add material in the cars (in two piles) may have created low spots that promoted leaching and pooling of moisture. Immediately after the conclusion of the onsite inspection, the licensee lifted the stop shipment order based on the generator's commitments to add absorbent material to the wastes.

The licensee took corrective actions in all shipment discrepancies involving Generator 0659. The licensee issued a stop shipment order to this generator in accordance with the state-approved Waste Characterization Plan although a stop shipment order is not required by the NRC's 11e.(2) license. Further, the generator's initial corrective actions

were apparently ineffective because the modification of the rail car lids was not the solution to the root causes of the free standing liquid problem.

The NRC inspectors noted that this particular generator has shipped several thousand railcars to the licensee. Therefore, these problem shipments were only a small percentage of the overall number of shipments actually received by the licensee. Since each shipment contained only low level radioactive wastes, there did not appear to be a significant radiological hazard to either site personnel or the environment.

b. Generator 4004

The licensee received a shipment of 11e.(2) wastes from this generator on July 29, 1998. The shipment included four railcars that failed the incoming waste receipt inspection because material was identified on the outside of the railcars' strong, tight containers. Radiological sampling indicated that the material was not 11e.(2) waste material. Between August 7-10, 1998, five additional rail cars arrived onsite with material on the outside of the railcars.

The generator was contacted and was asked to provide a corrective action plan detailing how they would ensure that railcars are clean prior to shipment. On August 2, 1998, the generator sent a corrective action plan to the licensee which included their process for ensuring that all railcars leave the site in a clean condition. The corrective actions appeared to have been effective because no additional shipment was received from this generator with material on the outside of the containers.

The NRC was notified of these incidents by letters dated August 6 and 17, 1998. Since the material on the outside of the containers was not radioactive, no violation of NRC or license requirements actually occurred. Therefore, these incidents were not required to be reported to the NRC in accordance with License Condition 12.5.

c. Generator ZG001

On July 10, 1998, the licensee received 11 railcars from this generator containing free standing liquids. Further, one of the railcars was observed to be leaking. According to the licensee, the material was clay-type material that was apparently moist when loaded. The material appeared to harden during transit which allowed the water in the material to settle out. No water sample was obtained from the leaking railcar because the licensee assumed that the water most likely had been in contact with the material. The waste material was mixed with sand or clay at the Envirocare site, retested to ensure that there were no free standing liquids, and permanently discarded in the 11e.(2) disposal cell.

Between July 10 and August 26, 1998, the licensee received 36 additional railcars that were either leaking and/or contained free standing liquids. These railcars were part of the same waste stream as the first 11 railcars. Samples of the leaks were not always obtained, in part, because of the licensee's inability to obtain an adequate volume of sample for analysis. The NRC also noted that at least one sample may have been

accidently contaminated prior to sample analysis with local rocks used to anchor the bucket during the collection process.

The NRC was notified of these shipment violations by letters dated July 16, July 29, August 6, August 17, and September 3, 1998. Actions taken by the licensee included opening the strong, tight containers (the wrapping mate[illegible]hat enclosed the waste materials) to allow the material to dry and requesting a co[illegible]ective action plan from the generator. Corrective actions taken by the generator included adding absorbent material to the wastes and using stronger wrapping material. The generator's corrective actions may have been effective because no leaking containers or containers with free standing liquids arrived at the site between late August and early October 1998. Additional time may be needed to ensure that the corrective actions take by this generator were effective in preventing future problems.

A second potential violation of 49 CFR Part 173 requirements was identified by the licensee on September 19, 1998. During the release of Generator ZG001's railcars, radioactive material was identified in at least 10 railcars' void spaces, specifically the box beams located on the ends of the railcars. The material was identified as 11e.(2) wastes, suggesting that the strong, tight containers may have failed to maintain integrity during shipment. The NRC was notified of this issue by telephone on September 21, 1998 (the next business day), and by letter dated September 28, 1998.

Since there appeared to be only two transportation incidents related to this generator, the licensee had not issued a stop shipment order to this particular generator at the time of the onsite inspection. Envirocare's Waste Characterization Plan specifies a "three strikes" policy that had not been breached by this particular generator. As stated previously, the Waste Characterization Plan is part of the Agreement State license application, but the licensee selectively implements portions of this Plan during 11e.(2) waste operations. Actions specified in the Waste Characterization Plan are as or more restrictive than the NRC license with regard to receipt of liquid-bearing wastes. Although this particular issue had not been fully resolved by the end of the inspection period, proposed corrective actions included modification of the railcars or use of thicker wrapping material.

During September 1998, the NRC requested that the licensee prepare a list of recent notifications for use during the October 1998 onsite inspection. While the licensee was performing this review, it identified that it had failed to notify the shipper of a leaking railcar that was received on July 10, 1998, from Generator ZG001. The shipper was subsequently notified on September 22, 1998, and the NRC was notified of this problem by letter the following day.

The license application Section 16, "Facility Operations," states that if there are any problems with the integrity of an incoming shipment, the problems will be immediately reported to the shipper. The licensee's failure to immediately notify the shipper of the July 10, 1998, leaking railcar was identified as a violation of License Condition 9.3 which references the license application. However, this non-repetitive, licensee-identified and corrected violation is being treated as a non-cited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy (NCV 40-8989/9802-03).

A non-cited violation was previously identified for the licensee's failure to notify the NRC in a timely manner after the identification of a potential violation of U.S. Department of Transportation requirements (NRC Inspection Report 40-8989/98-01). The cause of the incident was attributed to a site employee filling out a problem report in error. Because of this documentation error, the licensee notified the State of Utah rather than the NRC.

The most current notification error appeared to be the result of a slightly different problem, an incomplete problem reporting process. The licensee's failure to notify the shipper was partially attributable to the problem report not including a cue to the author to ascertain whether a shipper notification was required. During the onsite inspection, the licensee took corrective actions which included revising the problem report format to clearly indicate whether State of Utah, NRC, shipper, or generator notifications were necessary and providing blanks on the forms for documentation of these notifications.

In summary, the corrective actions taken in response to the first non-cited violation would not reasonably have been expected to prevent the second violation from occurring since the causes of the two violations appeared to be different.

3.5 Conclusions

Site activities were conducted in accordance with the conditions of the license, with two exceptions. The licensee's failure to develop SOPs for all activities involving the handling and storage of wastes was identified as a violation of the license. The licensee's failure to notify a shipper about a leaking container in a timely manner was identified as a non-cited violation.

The licensee's guidance documents contained discrepancies related to the requirements for free standing liquids. At the end of the inspection, the licensee committed to take actions to resolve these discrepancies, including revision of site documents to maintain consistency between the documents. The NRC inspectors also noted that the licensee selectively used state-approved programs such as the Waste Characterization Plan when handling NRC-regulated wastes. This was not a safety issue because the state-approved programs appeared to be more conservative than NRC license requirements.

During recent weeks prior to the inspection, the licensee identified a number of violations related to shipments received. In response to these findings, the licensee appeared to have taken appropriate actions, although problems had been experienced attempting to obtain water samples when needed for radiological analyses. Corrective actions taken by one generator were not effective in eliminating the root cause of a shipping problem and, consequently, may have resulted in additional shipping violations. However, the overall number of problem shipments being received from the licensee's 11e.(2) waste generators appeared to be declining since September 1998.

4 Radiation Protection (83822)

4.1 Inspection Scope

The licensee's radiation protection program was reviewed to verify compliance with the conditions of the license as well as the requirements of 10 CFR Part 20.

4.2 Employee Exposures

The licensee's occupational monitoring program was reviewed by the inspectors. The licensee issued thermoluminescent dosimeters to site employees and contractors to monitor for external radiation doses. The dosimeters had been exchanged and analyzed quarterly. The inspectors noted that the occupational doses were well below the limits established in 10 CFR 20.1201.

To help control the ingestion or inhalation of radioactive materials, the licensee had established an extensive routine radiological survey program. The surveys included both ambient gamma radiation levels and contamination swipe samples. The NRC inspectors noted that the licensee had performed the surveys in accordance with Table 17.8, "Routine Monitoring and Surveys," provided in the license application. The licensee had maintained extensive records of these routine surveys, and portions of the records were reviewed during this inspection. The inspectors concluded that the licensee had established a survey program that met the intent of the license application.

4.3 Respiratory Protection Program

License Condition 9.15 addresses the requirements for the respiratory protection program fit testing and training requirements. The inspector reviewed the training and qualification of the personnel responsible for conducting fit tests as well as spot checked training and qualification records for several respirator qualified workers. In addition, the inspectors interviewed several workers and observed practical demonstrations of respiratory protection usage. The inspectors concluded the licensee was implementing an effective respiratory protection program in accordance with 10 CFR Part 20, Subpart H, "Respiratory Protection and Controls to Restrict Internal Exposure in Restricted Areas."

4.4 Conclusions

Radiation protection program areas including employee exposures, routine radiological monitoring and surveys, and respiratory protection activities were found to have been conducted in compliance with the conditions of the license and NRC regulations.

5 Radioactive Waste Management and Environmental Protection (88035, 88045)

5.1 Inspection Scope

Portions of the environmental monitoring program were reviewed to assess the effectiveness of the licensee's program and to evaluate the effects, if any, of site activities on the local environment.

5.2 Ground Water Monitoring Program

a. Record Availability

License Condition 11.1 requires the licensee to implement groundwater monitoring programs throughout the duration of the license. However, the onsite inspection could not confirm compliance with all portions of License Condition 11.1 in part because little of the 1998 groundwater monitoring data was available at the site or at the company offices in Salt Lake City during the inspection. The data records had been sent to a company consultant for review and analysis. Therefore, this portion of the inspection effort will be performed during a future inspection.

b. Compliance with Site Specific Standards

Prior to the inspection, the third and fourth quarter 1997 groundwater quality data was reviewed. After the onsite inspection, the licensee transmitted copies of first and second quarter 1998 groundwater monitoring data to the inspectors. During the third and fourth quarters of 1997, all 12 point-of-compliance wells exceeded the NRC-approved site-specific standards for arsenic as listed in Table STD-1 attached to the license. Furthermore, all but two wells (GW-24 and GW-29) exceeded these standards during the first and second quarters of 1998. Inspection of the 1996 Annual Radiological Monitoring report showed that five wells continuously exceeded the site specific standards since May 1996, with 5-11 wells exceeding the standards in any given quarter. Therefore, the site specific standards for arsenic appear to have been exceeded for at least 24 months.

License Condition 10.3 states, in part, the licensee shall assume full responsibility for cleaning up the groundwater of all hazardous constituents detected at the point of compliance in concentrations that exceed the limits specified in License Condition 11.1. Additionally, the licensee shall undertake corrective action to clean up groundwater contamination if and when required, no later than 18 months from the date when exceedance of a standard has first been discovered, and without taking credit for any delays caused by disagreements as to the source of contamination.

The licensee claimed, in response to a previous NRC violation, that the 11e.(2) disposal cell is not the source of the arsenic and that the increased concentrations are the result of natural variations in background water quality. However, License Condition 10.3 further states it shall be assumed that the 11e.(2) disposal facility is the source of all of the hazardous constituents detected in the point-of-compliance wells unless it can be

demonstrated to the NRC's satisfaction, based on field and laboratory data, that the 11e.(2) facility is not the source of particular constituents. NRC shall have the final decision concerning any claim by the licensee that the 11e.(2) facility is not the source of a particular constituent that is detected at the point of compliance.

The NRC, however, has not formally concluded that the 11e.(2) facility is not the source of arsenic at the point of compliance. Also, the licensee is contemplating submittal of a license amendment request to change the groundwater compliance standards. Therefore, this subject area will be reviewed by the NRC during a future inspection.

c. Compliance With Background Concentrations

Inspection of third and fourth quarter 1997 groundwater monitoring data and the first and second quarter 1998 data showed that the laboratory lower limits of detection exceeded the NRC-approved background concentrations listed in Table STD-1 for 18 of the 26 water quality constituents required to be monitored by License Condition 11.1.b. In other words, these laboratory sample results cannot be used to judge compliance with the background standards for nickel, acetone, selenium, 2-butanone, silver, chloroform, cadmium, carbon disulfide, chromium, 1,2-dichloroethane, cyanide, methylene chloride, fluoride, naphthalene, lead, 2-methylnaphthalene, mercury, and diethylphthalate. The inspectors could not clearly determine if the laboratory used the correct methods or protocols to perform the groundwater sample analyses. Also, the licensee was not able to explain or defend these analytical limits of detection during the onsite inspection or during the exit briefing.

The three potential problem areas listed above relating to (1) recordkeeping, (2) meeting site-specific standards, and (3) analytical lower limits of detection were discussed with the licensee during the exit briefing. The inspectors also noted that the NRC had identified related problems with the groundwater monitoring program since 1996. The licensee stated that it was contemplating options such as re-evaluating the baseline groundwater quality values or alternate concentration limits. Further, some of the licensee's previous actions or requests appear to still require NRC program office approval.

In conclusion, these problem areas will be reviewed during a future NRC inspection to provide the licensee time to resolve these recurring groundwater monitoring problems. An unresolved item (URI 40-8989/9802-04) will be tracked to review this program area during a future inspection focused on the groundwater monitoring program.

5.3 Conclusions

The NRC was unable to completely review this program area in part because pertinent records were not available onsite for inspector review. Also, problems were identified in the groundwater monitoring program area that were representative of problems identified during previous NRC inspections. The licensee committed during the exit briefing to take actions as necessary to resolve these problems. An unresolved item was issued to allow the NRC to ascertain whether the issues in question are acceptable items, deviations, or violations of NRC requirements.

6 Followup (92701)

6.1 NRC Information Notice 98-30: Effect of Year 2000 computer problem on NRC licensees and certificate holders. This Notice was issued to alert licensees of the potential problems that may occur with their computer systems and associated software as a result of the upcoming change to the new century. During this inspection, the licensee's actions taken in response to the Year 2000 issue were reviewed.

In summary, the licensee was aware of the problem and had a copy of the Information Notice and related literature from other sources. The licensee had committed to transferring all data handling systems to Year 2000 Compliant software within a month of the exit brief. Licensee representatives were confident that they still had sufficient time to study and resolve any technical issues that may be encountered in the future.

6.2 (Closed) Unresolved Item 40-8989/9801-01: As-built drawing review. During the previous NRC inspection, an inspector reviewed the as-built drawings of the 11e.(2) disposal cell to determine if the drawings had been updated annually in accordance with License Condition 9.16. Shortly after the onsite inspection, the licensee notified the NRC that the person who reviewed, stamped, and signed the most recent as-built drawings was not a professional engineer. This circumstance was identified as an unresolved item pending further NRC review.

By letter dated July 13, 1998, the licensee committed to a corrective action plan that included establishing a list of all drawings and certifications made by this employee, performing a review and recertification of the drawings by a licensed professional engineer, and resubmittal of the revised drawings to the NRC. By letter dated August 7, 1998, the licensee resubmitted seven drawings related to the 11e.(2) disposal cell to the NRC. The most current 11e.(2) disposal cell drawings were reviewed by the NRC inspectors during this inspection, and the drawings were noted to be thorough. Further, the drawings had been certified by a bona-fide licensed professional engineer.

The NRC inspectors noted that the licensee's recent 10 CFR Part 70 license application also contained drawings that had been certified by the same individual who previously certified the 11e.(2) drawings. The licensee did not update and resubmit these drawings to the NRC because the licensee's Part 70 license application had been previously rejected by the NRC and returned to the licensee. The licensee stated during the inspection that if it decided to resubmit the Part 70 license application, the application would contain updated and properly certified drawings as appropriate.

License Condition 9.16 states that the licensee shall complete as-built drawings of the facility on an annual basis, and the as-built drawings shall be certified by a professional engineer. Contrary to this requirement, the licensee submitted as-built drawings to the NRC during 1997 and 1998 that were not certified by a professional engineer. The NRC did not contest the technical validity of these drawings during previous inspections, but the NRC inspectors were not aware that the individual who certified the drawings was not a professional engineer. The licensee's failure to submit drawings that were not properly certified by a professional engineer was identified as a violation of License

Condition 9.16. Corrective actions taken by the licensee included termination of the employee who incorrectly certified the drawings and re-submittal of key drawings to the NRC. This violation was brought to the NRC's attention by the licensee, it involved isolated acts of a low-level individual, and it was addressed by appropriate remedial action. Therefore, this non-repetitive, licensee-identified and corrected violation is being treated as a non-cited violation consistent with Section VII.B.1 of the NRC Enforcement Policy (NCV 40-8989/9802-05).

6.3 (Closed) Violation 40-8989/9801-02: Failure to follow procedures. During the previous inspection, the NRC inspectors became aware that about 33,000 gallons of low activity radioactive waste water had been discharged on the 11e.(2) cell during May 1998. The disposal of waste water containing state-regulated radionuclides onto the NRC-regulated disposal cell was determined to be a violation of both the state and NRC licenses. The licensee's response letter to this violation claimed that the cause of the incident was operator error. Corrective actions taken by the licensee included termination of the individual who authorized the placement of the water on the 11e.(2) disposal cell and retraining of pertinent site personnel.

A contributing cause of the incident was related to the licensee's reliance on temporary water storage containers called "Frac Tanks." The water that was placed on the 11e.(2) disposal cell came from these temporary storage tanks. Since the incident, the licensee has reduced the number of onsite Frac Tanks. The water in these tanks was being disposed in the site evaporation ponds, and the tanks were being decontaminated for free release from the site. The NRC inspectors observed fewer Frac Tanks inside of the restricted area during this inspection than during the previous inspection.

The licensee did not sample and analyze the water that was placed on the 11e.(2) disposal cell, and the licensee did not obtain any soil samples from the cell. Therefore, the licensee could not determine exactly how much, if any, state-regulated wastes were placed on the 11e.(2) disposal cell. Water from similar Frac Tanks was analyzed, and the water was noted to contain radionuclides from the uranium and thorium chains. These radionuclides are also found in 11e.(2) wastes. The water samples also revealed measurable amounts of potassium-40 (100-200 picocuries per liter) and cesium-137 in concentrations just above the minimum detectable activity range of around 4 picocuries per liter. Based on water sample results obtained from other Frac Tanks, the licensee most likely did not add excessive amounts of state-regulated radioactive wastes onto the NRC-regulated disposal cell.

Since the last NRC inspection, the licensee added about 100,000 cubic yards of material to the 11e.(2) disposal cell. If the licensee did add any state-regulated waste material to the NRC-regulated disposal cell during May 1998, the state-regulated material is now buried under tons of 11e.(2) wastes. Therefore, this incident did not appear to be an environmental or occupational radiological safety hazard.

6.4 (Open) Violation 40-8989/9801-05: Failure to perform confirmatory sampling. NRC Inspection Report 40-8989/98-01 dated July 24, 1998, identified a violation based on a failure to perform confirmatory groundwater sampling. Inspection of first and second quarter 1998 groundwater quality data showed that during the first quarter of 1998, the

NRC-approved background concentrations listed in Table STD-1 were exceeded for barium in Well GW-19A, selenium in Well GW-2, and fluoride in Well GW-28. During the second quarter, NRC-approved background concentrations were exceeded for lead and molybdenum in Well GW-27 and for selenium in Wells GW-25 and GW-26. Compliance with uranium, radium, and thorium could not be determined because the information was not included in the 1998 data sheets. However, conversations by the inspectors with site personnel revealed that exceedences of the background concentrations for uranium had occurred.

The groundwater sampling records were being checked and reanalyzed by an outside consultant during the inspection and were not available for inspector review. Further, the inspectors could not determine from site interviews if the confirmatory sampling and reporting requirements of License Condition 11.9(g) had been met. Therefore, the followup review for this violation and the corrective actions taken by the licensee in response to this violation will be performed during a future inspection.

6.5 (Open) Violation 40-8989/96201-01: Failure to establish and implement a revised site operating procedure. During the January 1997 inspection, the NRC identified that the license application had been revised but the corresponding implementing procedures had not been updated accordingly. The licensee's failure to establish and maintain site procedures was identified as a violation. By letter dated April 24, 1997, the licensee stated that all changes to the license, license application, and license amendments would be reviewed by the quality assurance officer (now referred to as the quality assurance manager) to determine applicability to existing procedures. This review was deemed necessary to ensure that the requirements and guidance provided in the license, license application, and standard operating procedures were consistent with each other.

By letter dated March 12, 1998, the licensee committed to perform a review of past changes to the license and license application no later than May 1, 1998. By letter dated May 1, 1998, the licensee informed the NRC that this review had been completed. During this inspection, the NRC inspectors confirmed that the licensee had completed the review and had implemented a process to ensure that any proposed procedure changes were to be compared to the license and license application prior to implementation.

However, during this inspection, the inspectors noted that Amendment 14 to License SMC-1559 dated July 24, 1998, implemented a change that had not been incorporated into the license application. Specifically, the NRC approved a change to License Condition 10.8.f which increased the concentration limits of the waste constituents. The inspectors noted that this change had not been incorporated into Section 16, "Facility Operations," of the license application. The out-of-date concentration levels were identified in two locations in Section 16.

The inspectors' discovery suggested that the licensee had not developed an effective method for performing procedure and license application reviews whenever the license has been revised by the NRC. In other words, the licensee had effectively implemented a "bottom up" review approach, but had not implemented a "top down" review approach.

Therefore, this violation will remain open pending the licensee's implementation of a program to ensure that all license changes have been incorporated into lower tier documents.

6.6 (Closed) NRC Event Number 34775: Report of radioactive spill at Envirocare facility. On September 15, 1998, the NRC Operations Center was notified of a potential spill of radioactive materials at the Envirocare site. Generator No. 0749 had shipped a number of drums to Envirocare for permanent disposal. The drums contained radioactive waste material with low level amounts of special nuclear material. During the receipt inspection, Envirocare noted that one drum appeared to have leaked an unidentified fluid during shipment. A damp spot was identified on the trailer floor in the vicinity of this drum. Further investigations identified a second drum containing free-standing liquids although this drum did not leak while in transit.

A radiological survey revealed measurable amounts of alpha-beta contamination around the leaking drum on the trailer floor. The total alpha contamination was about 1900 disintegrations per minute per 100 square centimeters (dpm/100 cm^2), while the removable contamination was 200-500 dpm/100 cm^2 alpha and 400-900 dpm/100 cm^2 beta. Envirocare personnel subsequently decontaminated the trailer.

The leaking drum was placed in an overpack container, while the drum containing free-standing liquids was already in an overpack container. The entire shipment was rejected by Envirocare and returned to the generator. Corrective actions taken by the generator appeared ineffective because a subsequent shipment also consisted of containers with free-standing liquids. As of October 8, 1998, the generator has sent a corrective action plan to Envirocare, but the generator has not sent any additional shipments to Envirocare for disposal.

The leaking drum was identified by Envirocare, who reported the incident to the State of Utah and the carrier. The carrier then notified the NRC and the U.S. Department of Transportation. Although the carrier reported the incident to the NRC, this issue was not required to be reported because the wastes were state-regulated low activity radioactive waste materials and not NRC-regulated 11e.(2) byproduct materials.

7 Exit Meeting Summary

The inspectors presented the preliminary inspection results to the representatives of the licensee at the conclusion of the inspection on October 8, 1998. Also, a final exit briefing was held by telephone with representatives of the licensee on November 10, 1998. Licensee representatives acknowledged the findings as presented. The licensee did not identify any information reviewed by the NRC inspectors as being proprietary information other than the names of some of their generators.

SUPPLEMENTAL INFORMATION

Attachment 1

PARTIAL LIST OF PERSONS CONTACTED

Licensee

G. Copeland, Vice President of Compliance and Licensing
A. Erichsen, Site Radiation Safety Officer
J. Garcia, Assistant Site Manager
J. Heckman, Assistant Radiation Safety Officer
C. Kirk, Quality Assurance Assistant
M. Ledoux, Corporate Radiation Safety Officer
R. Poulson, Hydrogeologist
B. Reifsnyder, Corporate Quality Assurance Manager

ITEMS OPENED, CLOSED AND DISCUSSED

Opened

40-8989/9802-01	URI	determine whether the licensee has committed in its license to a proper course of action for shipments received with free standing liquids
40-8989/9802-02	VIO	failure to establish and implement procedures for handling and storage of radioactive wastes on track 4
40-8989/9802-03	NCV	failure to immediately notify shipper of leaking rail shipment
40-8989/9802-04	URI	perform followup review of groundwater program and licensee's corrective actions to resolve long-standing groundwater problems
40-8989/9802-05	NCV	failure to submit as-built drawings certified by a professional engineer

Closed

40-8989/9801-01	URI	as-built drawing review
40-8989/9801-02	VIO	failure to follow procedures
40-8989/9802-03	NCV	failure to immediately notify shipper of leaking rail shipment
40-8989/9802-05	NCV	failure to submit as-built drawings certified by a professional engineer

Discussed

40-8989/96201-01	VIO	failure to establish and implement a revised site operating procedure
40-8989/9801-05	VIO	failure to perform confirmatory sampling

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
dpm/100 cm^2	disintegrations per minute per 100 square centimeters
IFI	inspection followup item
NCV	non-cited violation
PDR	Public Document Room
SERP	Safety and Environmental Review Panel
SOP	standard operating procedure
URI	unresolved item
VIO	violation

ATTACHMENT 2

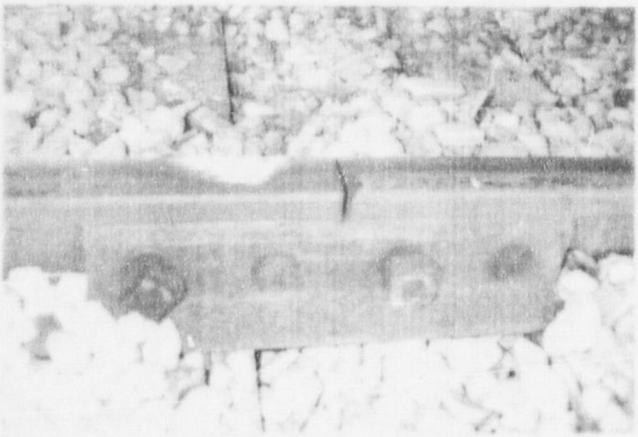

Figure 1 Residue Beneath a Rail Car on Track No. Four

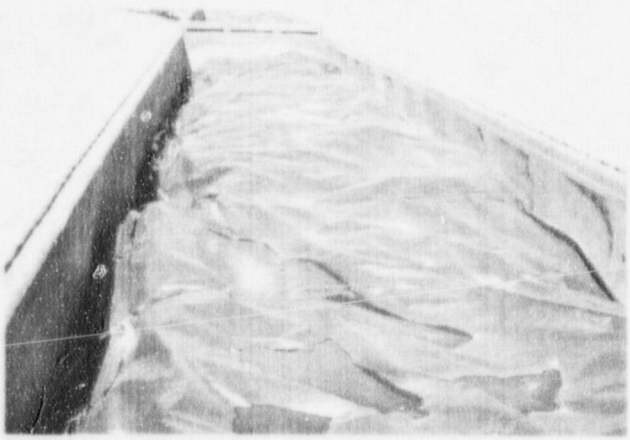

Figure 2 "Burrito Bag" Liner in Rail Cars

Figure 3 Leaking Rail Car from Vendor

Figure 4 11e(2) Cell Construction

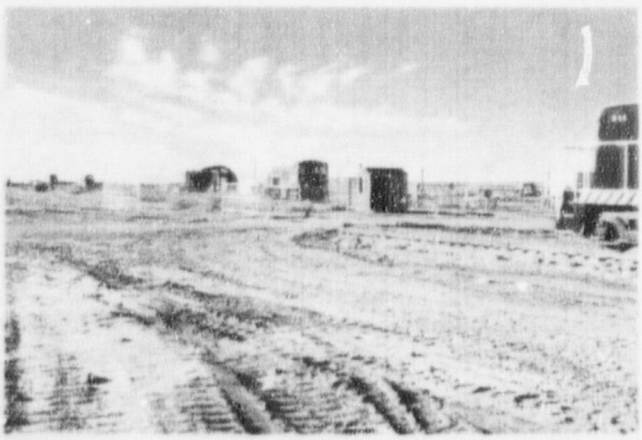

Figure 6 Rail Systems Showing Track No. Four Exiting to the Left

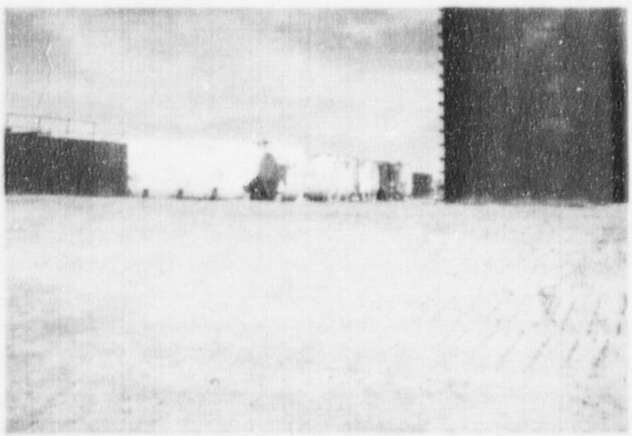

Figure 5 "Frac Tanks" Used for Temporary Water Storage On-Site