

DISTRIBUTION

Docket File 40-1341  
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 URFO r/f

40-1341/GRK/86/05/21/2

- 1 -

JUN 02 1986

URFO:GRK  
 Docket No. 40-1341  
 SUA-816, Amendment No. 22  
 04001341430E

Tennessee Valley Authority  
 Manager of Nuclear Licensing  
 5N 157B  
 Lookout Place  
 1101 Market Street  
 Chattanooga, Tennessee 37401-2801

Gentlemen:

The Uranium Recovery Field Office, has completed its review of the ground water monitoring program submitted by cover letter dated April 30, 1986. As noted in the enclosed memorandum, the staff has determined that your proposed monitoring program, as modified, will be sufficient to determine the ground water quality at the Edgemont site. The staff has also utilized this licensing opportunity to revise your source material license in its entirety.

Therefore, the Uranium Recovery Field Office is prepared to reissue within 30 days, Source Material License SUA-816 by deleting License Condition Nos. 13, 22 and 23 as well as revising License Condition Nos. 2, 10, 11, 12, 14, 15, 18, 19, 24, 25 and 27 as shown below. Please review the enclosed draft license. If it meets with your approval, please indicate your acceptance of the revised license with written confirmation to this office.

2. 5N 157B  
 Lookout Place  
 1101 Market Street  
 Chattanooga, Tennessee 37401-2801

10. The licensee shall immediately notify the USNRC, Uranium Recovery Field Office, by telephone of any accident or unusual occurrence which results in an uncontrolled release of radioactive materials, or of any unusual conditions which if

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not corrected could lead to such releases. This requirement is in addition to the requirements of 10 CFR Part 20.

11. The licensee is authorized to accept for disposal radioactive material associated with the Department of Energy cleanup of Edgemont, South Dakota vicinity properties.
12. The licensee shall conduct decommissioning and tailings reclamation activities in accordance with Sections 2.2.2, 4.2, and 4.3 of the "Final Environmental Statement Related to the Decommissioning of the Edgemont Uranium Mill, dated June 1982" (FES) as modified by the following license conditions. Whenever the words "will," "would," or "should" are used in the above cited text, they shall denote a requirement. The following are specific exceptions to the requirements of the FES:
  - A. Diversion channel cleanup shall be as outlined in the licensee's submittal of May 24, 1983.
  - B. Pond No. 10 shall be utilized as outlined in the licensee's submittals dated September 6, 1983, September 19, 1983, October 27, 1983, and January 4, 1984. The radiological control procedures of License Condition No. 25 shall be followed in lieu of those proposed in the licensee's submittal of September 6, 1983.
  - C. Cleanup of the surface runoff drainage system associated with the haul road, shall be as proposed in the licensee's submittal of November 22, 1983.
  - D. Contaminated material transported to the disposal site shall be by truck. The licensee shall adhere to their submittals dated October 25, 1983, and January 28, January 31, July 1, and September 19, 1983, regarding mitigation of fugitive dust impacts.
14. The licensee shall implement the monitoring programs described in Section 4.2 of the FES; the licensee's December 29, 1982 submittals, and Enclosure B of the licensee's November 2, 1982 submittal with the following exceptions:

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- A. The licensee shall locate the nonradiological surface water quality samplers identified as Cheyenne River Control and Cottonwood Creek Control stations as stated in Section C.1 of the monitoring report referenced in their letter dated June 28, 1983.
- B. The licensee shall relocate the disposal site spoil pile runoff sediment sampling location as stated in their letter dated October 27, 1983.
- C. The licensee shall modify the fish and benthic organism monitoring program as stated in their submittal dated December 21, 1983.
- D. The licensee shall perform either radon or radon progeny monitoring at the five offsite radiological air monitoring stations utilizing either the alpha track or active radon progeny sampling detectors, respectively, as stated in their submittal dated February 5, 1985.
- E. The licensee shall perform nonradiological surface water quality sampling for turbidity and the required parameters, if necessary, as stated in their February 5, 1985 submittal.
- F. The licensee shall comply with the lower limits of detection as per the HASL-300 method as stated in their February 5, 1985 submittal for the analysis of samples collected pursuant to the environmental monitoring program.

Notwithstanding the above, the licensee shall implement a ground water monitoring program by July 15, 1986, which monitors wells M2, M7, M8, M11, M12, M13, M14, M102 and M103 for As, Cl, NO<sub>3</sub>, Se, SO<sub>4</sub>, pH, TDS, Conductivity, U-nat and Ra-226 as well as water levels. Sampling shall be performed on a monthly frequency for the initial year and semiannual thereafter. Termination of sampling shall require prior approval by the USNRC.

The results of all effluent and environmental monitoring required by this license shall be reported in accordance with 10 CFR 40, Section 40.65, with copies of the report sent to the

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USNRC, Uranium Recovery Field Office. Monitoring data shall be reported in the format shown in Attachment A to SUA-816, "Sample Format for Reporting Monitoring Data." The data shall be evaluated for trends, and any significant deviations will be noted and discussed in the associated report.

15. The licensee shall implement a program to minimize fugitive dust as outlined in Section 4.3.1 of the FES although the licensee is not required to maintain vehicular speed limits. This program shall include written operating procedures to control dusting from the mill site, haul roads and disposal site. The material being hauled in trucks shall be either sprayed with a dust suppressant or covered. The effectiveness of the control method used shall be evaluated and documented by monthly inspections as well as evaluations of the monitoring data by the Radiation Safety Officer. The results of monitoring, inspections and mitigative measures shall be reported in writing to the resident manager of the decommissioning operations within thirty (30) days of each inspection.
18. Before engaging in any activity not previously assessed by the USNRC, the licensee shall prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not assessed or that is greater than that assessed, the licensee shall provide a written evaluation of such activities and obtain prior approval of the USNRC in the form of a license amendment.
19. The licensee shall construct the disposal site in accordance with recommendations and specifications contained in Section 5 of their submittal dated September 19, 1983, Report No. 10; however, an inspector shall not be required at the stockpile or borrow sites. Notwithstanding the above, the licensee shall:
  - A. Construct the perimeter liner from clay and compact it to 95 percent of the standard Proctor density at water contents ranging not more than 4 percent above or below optimum moisture content.

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- B. Compact the embankment to at least 95 percent of standard Proctor maximum dry density at the respective specified moisture contents.
  - C. Construct the perimeter drainage system in accordance with their submittals dated June 19 and December 20, 1984.
  - D. Install the Cell 1 settlement measurement devices in accordance with their submittal dated April 9, 1985, with the following exceptions:
    - 1. All base plates shall be made of metal.
    - 2. The type and location of emplaced building rubble and contaminated debris shall be accurately recorded.
    - 3. The base plates shall be buried a minimum of five (5) feet below the elevation of the surface of the deposited materials.
    - 4. A control survey point shall be established, concurrently with the establishment of the settlement devices, in a location not influenced by construction activity or equipment.
  - E. Construct the disposal site cover, utilizing clay or weathered shale, in accordance with the statements and representations contained in submittals dated March 3 and April 3, 1986.
24. The licensee shall develop cleanup plans for Cottonwood Creek and the Cheyenne River in the immediate site vicinity. These plans shall be submitted to the USNRC, Uranium Recovery Field Office for review and approval within six (6) months prior to initiation of cleanup.
25. The licensee shall adhere to the statements, representations and conditions contained in their Health Physics Manual (HPM) submitted by letter dated September 30, 1983, as revised by letters dated January 16, 1984, October 30, 1984, and April 10, 1985. Anywhere the words "should" or "will" are used in the HPM, they shall denote a requirement. In addition to the requirements of the HPM, the Radiation Safety Officer and

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Health Physics Technicians shall attend at least one (1) week of refresher training related to their duties at least once every two (2) years.

27. The licensee shall conduct an annual ALARA audit of the radiation safety program and submit a written report to the licensee's senior management. The report shall summarize at least the following:
- A. Employee exposure records (external and internal time weighted calculations).
  - B. Bioassay results.
  - C. Inspection log entries and summary reports of daily, weekly and semi-monthly inspections.
  - D. Documented training program activities.
  - E. Radiation safety meeting reports.
  - F. Radiological survey and sampling data.
  - G. Reports on overexposure of workers submitted to USNRC or State.
  - H. Operating procedures that were reviewed during this time period.

The report should specifically discuss the following:

- 1. Trends in personnel exposures for identifiable categories of workers and types of operational activities.
- 2. Whether equipment for exposure control is being properly used, maintained and inspected.
- 3. Recommendations on ways to further reduce personnel exposures from uranium and its daughters.

A copy of the ALARA audit report shall be sent to the USNRC, Uranium Recovery Field Office, within one (1) month of issuance to the licensee's senior management.

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The effect of this amendment is to incorporate a revised ground water monitoring program into Source Material License SUA-816 as well as revise other license conditions.

All other conditions of this license shall remain the same. The license is being reissued in its entirety to incorporate the revisions specified above.

The issuance of this amendment was discussed between your Mr. Belvin and Mr. Konwinski of my staff on May 21, 1986.

FOR THE NUCLEAR REGULATORY COMMISSION

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R. Dale Smith, Director  
Uranium Recovery Field Office  
Region IV

Enclosures: Draft Source Material License SUA-816  
Staff Memorandum

OFC	URFO	URFO	URFO			
NAME	GRK	EHawkins	RDSmith			
DATE	86/05/29	5/30/86	6/2/86			

## MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

## Licensee

1. Tennessee Valley Authority

5N 157B

2. Lookout Place

1101 Market Street

Chattanooga, Tennessee 37401-2801

3. License number

SUA-816, Amendment No. 22

Until NRC determines that

4. Expiration date decommissioning is adequate

5. Docket or  
Reference No.

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6. Byproduct, source, and/or  
special nuclear material7. Chemical and/or physical  
form8. Maximum amount that licensee  
may possess at any one time  
under this license

Byproduct Material

Residual contamination  
from previous and  
currently licensed  
activities9. Authorized Place of Use of licensee's uranium mill site, Edgemont, S.D., and  
tailings disposal site located in Sects. 8 and 17, T9S, R3E10. The licensee shall immediately notify the USNRC, Uranium Recovery Field Office,  
by telephone of any accident or unusual occurrence which results in an  
uncontrolled release of radioactive materials, or of any unusual conditions which  
if not corrected could lead to such releases. This requirement is in addition to  
the requirements of 10 CFR Part 20.11. The licensee is authorized to accept for disposal radioactive material associated  
with the Department of Energy cleanup of Edgemont, South Dakota vicinity  
properties.12. The licensee shall conduct decommissioning and tailings reclamation activities in  
accordance with Sections 2.2.2, 4.2, and 4.3 of the "Final Environmental  
Statement Related to the Decommissioning of the Edgemont Uranium Mill, dated  
June 1982" (FES) as modified by the following license conditions. Whenever the  
words "will," "would," or "should" are used in the above cited text, they shall  
denote a requirement. The following are specific exceptions to the requirements  
of the FES:A. Diversion channel cleanup shall be as outlined in the licensee's submittal  
of May 24, 1983.



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- B. ~~Item No. 10~~ shall be utilized as outlined in the licensee's submittals dated September 6, 1983, September 19, 1983, October 27, 1983, and January 4, 1984. The radiological control procedures of License Condition No. 25 shall be followed in lieu of those proposed in the licensee's submittal of September 6, 1983.
- C. Cleanup of the surface runoff drainage system associated with the haul road, shall be as proposed in the licensee's submittal of November 22, 1983.
- D. Contaminated material transported to the disposal site shall be by truck. The licensee shall adhere to their submittals dated October 25, 1983, and January 28, January 31, July 1, and September 19, 1983, regarding mitigation of fugitive dust impacts.
13. Deleted by Amendment No. 22.
14. The licensee shall implement the monitoring programs described in Section 4.2 of the FES; the licensee's December 29, 1982 submittals, and Enclosure B of the licensee's November 2, 1982 submittal with the following exceptions:
- A. The licensee shall locate the nonradiological surface water quality samplers identified as Cheyenne River Control and Cottonwood Creek Control stations as stated in Section C.1 of the monitoring report referenced in their letter dated June 28, 1983.
  - B. The licensee shall relocate the disposal site spoil pile runoff sediment sampling location as stated in their letter dated October 27, 1983.
  - C. The licensee shall modify the fish and benthic organism monitoring program as stated in their submittal dated December 21, 1983.
  - D. The licensee shall perform either radon or radon progeny monitoring at the five offsite radiological air monitoring stations utilizing either the alpha track or active radon progeny sampling detectors, respectively, as stated in their submittal dated February 5, 1985.
  - E. The licensee shall perform nonradiological surface water quality sampling for turbidity and the required parameters, if necessary, as stated in their February 5, 1985 submittal.
  - F. The licensee shall comply with the lower limits of detection as per the HASL-300 method as stated in their February 5, 1985 submittal for the analysis of samples collected pursuant to the environmental monitoring program.

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Notwithstanding the above, the licensee shall implement a ground water monitoring program by July 15, 1986, which monitors wells M2, M7, M8, M11, M12, M13, M14, M102 and M103 for As, Cl, NO<sub>3</sub>, Se, SO<sub>4</sub>, pH, TDS, Conductivity, U-nat and Ra-226 as well as water levels. Sampling shall be performed on a monthly frequency for the initial year and semiannual thereafter. Termination of sampling shall require prior approval by the USNRC.

The results of all effluent and environmental monitoring required by this license shall be reported in accordance with 10 CFR 40, Section 40.65, with copies of the report sent to the USNRC, Uranium Recovery Field Office. Monitoring data shall be reported in the format shown in Attachment A to SUA-816, "Sample Format for Reporting Monitoring Data." The data shall be evaluated for trends, and any significant deviations will be noted and discussed in the associated report.

15. The licensee shall implement a program to minimize fugitive dust as outlined in Section 4.3.1 of the FES although the licensee is not required to maintain vehicular speed limits. This program shall include written operating procedures to control dusting from the mill site, haul roads and disposal site. The material being hauled in trucks shall be either sprayed with a dust suppressant or covered. The effectiveness of the control method used shall be evaluated and documented by monthly inspections as well as evaluations of the monitoring data by the Radiation Safety Officer. The results of monitoring, inspections and mitigative measures shall be reported in writing to the resident manager of the decommissioning operations within thirty (30) days of each inspection.
16. The licensee shall establish a program to develop written procedures and instructions to control decommissioning activities including environmental and radiological monitoring. These written procedures shall be developed prior to starting the associated activity.
17. Deleted by Amendment No. 22.
18. Before engaging in any activity not previously assessed by the USNRC, the licensee shall prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not assessed or that is greater than that assessed, the licensee shall provide a written evaluation of such activities and obtain prior approval of the USNRC in the form of a license amendment.
19. The licensee shall construct the disposal site in accordance with recommendations and specifications contained in Section 5 of their submittal dated September 19, 1983, Report No. 10; however, an inspector shall not be required at the stockpile or borrow sites. Notwithstanding the above, the licensee shall:

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- A. Construct the perimeter liner from clay and compact it to 95 percent of the standard Proctor density at water contents ranging not more than 4 percent above or below optimum moisture content.
- B. Compact the embankment to at least 95 percent of standard Proctor maximum dry density at the respective specified moisture contents.
- C. Construct the perimeter drainage system in accordance with their submittals dated June 19 and December 20, 1984.
- D. Install the Cell 1 settlement measurement devices in accordance with their submittal dated April 9, 1985, with the following exceptions:
1. All base plates shall be made of metal.
  2. The type and location of emplaced building rubble and contaminated debris shall be accurately recorded.
  3. The base plates shall be buried a minimum of five (5) feet below the elevation of the surface of the deposited materials.
  4. A control survey point shall be established, concurrently with the establishment of the settlement devices, in a location not influenced by construction activity or equipment.
- E. Construct the disposal site cover utilizing clay or weathered shale, in accordance with the statements and representations contained in submittals dated March 3 and April 3, 1986.
20. The licensee shall determine the extent of residual contamination at the mill site and establish cleanup criteria for removal of this material in compliance with the standards contained in 40 CFR 192.32(b). This information, and the basis for the licensee's determination, shall be submitted to the USNRC, Uranium Recovery Field Office, for review and approval at least nine (9) months prior to the initiation of final reclamation.
21. The licensee shall determine the extent of, and shall cleanup windblown tailings and contaminated soil in the Cottonwood community and "windblown tailings areas" (FES Section 2.2.2.6) in accordance with the procedures outlined in Sect 2.2.2.6 of the FES. Supportive information and action levels developed for the Cottonwood community cleanup shall be submitted for NRC review and approval at least nine (9) months prior to implementation of cleanup operations in the area.
22. The licensee shall reclaim all disturbed areas of the millsite, Cottonwood Creek, haul road, and disposal site in accordance with the reclamation plan described in



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Sections 2.2.2.7, 2.2.2.8 and 2.2.2.9 of the FES as modified by the staff's recommendations presented in Section 2.2.3.8 of the FES.

23. Deleted by Amendment No. 22.
24. The licensee shall develop cleanup plans for Cottonwood Creek and the Cheyenne River in the immediate site vicinity. These plans shall be submitted to the USNRC, Uranium Recovery Field Office for review and approval within six (6) months prior to initiation of cleanup.
25. The licensee shall adhere to the statements, representations and conditions contained in their Health Physics Manual (HPM) submitted by letter dated September 30, 1983, as revised by letters dated January 16, 1984, October 30, 1984, and April 10, 1985. Anywhere the words "should" or "will" are used in the HPM, they shall denote a requirement. In addition to the requirements of the HPM, the Radiation Safety Officer and Health Physics Technicians shall attend at least one (1) week of refresher training related to their duties at least once every two (2) years.
26. Prior to termination of this license, the licensee shall provide for transfer of title to byproduct material and land including any interests therein (other than land owned by the United States or the State of South Dakota) which is used for the disposal of such byproduct material or is essential to ensure the long term stability of such disposal site to the United States or the State of South Dakota, at the State's option.
27. The licensee shall conduct an annual ALARA audit of the radiation safety program and submit a written report to the licensee's senior management. The report shall summarize at least the following:
  - A. Employee exposure records (external and internal time weighted calculations).
  - B. Bioassay results.
  - C. Inspection log entries and summary reports of daily, weekly and semi-monthly inspections.
  - D. Documented training program activities.
  - E. Radiation safety meeting reports.
  - F. Radiological survey and sampling data.
  - G. Reports on overexposure of workers submitted to USNRC or State.



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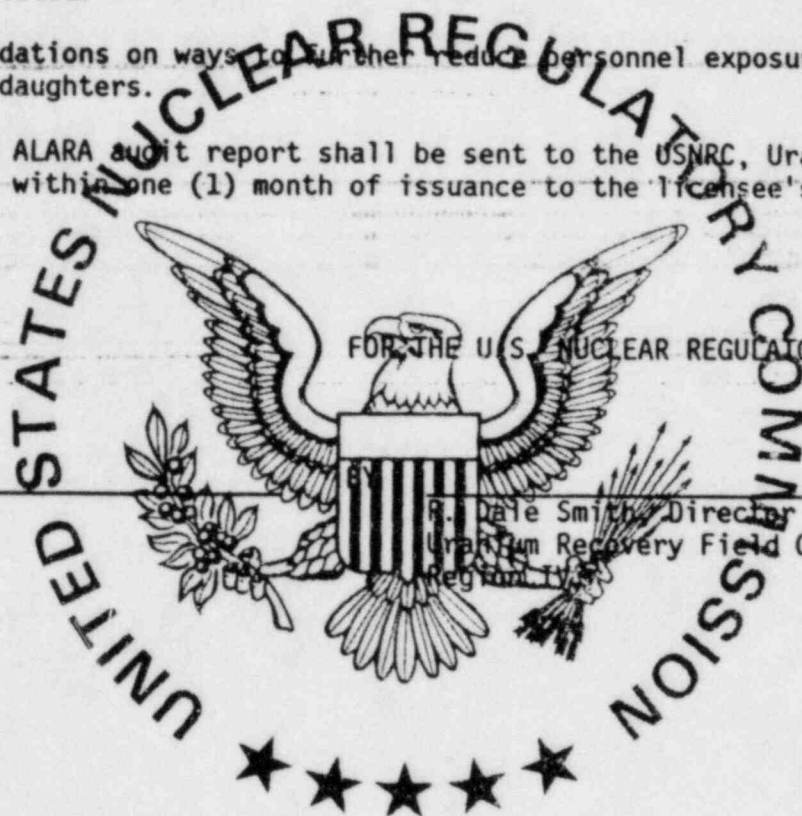
H. Operating procedures that were reviewed during this time period.

The report should specifically discuss the following:

1. Trends in personnel exposures for identifiable categories of workers and types of operational activities.
2. Whether equipment for exposure control is being properly used, maintained and inspected.
3. Recommendations on ways to further reduce personnel exposures from uranium and its daughters.

A copy of the ALARA audit report shall be sent to the USNRC, Uranium Recovery Field Office, within one (1) month of issuance to the licensee's senior management.

Dated: \_\_\_\_\_



R. Dale Smith, Director  
Uranium Recovery Field Office  
Region IV

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H. Operating procedures that were reviewed during this time period.

The report should specifically discuss the following:

1. Trends in personnel exposures for identifiable categories of workers and types of operational activities.
2. Whether equipment for exposure control is being properly used, maintained and inspected.
3. Recommendations on ways to further reduce personnel exposures from uranium and its daughters.

A copy of the ALARA audit report shall be sent to the USNRC, Uranium Recovery Field Office, within one (1) month of issuance to the licensee's senior management.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Dated: \_\_\_\_\_

BY

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R. Dale Smith, Director  
Uranium Recovery Field Office  
Region IV

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