

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION

REGION IV

URANIUM RECOVERY FIELD OFFICE

NRC Inspection Report: 40-8027/89-04

License No.: SUB-1010

Docket No.: 40-8027

Licensee: Sequoyah Fuels Corporation  
Oklahoma City, Oklahoma 73125

Facility: Gore Uranium Conversion Facility

Inspection at: Gore, Oklahoma

Inspection Conducted: November 6-8 1989

Inspector:

Pete J. Garcia Jr.  
Pete J. Garcia, Jr.

11/21/89  
Date

Approved By:

Ramon E. Hall  
Ramon E. Hall, Director  
Uranium Recovery Field Office  
Region IV

11/21/89  
Date

Inspection Summary

Inspection conducted on November 6-8, 1989 (Report 40-8027/89-04)

Areas Inspected: Routine, unannounced inspection of uranium conversion operations and radiation safety program including Operations Review; Transportation of Radioactive Materials; and Waste Generator Requirements.

The inspection involved a total of 18 inspector-hours onsite by one inspector.

Results: Within the three areas inspected, no apparent violations or deviations were identified. The licensee's programs in the areas inspected are adequate to safely conduct the required activities.

DETAILS1. Persons Contacted

- R. Graves; President
- \*S. Knight; Vice President - Administration
- \*R. Adkisson; Vice President - Business Development
- J. Mestepey; Vice President - Operations
- L. Lacey; Manager, Nuclear Licensing and Environmental Compliance
- \*M. Nichols; Manager, Health and Safety
- \*K. Simeroth; Supervisor, Health Physics
- \*J. Carr; Manager Waste Processing and Disposal
- G. Barton; Manager, Training and Procedures
- M. Chilton; Manager, UF<sub>6</sub> Area
- C. Grosclaude; Supervisor, Waste Shipping
- T. Cox; Supervisor, Accountability
- S. Smith; Supervisor, Uranium Concentrate Handling

\*Denotes attendance at exit briefing.

The inspector also interviewed various site personnel during the course of the inspection.

2. Licensee Action on Previous Inspection Findings

(Closed) Open Item (40-8027/8801-01) - Elevated fluoride levels in samples from reduction facility exhaust stack. The inspector verified that the installation of a new scrubber on the stack has significantly reduced fluoride levels in the stack effluent.

(Closed) Open Item (40-8027/8901-02) - The need to establish written procedures for disposal of low-level radioactive waste. The inspector determined that the required written procedures had been established prior to any shipments of low level waste.

3. Operations Review

The UF<sub>6</sub> reduction facility resumed operation on September 4, 1989 following a lengthy shutdown. The inspector reviewed the N-800 series of procedures pertaining to operation of the reduction facility. The review indicated that the procedures had all been approved by SFC management in July and August 1989. The inspector also reviewed training documentation and determined that all reduction facility operators had received recent training concerning the operation of the facility.

The inspector also reviewed fluoride stack effluent sampling data. The average fluoride concentration for September 1989 was 3.22 ug/l, while the October 1989 average was 2.8 ug/l. These values are significantly lower than the 14 ug/l average during previous operations prior to installation of a new scrubber.

During the inspection, a site unusual event was declared due to a release of hydrogen fluoride (HF) from an HF vaporizer. Maintenance work was underway to remove one of the three vaporizers from the process circuit and replace it with the auxiliary vaporizer. As a result of this work, a bleed valve had been left open to relieve system pressure for protection of workers. Although heating of the vaporizers had ceased, residual heat resulted in a continued buildup of pressure in the third vaporizer. This pressure caused the failure of a rupture disk and a release of HF to a header pipe which exhausts to a scrubber. However, because all three vaporizers feed to the common header pipe, some of the HF was forced into the piping for the vaporizer being taken off-line and was released into the building environment through the open bleed valve.

Facility personnel donned self contained breathing apparatus<sup>1</sup> and protective clothing to close the bleed valve and terminate the release. The licensee estimated that less than 100 pounds of HF was released. To prevent a recurrence of the release, SFC is considering separating the venting systems for the three vaporizers so that they independently vent to the scrubber.

The inspector determined that the unusual event was not reportable to the NRC in accordance with the licensee's emergency contingency plan which is referenced in the license.

No apparent violations or deviations were identified by the inspector.

#### 4. Transportation of Radioactive Materials

The inspector reviewed documentation concerning site transportation activities. These include product shipments of  $UF_6$  and depleted  $UF_4$ , waste shipments of low level waste and crushed yellowcake drums for disposal, and the receipt of yellowcake product and cylinders containing depleted  $UF_6$ . The inspector also observed the receipt and unloading of a shipment of yellowcake drums contained in a sea van freight container which had originated in Australia.

A review of written procedures for all transportation activities indicated that the procedures had been approved by facility management within the time period specified in the license. The review also indicated the need for revisions to two procedures as specified below:

- (a) Procedure N-280-1, "UF<sub>6</sub> Product Handling and Shipping" - license condition references need to be updated to reflect changes made in the license as reissued by NRC Headquarters on July 7, 1989.
- (b) Procedure N-210-3, "Shipping Empty Yellowcake Drums" - the procedure states that the truck driver will be responsible for determining if the cargo needs bracing (Section 4.2.8). The

procedure should be revised to state that this determination is the shipper's responsibility, as specified in 49 CFR 173.425(b)(6).

The need to revise the above procedures was identified as an open item (40-8027/8904-01).

The inspectors also reviewed shipping papers included with radioactive material shipments. The review indicated that the papers were generally adequate and contained the required information. However, the inspector noted that the proper shipping names as specified in 49 CFR 172.101 were not generally used and unnecessary and potentially misleading information was often included on the forms. Specifics are provided below:

(a) Papers for filled  $UF_6$  cylinders

1. Form includes blocks stating "Stability Class III" and "Waste Form Class LSA" - This information is irrelevant for non-waste shipments.
2. Form includes block entitled "Fissile Class Transport Index" which is completed with "TI=10" - Natural uranium is not fissile, TI data is not necessary for LSA shipments, and a TI=10 appears to be too high for natural uranium.

(b) Papers from  $DUF_4$  shipments

1. Same as (a)(1) above.
2. Proper shipping name should be as follows:  
"Radioactive Material, LSA, NOS  
UN 2912  
in the form of depleted uranium tetrafluoride"

(c) Papers for  $DUF_6$  cylinders containing heels

1. Same as (a)(1) above.
2. Same as (a)(2) above, except that block states "TI=6."
3. Proper shipping name should be as follows:  
"Radioactive Material, LSA, NOS  
UN 2912  
in the form of empty, Model 48G cylinders containing residual heels (approx. \_\_\_ pounds per cylinder) of depleted uranium hexafluoride."

The need to revise the shipping papers was identified as an open item (40-8027/8904-02).

The inspectors reviewed records of gamma and alpha surveys performed for shipments and observed surveys of the empty yellowcake transport vehicle prior to release. No areas of concern were noted.

No apparent violations or deviations were identified by the inspector.

5. Waste Generator Requirements

The licensee has made only one shipment of radioactive waste to a low-level disposal site since the previous inspection which evaluated this area. The shipment, which was sent to the Hanford disposal site, was made in early November.

Waste shipments had previously been made by a contractor. However, SFC is now performing all shipping activities. The inspector reviewed the written procedures established for shipping of radioactive waste. The procedures, which were completed in August and October 1989, were thorough and complete.

The inspector did note, however, that Procedure G-316, "Low Level Waste Weighing and Uranium Content Measurement," contains two tables of data which are used to determine the approximate uranium content of barrels containing the low level waste as required by 10 CFR 20.311(b). One table contains the correlations between survey instrument readings and the uranium content and also includes the formula which was used in obtaining the correlations. The second table contains correction factors to adjust for the weight of the barrel.

These tables were developed by Kerr McGee personnel years ago, and documentation regarding the procedures used to establish the methodology was not available. This information should be retained onsite to document that the methodology results in a reasonable estimate of the uranium content of the barrels. The need to maintain this information onsite was identified as an open item (40-8027/8904-03).

No apparent violations or deviations were identified by the inspector.

6. Exit Interview

The inspector met with licensee representatives at the conclusion of the inspection on November 8, 1989. The inspector summarized the purpose, scope, and findings of the inspection.