40-8027

RE: 90170-N

TO: C. Haughney

SEQUOYAH FUELS CORPORATION

October 19, 1990

**Certified Mail**
**Return Receipt Requested**

Mr. Robert D. Martin
Regional Administrator
U.S. NUCLEAR REGULATORY COMMISSION
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

RE: Raffinate Sludge Concentration System Shutdown
10 CFR 20.405 Report

Dear Mr. Martin:

On September 22, 1990, Sequoyah Fuels Corporation (SFC) notified NRC that operation of its Raffinate Sludge Concentration System had been shutdown to investigate the integrity of its centrate collection sump and to perform necessary repairs. Notification was made because potential leakage of low concentrations of licensed material to the ground below the sump was possible, and because the system would be out-of-service for a period greater than 24 hours.

The centrate collection sump had been emptied and cleaned out for inspection. At approximately 11:30, 9/22/90, liquid was observed to be leaking back into the sump at a rate estimated to be less than one gallon per hour. Initial sample results indicated the uranium concentration to be less than 0.01 g/l, pH = 8.1, and nitrate concentration = 437.4 mg/l.

The NRC Operations Center was notified of the situation at 1343 hours that afternoon and copies of a written notification were transmitted by facsimile to the Operations Center and to the NRC Region IV office. Please find attached a written report of this situation as required by 10 CFR 20.405(a)(1).



Hwy 10 & I-40 P.O. Box 610 Gore, Oklahoma 74435 Telephone (918) 489 5511 Facsimile (918) 489 5620

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Should you have any questions on this matter, please contact me at 918/489-3207.

Best Regards,

Lee R. Lacey
Vice President
Regulatory Affairs

LRL:nv

Enclosure

xc: Charles J. Haughney, NRC - NMSS
Keith E. Asmussen, General Atomics

**SEQUOYAH FUELS CORPORATION**

**RAFFINATE SLUDGE CONCENTRATION SYSTEM SHUTDOWN**

**(10 CFR 20.405)**

1. **Estimate of each individual's exposure**:

The SFC health physics staff has evaluated potential exposures of personnel involved in operational, inspection, and repair activities related to the centrate collection sump. Based on the evaluation, personnel exposure to airborne radioactivity is considered minimal, and direct radiation exposure is considered to be negligible.

2. **Levels of radiation and concentrations of radioactive material involved**:

Samples taken from the liquid leaking into the centrate collection sump:

Sample 1
Uranium = <0.01 g/l
pH = 8.1
Nitrate = 437.4 mg/l

Sample 2
Uranium = <0.01 g/l
pH = 9.2
Nitrate = 552 mg/l

Sample 3 *
Thorium-230 = 13 ± 2 pCi/l
Radium-226 = 3.3 ± 0.7 pCi/l

* analyzed by a commercial laboratory

Samples taken from a floor coring adjacent to the sump:

Uranium in water = <0.01 g/l
Uranium in sand = <400 ug/g
Nitrate in water = 99.9 mg/l

3. **The cause of the exposure levels or concentrations**:

The centrate collection sump was cleaned out and inspected. It was found to be leaking in two places.

4. **Corrective steps taken or planned to prevent recurrence**:

The defects in the centrate collection sump were repaired and the entire sump was coated with Tufco R-19 vinyl ester material. The sump was re-inspected and placed back in service.