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**SEQUOYAH FUELS CORPORATION**

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May 29, 1987

RETURN ORIGINAL TO PDR, HQ.

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. R. Dale Smith, Director  
 Uranium Recovery Field Office  
 Region IV  
 U.S. Nuclear Regulatory Commission  
 P. O. Box 25325  
 Denver, Colorado 80225

RE: License SUA-1387; Docket 40-8768  
 Semi-Annual ALARA Audit

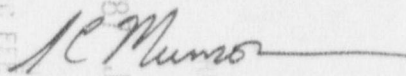
Dear Mr. Smith:

Condition 26 of License SUA-1387 requires the Radiation Safety Officer (RSO) to perform an ALARA audit on a semi-annual frequency. In compliance with this requirement, the semi-annual ALARA review covering the period November, 1986 through April, 1987 was conducted by Scott C. Munson (RSO) on May 20, 1987. The results of that audit are attached.

All facility operations were being done according to license conditions and in accordance with the ALARA philosophy.

If you have any questions concerning this ALARA report, please call me at (405) 270-2544.

Sincerely,



Scott C. Munson  
 Radiation Safety Officer

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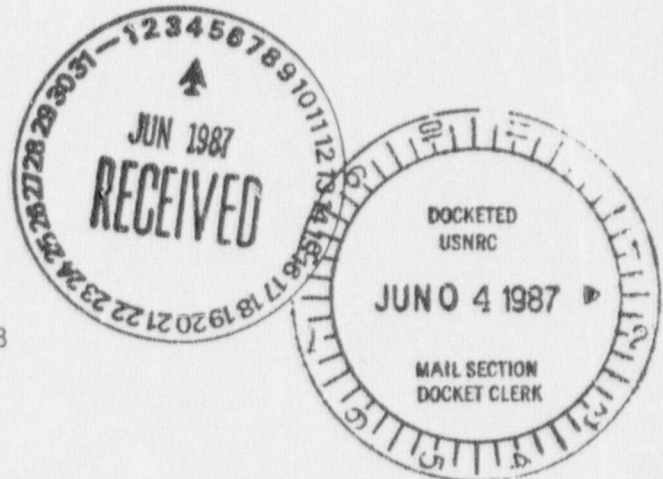
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Attachment

xc: C. Burdick  
 J. Collins  
 S. Emerson  
 M. Freeman  
 E. Goltra  
 K. Holman  
 E. Orrell  
 J. Randolph  
 J. Stauter  
 E. Still  
 H. Whitacre

**DESIGNATED ORIGINAL**

Certified By May C. Hood

**FEE NOT REQUIRED**

87-684

ALARA REVIEW  
License SUA-1387  
May 29, 1987

I. SUMMARY

The Eleventh Semi-Annual ALARA Review was conducted in accordance with Condition 26 of License SUA-1387 at the uranium in-situ leach operations site on May 20, 1987.

II. RECOMMENDATIONS

No recommendations were made for this report period.

III. DETAILS (LICENSE CONDITION 26)

26.1 Bioassay Results

Forty-five (45) urine samples were submitted during this report period (November, 1986 through April, 1987).

<u>Number of Samples</u>	<u>Uranium Concentration ugU/l</u>
44	<5
1	9

None of the samples exceeded the investigation action level of 15 ugU/l in urine.

There were 17 Quality Assurance (QA) samples submitted. The analysis of the 15 ugU/l samples averaged 14.2 ugU/l and the 30 ugU/l samples averaged 29.1 ugU/l. Individual QA sample results are within thirty percent ( $\pm 30\%$ ) of the "true" value, as specified in the facility bioassay procedure.

26.2 Exposure Data

(a) External

<u>Fourth Quarter 1986</u>		<u>First Quarter 1987</u>	
<u>Persons</u>	<u>mrem</u>	<u>Persons</u>	<u>mrem</u>
20	<10	13	<10
		4	10-20
		2	21-50
		1	95

External exposures continue to be low. The individual receiving 95 mrem during the first quarter of 1987 was an operator assigned the responsibility of unloading the filter press. A work assignment change at the facility now rotates each day shift operator through the duty of unloading the filter press. Operators will be on a two month rotation.

(b) Internal

The November, 1986 through April, 1987 statistics for time-weighted exposures to airborne uranium for the job classifications involved are:

<u>Job</u>	<u>Monthly Average MPC Hours</u>	<u>Highest MPC Hours Per Month</u>
Operator	5.5	12
Maintenance	1.7	7.2

No protection factor for respirator use has been applied.

Internal exposures continue to be low, with no significant upward trend observed.

(c) Radon Daughters

Two individuals received 0.1 WLM exposure during the November, 1986 through April, 1987 period. These were the only measurable exposures received.

26.3 Safety Meetings and Training

No new employees were hired during the six-month reporting period. Safety topics concerning radiological health were discussed with operating personnel on four (4) occasions during the reporting period. Topics included contamination control, use of special work permits, IX plant exits (using only designated locations) and radon sampling instrumentation.

26.4 Daily Inspection Log Entries and Monthly Summary Reports

The RST's log for the report period noted that some cleaning of the area floors was required based on alpha survey results. The RST's monthly report summarizes the health physics activities, monitoring data and industrial safety and hygiene activity information.



26.5 In-Plant Radiological Survey and Environmental Monitoring Data and Contamination Surveys

(a) Contamination Surveys

There were 450 alpha survey readings taken in both the controlled and uncontrolled areas of the plant. Eating areas, change rooms, and controlled areas were surveyed weekly. Work permits and some routine operations will occasionally require an alpha contamination survey. Wipe tests are included in this type of monitoring.

Smearable contamination exceeding 2,000 dpm/100cm<sup>2</sup> requires decontamination in controlled areas outside of the yellowcake press area. There were a total of two (2) occasions during the reporting period when the removable contamination criterion for cleanup was exceeded. These areas were promptly cleaned and resurveyed. There were no occasions when the contamination criterion of 500 dpm/100 cm<sup>2</sup> was exceeded in an uncontrolled area.

Personnel exiting the change room sign a log after they alpha "frisk" themselves prior to entering the uncontrolled area of the building. During each quarter, the RST randomly "frisks" personnel leaving the change room. These unannounced inspections were performed on January 15, 1987 and April 6, 1987. The RST "frisks" showed no individuals with contamination present.

(b) Gamma Monitoring

The exposure rates on contact with ion exchange columns and at the fenceline of the yellowcake storage area are provided below:

<u>Quarter</u>	<u>Surface Exposure Rate(mR/hr)</u>	
	<u>IX Column</u>	<u>Fenceline Yellowcake Storage Area</u>
4th Quarter 1986	2.5	2.2
1st Quarter 1987	0.8	2.4

Exposure rates in the process area averaged 0.1 mR/hr.

(c) Air Monitoring

There were 252 samples taken for airborne uranium concentration. Radon daughter measurements are done weekly.

<u>Area</u>	<u>Average Value</u>	<u>Highest Value</u>
Yellowcake Filter Press (Uranium - Nat)	0.07 MPC	2.5 MPC
General Plant (Radon Daughter)	0.04 WL	0.44 WL

The concentration values for airborne uranium and radon daughters for the report period are within the historical range of values for the facility. The general plant radon daughter results include samples collected in the water treatment plant. The water treatment plant sample results have not been included in previous ALARA reports, although the measurements have always been taken and worker exposure evaluated. A maximum value of 0.44 MPC was obtained from a sample collected at the water treatment plant during the winter when minimal ventilation was provided. A procedure has been established to keep the ceiling vents open during both winter and summer periods. This action was taken by facility management to maintain exposures to ALARA.

(d) Environmental Radon

Radon monitoring results at location D-1 for the September 25, 1986 - January 16, 1987 and January 16, 1987 - March 31, 1987 exposure periods were 0.50 pCi/l and 0.30 pCi/l, respectively. This represents no significant change from historical monitoring results.

(e) Performance of Exposure Control Equipment

Survey instruments were all functioning properly and had up-to-date calibration records. The PM tube from one of the alpha survey instruments was broken and required repair. The sample counting equipment is operating properly.

26.6 Surveys Required by Radiation Work Permits

There were 19 special work permits issued during the reporting period for which radiation surveys were required.

26.7 Reports of Overexposures

There were no overexposures.

26.8 Procedure Review

All operating procedures have been reviewed and updated by facility personnel. The procedures will be forwarded to the Corporate office for review in the near future.