

OFFICIAL RECORD COPY MATERIALS LICENSE

Amendment No. 20

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, 36, 39, 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		In accordance with the letter dated October 28, 1996	
1. Tennessee Valley Authority President, TVA Nuclear and Chief Nuclear Officer		3. License Number	01-06113-04
2. 1101 Market Street 6A Lookout Place Chattanooga, Tennessee 37402-2801		is amended in its entirety to read as follows:	
		4. Expiration Date	September 30, 2003 (Extended)
		5. Docket or Reference No.	030-03572 (01-06113-05)
6. Byproduct, Source, and/or Special Nuclear Material	7. Chemical and/or Physical Form	8. Maximum Amount that Licensee May Possess at Any One Time Under This License	
A. Any byproduct material with Atomic Nos. 1 through 96, inclusive, except:	A. Any	A. Not to exceed 370 MBq (10 mCi) per radionuclide, and 1.85 GBq (50 mCi) total, except;	
(1) Any byproduct material with Atomic Nos. above 83, source and/or special nuclear material;	(1) Any	(1) Not to exceed 3.7 MBq (100 μ Ci) per radionuclide, except;	
(2) Natural or depleted uranium	(2) Metal slabs (not readily dispersible)	(2) 10 kilograms	
B. Cesium 137	B. Source mounted on Panasonic TLD	B. 185 kBq (5 μ Ci) per source; 1.85 MBq (50 μ Ci) total	
C. Any byproduct material with Atomic Nos. 3 through 83, plus americium 241, except;	C. Sealed or plated sources,	C. 37 GBq (1 Ci) each radionuclide; 222 GBq (6 Ci) total, except;	
(1) Cesium 137	(1) Sealed sources (Gamma Industries Model VD-HP)	(1) Not to exceed 1.85 TBq (50 Ci) per source	
(2) Cesium 137	(2) Sealed sources (ORNL Dwg. No. DSK-2345)	(2) 55.5 TBq (1500 Ci)	
(3) Cesium 137	(3) Sealed sources (J.L. Shepherd)	(3) Three sources, not to exceed 16.28 GBq (440 Ci) total	
(4) Americium 241	(4) Sealed sources (Monsanto Research Corporation Model 2725-BT)	(4) Not to exceed 370 GBq (10 Ci) per source	

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9702030092 961219
PDR ADOCK 03003572
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**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

01-06113-04

Docket or Reference Number

030-03572

Amendment No. 20

6. Byproduct, source and/or special nuclear material

7. Chemical and/or physical form

8. Maximum amount that licensee may possess at any one time under this license

D. Any byproduct or special nuclear material with atomic numbers 1 through 96, inclusive.

D. Nuclear power plant process, waste or effluent samples, any form.

D. Not to exceed 370 MBq (10 mCi) per radionuclide, and 1.85 GBq (50 mCi) total.

9. Authorized Use:

- A. For possession and use in the calibration and standardization of laboratory instruments, and for analysis of samples for radioactive material
- B. For possession and use in Panasonic thermoluminescent (TLD) badge cleaning system
- C. For possession and use in the repair, maintenance and calibration of radiation detection instrumentation and in the calibration of pocket chambers and TLDs. Neutron emitting sources may also be used in neutron activation studies
- D. Nuclear power plant process, waste or effluent samples submitted to the laboratory for analysis.

CONDITIONS

10. Locations of Use:

- A. Materials in Items 6.A may be used at the TVA Western Area Radiological Laboratory, Muscle Shoals, AL, and at temporary job sites of the licensee anywhere in the United States where the Nuclear Regulatory Commission retains jurisdiction.
- B. Material in Item 6.B. shall be used only at the Western Area Radiological Laboratory, Muscle Shoals, AL.
- C. Materials in Item 6.C. shall be used only at the TVA Western Area Radiological Laboratory, Muscle Shoals, AL.

11. Licensed materials shall be used by, or under the supervision of, William L. Raines, R. Michael Clingan, James W. Dillard, Charles R. Frederick, or R. Dee Colvett.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number

01-06113-04

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030-03572

Amendment No. 20

Continued

CONDITIONS

12. A. The Radiation Protection Officer for the activities authorized by this license is Ralph G. Wallace.
13. A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed 6 months or at such other intervals as specified by the certificate of registration referred to in 10 CFR 32.210.
- B. Notwithstanding Paragraph A of this Condition, sealed sources designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 months.
- C. In the absence of a certificate from a transferor indicating that a leak test has been made within six months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
- D. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.
- E. Sealed sources need not be leak tested if:
- (i) they contain only hydrogen-3; or
 - (ii) they contain only a radioactive gas; or
 - (iii) the half-life of the isotope is 30 days or less; or
 - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
 - (v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transferred to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

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030-03572

Amendment No. 20

Continued

CONDITIONS

13. F. The leak test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. If the test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region II, ATTN: Chief, Nuclear Materials Licensing/Inspection Branch, 101 Marietta Street N.W., Suite 2900, Atlanta GA 30323-0199. The report shall specify the source involved, the test results, and corrective action taken. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.
- G. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to Perform such services.
14. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
15. The licensee shall conduct a physical inventory every 6 months to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 5 years from the date of each inventory, and shall include the quantities and kinds of byproduct material, manufacturer's name and model numbers, location of the sources and/or devices, and the date of the inventory.
16. The licensee shall not acquire licensed material in a sealed source or device that contains a sealed source unless the source or device has been registered with the Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State.
17. In addition to the possession limits in condition 8, the licensee shall further restrict the possession of unsealed licensed material to quantities less than 10^5 times the applicable limits in Appendix C of 10 CFR Part 20 as specified in 10 CFR 30.35(d).
18. The licensee shall maintain records of information related to decommissioning at the Western Area Radiological Laboratory, Muscle Shoals, AL as specified in 10 CFR 30.35(g) until this license is terminated by the Commission.
19. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

01-06113-04

Docket or Reference Number

030-03572

Amendment No. 20

Continued

CONTINUED

20. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

A. Application with letter dated December 28, 1992 [Complete renewal submittal and incorporation of License No. 01-06113-05]

B. Letters dated:

- | | |
|------------------------|---|
| (1) March 30, 1982 | [source receipt, transfer and leak test procedure - Cs-137 1500 Ci (from -05 license folder)] |
| (2) April 30, 1982 | [added materials - Cs-137 1500 Ci (from -05 license folder)] |
| (3) August 19, 1993 | [Additional renewal information] |
| (4) September 28, 1993 | [New 10 CFR Part 20 information] |
| (5) August 31, 1994 | [Additional uses, additional users, additional location] |
| (6) January 18, 1995 | [Additional information] |
| (7) March 1, 1996 | [extend expiration date in accordance with 10 CFR 3036] |
| (8) October 28, 1996 | [Change duties of staff, delete supervisors, change status of device, change mailing address] |

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

DAVID J. COLLINS

David J. Collins

BY

Region II, Division of Nuclear Materials Safety
101 Marietta Street, N.W., Suite 2900
Atlanta, GA 30323-0199

DATE

DEC 19 1996

L 12/19/96

	:	(FOR LFMS USE)
	:	INFORMATION FROM LTS
BETWEEN:	:	-----
	:	
License Fee Management Branch, ARM	:	Program Code: 03221
and	:	Status Code: 0
Regional Licensing Sections	:	Fee Category: EX 3P 2C 1D
	:	Exp. Date: 20030930
	:	Fee Comments: NOT REACTOR RELATED
	:	Decom Fin Assur Req'd: Y
	:

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

Applicant/Licensee: TENNESSEE VALLEY AUTHORITY
 Received Date: 961030
 Docket No: 3003572
 Control No.: 257248
 License No.: 01-06113-04
 Action Type: Amendment

2. FEE ATTACHED

Amount: _____
 Check No.: _____

3. COMMENTS

Signed _____
 Date _____

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered /__/_)

1. Fee Category and Amount: _____

2. Correct Fee Paid. Application may be processed for:

Amendment _____
 Renewal _____
 License _____

3. OTHER _____

Signed _____
 Date _____



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

INFORMATION FOR NRC MATERIAL LICENSEES

Please find enclosed: ☒ Your NRC material license
☐ Amendment to your NRC material license
☐ Amendment renewing your NRC material license
☐ Amendment terminating your NRC material license
☐ Notice for Radiographer Quality Assurance Approval Program

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify this office (ATTN: Ms. Diane Heim at (404) 331-4673) so that we can provide appropriate corrections and answers.

Please be advised that your license expires at the end of the day in the month and year stated in the license. Unless your license has been terminated, you must conduct your program involving byproduct materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR 19, "Notice, Instructions and Reports to Workers: Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Not possess and use materials authorized in Items 6, 7, and 8, on the license until:
 - a. you have constructed the facilities and obtained the equipment described in the license application and supporting documentation; and
 - b. you have notified the U. S. Nuclear Regulatory Commission, Region II, ATTN: Materials Licensing/Inspection Branch, in writing, that activities authorized by the license will be initiated
 - c. you have submitted & certified implementation of a Quality Management Program (10 CFR 35.32) for radiotherapy, or for administering > 30 uCi of I-125 or I-131.
3. Notify NRC, in writing, within 30 days:
 - a. when an authorized user, Radiation Safety Officer, or Teletherapy Physicist permanently discontinues performance of duties under the license or has a name change; or
 - b. when the licensee's mailing address changes (no fee is required if the location of byproduct material remains the same).
4. In accordance with 10 CFR 30.36(b) and/or license condition, notify NRC, promptly, in writing, and request termination of the license:
 - a. when you decide to terminate all activities involving materials authorized under the license; or
 - b. if you decide not to complete the facility, acquire equipment, or possess and use authorized material.

5. Request and obtain a license amendment before you:
- receive or use byproduct material for a clinical procedure permitted under Part 35 but not permitted by your license issued pursuant to this part.
 - permit anyone, not authorized under 10 CFR 35, Subpart J, to work as an authorized user under a license for medical use of byproduct material.
 - permit anyone, not authorized under 10 CFR 35, Subpart J, to work as a Radiation Safety Officer, Teletherapy Physicist, or Nuclear Pharmacist, under a license for medical use of byproduct material.
 - order byproduct material in excess of the amount, or a different radionuclide or form, other than authorized on the license;
 - add or change the areas of use or address (or addresses) of use identified in the license application or on the license; or
 - change ownership of your organization.
6. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date of your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of byproduct material after your license expires is a violation of NRC regulations. Transfer of licensed materials must be consistent with 10 CFR 30.41, 40.51 or 70.42, as applicable. A license will not normally be renewed, except on a case-by-case basis, in instances where licensed material has never been possessed or used.

In addition, please note that NRC Form 313 requires the applicant, by his/her signature, to verify that the applicant understands that all statements contained in the application are true and correct to the best of the applicant's knowledge. The signatory for the application should be the licensee or certifying official rather than a consultant.

You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in enforcement action against you. This could include issuance of a Notice of Violation, or imposition of a Civil Penalty, or an order suspending, modifying or revoking your license as specified in the "General Statement of Policy and Procedures for NRC Enforcement Actions," NUREG-1600, (7/95). Since serious consequences to employees and the public can result from failure to comply with NRC requirements, prompt and vigorous enforcement action will be taken against those who do not achieve the necessary attention to detail and standard of compliance expected of licensees.

Thank you for your cooperation.

Enclosures:

- NRC License
- Category Marked Below for:
 - ☐ New licenses: NUREG-1600 (7/95); 19; 20; 30; 40 or 70, as appropriate; 71; 170; NRC Form 3, Agreement State list; and NRC Form 313.
 - ☐ New radiography licenses: Parts 34; 150.
 - ☐ New medical and teletherapy licenses: Part 35.
 - ☐ Amendments and renewals: NRC Form 313.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

NOV 26 1996

Tennessee Valley Authority
ATTN: Pedro Salas
Manager, Nuclear Licensing
1101 Market St., BR 4G-C
Chattanooga, TN 37402-2801

Mail Control No. 257248
Docket No. 030-03572
License No. 01-06113-04

SUBJECT: ACKNOWLEDGEMENT OF REQUEST FOR A LICENSING ACTION

(Your: ☒ Letter ☐ Application ☒ Dated ☐ Received October 28, 1996)

Dear Sir or Madam:

1. In response to your request, we have performed an administrative review of your application for a:
☐ new ☒ amendment ☐ renewal ☐ termination licensing action.

It should be noted that a technical review may identify additional omissions in the submitted information, technical issues that require additional information, or policy/technical issues that require coordination with headquarters or other NRC regional offices.

2. It appears that your request is ☐ incomplete ☒ complete and: ☒ routine (see 3-5 below);
☐ non-routine, and if necessary, can be completed within ___ - ___ days, following fee approval and response to any telephone or telefax deficiency requests from our license reviewer.

3. New and amendment actions are normally processed in 20 - 30 days, unless we find major deficiencies, or policy issues requiring central program office assistance.

4. Renewal actions are normally processed in 60 - 90 days, however under timely filing (before expiration) you may continue to operate under your existing license.

5. Termination actions are normally processed in 20 - 30 days, unless confirmatory surveys following decontamination are involved.

6. A copy of your correspondence has been forwarded to our Licensing Fee and Debt Collection Branch (301/415-6067) for approval of the fee category and amount.

7. If you have a compelling safety or business-related reason for requesting expedited review, please contact me or our Licensing Assistant, Diane Heim, at 404/331-4673 [voice/ans] or 404/331-7437 [fax] or Internet: ddh@nrc.gov. We will try to complete your request, as stated in 2. above.

8. Please call or write with any questions. I can be reached directly at 404/331-5624 [voice/ans] or via Internet: djc3@nrc.gov.

Sincerely,

David J. Collins, License Reviewer
Materials Licensing/Inspection Branch 2

BETWEEN:

License Fee Management Branch, ARM
and
Regional Licensing Sections

: (FOR LFMS USE)
: INFORMATION FROM LTS
: -----
: Program Code: 03221
: Status Code: 0
: Fee Category: EX 3P 2C 1D
: Exp. Date: 20030930
: Fee Comments: NOT REACTOR RELATED
: Decom Fin Assur Req: Y
: ::::::::::::::::::::

1996 NOV -5 AM 8:20

LICENSE FEE TRANSMITTAL

A. REGION II

1. APPLICATION ATTACHED

Applicant/Licensee: TENNESSEE VAL. EY AUTHORITY
Received Date: 961030
Docket No: 3003572
Control No.: 257248
License No.: 01-06113-04
Action Type: Amendment

2. FEE ATTACHED

Amount: NONE
Check No.: _____

3. COMMENTS

Signed DIANE HEIM
Date 10/31/96

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered: LF)

1. Fee Category and Amount: EX 3P 2C 1D

FREE EXEMPT
not Reactor Related

2. Correct Fee Paid. Application may be processed for:

Amendment ✓
Renewal _____
License _____

3. OTHER _____

Signed Kita Smelser
Date 11/5/96

RECEIVED BY LFMS	
Date	<u>11/5/96</u>
LFMS	<u>Nov 1 II</u>
By	<u>Perm</u>
Date Completed	<u>11/5/96</u>



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402-2801

October 28, 1996

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Gentlemen:

In the Matter of)
Tennessee Valley Authority)

Docket No. 30-03572

BY-PRODUCT MATERIAL LICENSE NO. 01-06113-04

TVA hereby requests an amendment to By-Product Material License No. 01-06113-04.
The purpose of the amendment follows:

- ✓(a) To revise references to individuals responsible for the radiation safety programs.
- ✓(b) To reassign the duties of the Radiation Protection Officer.
- ✓(c) To revise the status of the TLD badge cleaning device.

These changes are necessary due to the recent reassignment of responsibilities because of recent retirement of individuals (September 30, 1996) responsible for the radiation safety programs for the subject license.

Enclosed is a copy of the proposed amendment that is keyed to NRC Form 313. Changes are made in License Conditions 10, 11 (License Application Item 7), and 12, and in License Application Item 9.

U. S. Nuclear Regulatory Commission
Page 2

October 28, 1996

In accordance with the requirements of 10 CFR 170.11(a)(4), an amendment fee is not required. If you have any questions regarding this amendment request, please contact Terry Knuettel at (423) 751-6673.

Sincerely,

A handwritten signature in black ink, appearing to read 'Pedro Salas', is written over a horizontal line.

Pedro Salas
Manager, Nuclear Licensing
and Industry Affairs

Enclosures

cc (Enclosures):

Mr. John P. Potter, Chief (2 copies)
Nuclear Material License Section
U.S. Nuclear Regulatory Commission
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

*and, at temporary job sites of the licensee anywhere in the United States.

NRC FORM 313

(10-94)
10 CFR 30, 32, 33
34, 35, 36, 39 and 40

U. S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0120
EXPIRES 6-30-96

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 9 HOURS. SUBMITTAL OF THE APPLICATION IS NECESSARY TO DETERMINE THAT THE APPLICANT IS QUALIFIED AND THAT ADEQUATE PROCEDURES EXIST TO PROTECT THE PUBLIC HEALTH AND SAFETY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0120), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND,
MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA,
RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

LICENSING ASSISTANT SECTION
NUCLEAR MATERIALS SAFETY BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO
RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA,
SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION II
101 MARIETTA STREET, NW, SUITE 2900
ATLANTA, GA 30323-0199

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN,
SEND APPLICATIONS TO:

MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
801 WARRENVILLE RD.
LISLE, IL 60532-4351

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS,
LOUISIANA, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA,
OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH,
WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 76011-8064

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR (Check appropriate item)

- ☐ A. NEW LICENSE
☒ B. AMENDMENT TO LICENSE NUMBER 01-06113-04
☐ C. RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip code)

Tennessee Valley Authority
President, TVA Nuclear & Chief Nuclear Officer
1101 Market Street, 6A Lookout Place
Chattanooga, TN 37402-2801

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

Tennessee Valley Authority
Environmental Radiological Monitoring and Instrumentation
Western Area Radiological Laboratory
Muscle Shoals, AL 35660-1010 *

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Terry Knuettel

TELEPHONE NUMBER

(423) 751-6673

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL.

- a. Element and mass number; b. chemical and/or physical form; and c. maximum amount which will be possessed at any one time

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSEE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY

AMOUNT
ENCLOSED \$

13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39 AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE

Pedro Salas, Manager, L&IA

SIGNATURE

DATE

10/26/96

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			\$		
APPROVED BY				DATE	

BYPRODUCT LICENSE 01-06113-04

10/96

License Condition 10

10. Locations of Use:

- A. No change.
- ✓ B. Material in Item 6.B. shall be used only at the Western Area Radiological Laboratory, Muscle Shoals, Alabama.
- C. No change.

BYPRODUCT LICENSE 01-06113-04

License Condition 11

License Application Item 7

Individual(s) Responsible For the Radiation Safety Program
and Their Training and Experience:

Licensed material shall be used by, or under the supervision of, William L. Raines, R. Michael Clingan, Charles E. Frederick, James W. Dillard, or R. Dee Colvett. The qualifications of the above individuals are given below.

Qualifications of Supervisory Personnel:

1. Michael Clingan Radioanalytical Chemist, Environmental Radiological Monitoring and Instrumentation, Tennessee Valley Authority, Muscle Shoals, Alabama

Formal Education: 2 years, Chemistry, University of North Alabama

Training: Radiochemistry, Tennessee Valley Authority, Browns Ferry Nuclear Plant, 18 months

Experience: Over 22 years of experience in TVA's radiochemistry programs. Responsibilities have included analysis of environmental samples, the preparation of radioactive standards, and the tracking of radioactive materials used by the laboratory.

2. R. Dee Colvett Program Manager, Environmental Radiological Monitoring and Instrumentation, Tennessee Valley Authority, Muscle Shoals, Alabama

Formal Education: B.S., Physics, Harding University, 1963

 M.S., Radiological Physics, Columbia University, 1969

Experience: Twelve years experience in accelerator health physics and biophysics at Brookhaven National Laboratory and Columbia University.

 Over 17 years of experience in TVA's Radiological Control program, including personnel dosimetry, instrument calibration, quality assurance. He currently provides technical direction for TVA's administrative personnel dosimetry program and the computer data base, provides technical support for all facility programs, and coordinates the quality assurance program.

Item 7 (Continued)

Individual(s) Responsible For the Radiation Safety Program
and Their Training and Experience:

3. William L. Raines Manager, Environmental Radiological Monitoring and Instrumentation, Tennessee Valley Authority, Muscle Shoals, Alabama
- Formal Education: B.S., Chemistry, Henderson State College, 1974
Ph.D., Nuclear Chemistry, University of Arkansas, 1978
- Experience: Over 20 years experience in the use and handling of radioactive materials, including:
- Over three years experience with various research projects involving radioactive materials at the University of Arkansas.
- Over 18 years in TVA's radiological laboratory with responsibilities for the identification of radionuclide levels in environmental samples, preparation of calibration standards, instrument calibration, and training of laboratory personnel. For the past seven years he has served as the Manager of the WARL.
4. Charles E. Frederick Chemist, Environmental Radiological Monitoring and Instrumentation, Tennessee Valley Authority, Muscle Shoals, Alabama
- Formal Education: B.S., Chemistry, University of North Alabama, 1970
- Experience: Over 23 years experience in TVA's radiological laboratory with responsibilities for calibration and operation of nuclear counting instrumentation, including gamma spectroscopy, alpha/beta counting systems and liquid scintillation counting systems. This included the handling of radioactive standards and the analysis of radioactive samples of various types.

Item 7 (Continued)

Individual(s) Responsible For the Radiation Safety Program
and Their Training and Experience:

5. James W. Dillard Specialist, Environmental Radiological Monitoring and Instrumentation, Tennessee Valley Authority, Muscle Shoals, Alabama.
- Formal Education: B.S., Chemistry, University of Arizona, 1970
- Ph.D., Analytical Chemistry, North Carolina State University, 1976.
- Experience: Over 20 years experience in the use and handling of radioactive materials, including:
- Over 10 years in TVA's nuclear power program with responsibilities for nuclear quality assurance and audit functions; technical direction for research and development of radiochemical procedures in TVA's radioanalytical laboratory for identification of radionuclide activities in environmental samples; and manager of the radiochemistry department of TVA's Eastern Area Radiological Laboratory.
- Over 7 years in commercial mixed waste laboratories with responsibilities for technical direction and management of radiochemical operations; directed method development of radiochemical procedures; preparation of calibration and quality control radioactive standards; provided radiochemical technical training of laboratory associates; and technical preparation of proposals and contracts for mixed waste analysis.

Item 9

Facilities and Equipment

The Western Area Radiological Laboratory (WARL) is the facility which provides (1) the environmental radiological monitoring support to TVA's nuclear power plants and (2) the calibration of TVA's portable health physics instrumentation. The organization also controls and processes the administrative personnel dosimetry badges for TVA. A drawing of the facility is presented in attachment 3.

1. The environmental laboratory also provides analytical services for the analysis of some nuclear power plant process, waste and effluent samples. The facility includes a chemical laboratory, sample preparation facilities, a calibration standards preparation laboratory, and counting equipment. The counting equipment includes low background beta counters, internal proportional counters, germanium gamma detection equipment with multichannel analyzer systems, liquid scintillation counters, and beta-gamma coincidence counting equipment.

The laboratory hoods used for sample analysis are equipped with filtered exhaust systems or water wash down spray systems. The ventilation system for hoods in which radioactive materials are used will be checked quarterly or whenever a noticeable decrease in the flow rate is apparent. Measurements will be made at five or more different points in the opening with a calibrated air velocity meter, such as a thermoanemometer, with the sash in the operating position. Corrective actions will be taken if the measured face velocity is less than 100 feet per minute. Records of airflow measurements and corrective actions will be maintained at WARL. Air released to the unrestricted areas does not contain radioactive material in concentrations which exceed the requirements of 10 CFR 20.1302.

Vehicles have been equipped with sampling and/or counting equipment for use in collecting routine environmental samples or for responding to a radiological emergency at any of TVA's nuclear power facilities. Sealed sources may be assigned to these vehicles for the calibration of equipment in the field. These vehicles are locked and the keys are kept in secure areas when not in use.

Quantities of radioactive materials exceeding the quantities given in 10 CFR 30.71, Schedule B, shall be stored in a locked cabinet at the WARL. The facility is locked during non work hours and the area patrolled by TVA security personnel.

Sources designed for use with a TLD badge cleaning device are maintained at the Western Area Radiological Laboratory in Muscle Shoals, Alabama. Ten check sources (approximately 5 microcuries of Cs-137 each) are associated with the system. These check sources will be stored in a locked metal cabinet in WARL and will be used by or under the supervision of the RPO. Access to the laboratory is controlled by TVA and is limited to TVA personnel and authorized visitors.

License Condition 12

12. A. The Radiation Protection Officer for the activities authorized by this license is R. Dee Colvett.
- ✓ B. Deleted