



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PA 19406-2713

March 27, 2015

Docket No. 03009944
Control No. 586226

License No. 41-08165-08

J. W. Shea
Vice President, Nuclear Licensing
Tennessee Valley Authority
LP 3D-C
1101 Market Street
Chattanooga, TN 37402-2801

**SUBJECT: TENNESSEE VALLEY AUTHORITY, REQUEST FOR ADDITIONAL
INFORMATION CONCERNING APPLICATION FOR LICENSE RENEWAL,
CONTROL NO. 586226**

Dear Mr. Shea:

This is in reference to your letter and application dated February 27, 2015 (Agency-wide Documents Access and Management System (ADAMS) Accession No. ML15071A408) requesting to renew Nuclear Regulatory Commission License No. 41-08165-08. In order to continue our review, we need the following additional information:

1. Your application does not contain the information needed to support your request for possessing, storing, repairing, decontaminating, and testing of contaminated components. Please resubmit your application using the guidance in NUREG-1556, Volume 18, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Service Provider Licenses." The checklist in Appendix C in NUREG-1556, Volume 18 contains procedures that are acceptable to the NRC and may be used to submit your response. Please revise your renewal application to address the items listed below.
2. In box 3 of NRC Form 313, you indicate that licensed material will be used or possessed at TVA's Power Services Shop (PSS) and the Bulk Material Storage Building (BMSB) in Muscle Shoals, Alabama. Section 8.3 of NUREG-1556 Volume 18 requests you specify the street address, city, and state or other descriptive address (e.g., on Highway 10, 5 miles east of the intersection of Highway 10 and State Route 234, Anytown, State) for each facility at which licensed material will be used, stored, or dispatched, and list the specific activities to be conducted at each location.
3. On page E2-2 of your application, you indicate that updated decommissioning financial assurance documents will be submitted to the NRC in separate correspondence and that decommissioning records will be maintained and transferred as specified in 10 CFR 30.35(g). Please submit your updated financial assurance and add 10 CFR 70.25 for records important to decommissioning because your license also authorizes special

nuclear material.

4. On page E2-3 of your application, you list the purposes for which the licensed material will be used as including possession, storage, repair, inspection, decontaminating and testing of contaminated components. If you plan to package this material for transport, please include packaging for transportation as another authorized use.
5. On page E2-4 of your application, you list the Radiation Safety Officer (RSO) as the sole named Authorized User. You may list more than one name, as long as the individual(s) has/have received the required training. If you would like additional authorized users to be named on the license, please provide a description of their training and experience as related to the licensed activities.
6. On page E2-4 of your application, you indicate that ancillary personnel will complete the relevant parts of the classroom training portion of the training course described in Appendix H of NUREG-1556 Volume 18. Please note that you have not included on-the-job training. It is important especially for housekeeping personnel to take a tour of the facility and be made aware of the hazards and what they should not touch or remove from the facility. In addition, TVA Police may need to respond to an emergency and would also benefit from a tour rather than rely solely on classroom training. Please revise your statement for ancillary personnel.
7. On page E2-5 of your application, you indicate that all personnel working with radioactive materials complete refresher training. However, personnel who supervise personnel working with radioactive materials also need to complete refresher training as well as ancillary personnel. Refresher training is an opportunity to hear employee concerns as well as a time to review important safety procedures. Please revise your statement to coincide with NUREG-1556 Volume 18.
8. On page E2-5 of your application, you indicate that all personnel working with radioactive materials complete refresher training at no more than 12 month intervals which includes the topics described in Attachment 3. Attachment 3 does not include information on how to decontaminate nor does it include a review of emergency procedures for all likely scenarios. Please compare the topics listed in Attachment 3 to Appendix H of NUREG-1556 Volume 18 and provide a complete list in your resubmittal to make sure that the training is comprehensive.
9. On pages E2-6 and E2-7 of your application, you provide a list of the power service shops and bulk storage building. Please indicate which building is the building near the dam that the Power Services Shop has used in the past for licensed activities. In addition and in keeping with NUREG-1556 Volume 18 please also provide the following for each facility:
 - a. A map of the Muscle Shoals reservation with each facility identified including the location of the RSO's office.

- b. A description of each PSS and BMSB facility and include the equipment to be made available at each location. In your description of the Bulk Material Storage Building you mentioned that it is approximately 100 feet wide and one thousand feet in length and that it has no floor drains. But the description of the four PSS do not contain similar information.
 - c. Include a description of the area(s) assigned for the receipt, storage, security, preparation, handling, waste storage and measurement of radioactive materials.
 - d. Submit a facility diagram showing the proximity of licensed materials to unrestricted areas.
 - e. Drawings, sketches, diagrams, etc. should indicate the scale, or include dimensions on each drawing or sketch.
 - f. Submit a diagram, sketch, or drawing, when applicable, that identifies areas where radioactive materials may become airborne. The diagram should contain descriptions of the ventilation systems, with pertinent airflow rates, filtration equipment, sample collection points, and monitoring systems.
 - g. Describe protective clothing (such as rubber gloves, coveralls, respirators, and face shields), auxiliary shielding, absorbent materials, secondary containers for waste water storage for decontamination purposes, plastic bags for storing contaminated items, etc., that will be available.
 - h. Identify specialized handling tools, facility safety interlocks designed to prevent operation of radiological safety systems in the event that operation of a system could result in accidental exposure or release of material (e.g., high efficiency particulate air (HEPA) filters, ventilation system, safety door interlocks, etc.) or equipment.
10. On pages E2-6 and E2-7 of your application, you state that workers are not routinely required to wear respirators. This implies that on some occasions the workers may use respirators. On page E2-13 of your application, you state that radiation safety controls are implemented to prevent the creation of airborne radiation levels that would require the use of respiratory protection. But then your application states that in cases where the potential for airborne contamination exists, the air will be monitored and appropriate precaution taken to keep airborne contamination to a minimum through the use of proper ventilation and prior decontamination. If a respiratory program is in place, please provide a copy of your respiratory program and associated operating and emergency procedures. Otherwise, revise your application for consistency.

11. On page E2-8 of your application, you indicate that the RSO conducts a review of the radiation protection program annually and that a number of key factors are reviewed including personnel radiation exposure, radiation surveys, exposure to the public and radioactive material control. Appendix I of NUREG-1556 Volume 18 contains a model audit checklist that is much more comprehensive. Please note that your program for reviewing the content and implementation of your entire radiation protection program will be examined during inspections, and should not be submitted in the license renewal application. Please remove the section on audits from your renewal application.
12. On page E2-9 of your application, you state that the TVA nuclear plants notify the PSS before radioactively contaminated components are shipped to the PSS. Then in a separate sentence you state that the RSO is also notified of the proposed shipment. But it is not clear if the RSO is made aware of the shipment well in advance so that he can be prepared to observe the receipt survey or if he is notified when the shipment arrives on the reservation. Please revise to ensure proper radiation safety oversight.
13. On page E2-9 of your application, you state that the individual performing the receipt inspection verifies that the PSS license authorizes the possession of the material and notifies the RSO if the possession of the material is not authorized. Your procedure should be clear to your customers, the TVA nuclear power plants, as to what material you are authorized to receive and in what quantity. Radioactive components that exceed your license limits should not be shipped to PSS. You may

State: "Ordering licensed material and package receipt and opening will follow the model procedures in NUREG-1556, Vol. 18, Appendix K."

OR

Submit a description of procedure(s) for ordering licensed material and package receipt and opening.

AND

For unsealed licensed material, submit a description of procedure(s) for ensuring material accountability.

14. On pages E2-10 and E2-11 of your application, you provide your safe use of radionuclides and emergency procedures. NUREG-1556 Volume 18 states that applicants should either submit their operating and emergency procedures or an outline or summary in responding to subsequent sections. Please confirm that your operating and emergency procedures will include and in some cases you will resubmit in your renewal application:
 - a. Description of equipment and facilities adequate to protect personnel, the public and the environment.
 - b. Confirmation that licensed activities are conducted only by individuals qualified by training and experience.

- c. Development and maintenance of written operating and emergency procedures for all likely scenarios.
- d. Establishment and management of a radiation safety and decommissioning records system.
- e. Methods or procedures for preventing the release of contaminated material and equipment.
- f. Methods or procedures for preventing personnel contamination.
- g. Radiation safety procedures and the authorized users responsibilities unique to each type of service operation requested in the application.
- h. Radiation safety procedures including emergency procedures for all likely scenarios.
- i. Equipment, techniques, and corresponding radiation safety procedures associated with providing services involving either sealed sources or unsealed materials.
- j. Instructions for handling and using licensed materials.
- k. Instructions for maintaining security during storage and transportation.
- l. Procedures to minimize personnel exposure during routine use and in the event of an incident, including exposures from inhalation and ingestion of licensed unsealed materials.
- m. Procedures for the implementation and adherence to good health physics practices while performing service operations:
- n. Minimization of distance to areas, to the extent practicable, where licensed materials are used and stored
- o. Maximization of survey frequency, within reason, to enhance detection of contamination
 - Segregation of radioactive material in waste storage areas
 - Separation of radioactive material from explosives and other hazards
 - Separation of potentially contaminated areas from clean areas by barriers or other controls.
- p. Personnel monitoring, including bioassays, and the use of personnel monitoring equipment.

- q. Transportation of licensed materials to temporary job sites, packaging of licensed materials for transport in vehicles, placarding of vehicles when needed, and physically securing licensed materials in transport vehicles during transportation to prevent accidental loss, tampering, or unauthorized removal.
 - r. Procedures for picking up, receiving, and opening packages containing licensed materials, in accordance with 10 CFR 20.1906.
 - s. Instructions for maintaining records in accordance with the regulations and the license conditions.
 - t. Procedures and actions to be taken to prevent the spread of contamination and minimize inhalation and ingestion of licensed materials and actions to obtain suitable radiation survey instruments.
 - u. Instructions for the proper storage and disposal of radioactive waste.
 - v. Procedures to be followed in the event of uncontrolled release of radioactive unsealed licensed material to the environment, including notification of the RSO, NRC, and other Federal and state agencies.
15. On page E2-12 of your application, you state that if the levels may cause the creation of excessive airborne contamination levels when work is performed on the component, the component is shipped to a licensed facility that can decontaminate the component before it is accepted for work at the PSS. On page E2-3 of your application, you indicate that one of your licensed activities is decontamination. If there is removable contamination, then your facility could decontaminate the component. Depending on when the level of removable contamination is identified, it should either not have been shipped to PSS and decontaminated at the nuclear power plant or should be in a PSS area where this decontamination can take place with emphasis on employee safety and protection of the environment. Please review your receipt procedures and your radiation safety evaluation and oversight process to ensure safety of your employees and the environment.
16. On pages E2-12 and E2-13 of your application, you provide information on the controlled area, but you did not indicate that a pre-job brief would be conducted nor a review of the radiation levels discussed with personnel who will be performing licensed activities. Please indicate if a Radiation Work Permit will be created for licensed activities and what safety precautions will be utilized. These steps were observed during a previous inspection and can be addressed in your renewal application.
17. On page E2-13 of your application, you indicate that surveys will be conducted periodically. Please define the word "periodically" or you could opt to state: "We will survey our facility and maintain contamination levels in accordance with the survey frequencies and contamination levels published in NUREG-1556, Vol. 18, "Program Specific Guidance About Service Provider Licenses," dated November 2000." If you do not opt to make this statement, please address the following in terms of surveying:

- a. Specify the types and frequencies of surveys and monitoring that will be performed. Confirm that surveys will include both unrestricted and restricted areas. Confirm that each survey record will include the following:
 - i. A diagram of the area surveyed;
 - ii. A list of items and equipment surveyed;
 - iii. Specific locations on the survey diagram where wipe test was taken;
 - iv. Ambient radiation levels with appropriate units;
 - v. Contamination levels with appropriate units;
 - vi. Make and model number of instruments used;
 - vii. Background levels; and
 - viii. Name of the person making the evaluation and recording the results and date.
 - b. Specify the criteria used to set the type and frequency at which routine surveys for airborne licensed materials are performed (e.g., breathing zone and general work area air sampling, hood and room ventilation air flow rate measurement, and stack effluent sampling). Describe the instrumentation that will be used for sample collection and analysis, the calibration method and frequency for each, and specify the lower limit of detection and action levels for each.
18. On page E2-3 of your application, you indicate that you would repair contaminated components. Your renewal application did not address maintenance. Please provide:

The statement: "We will implement and maintain procedures for routine maintenance of our device according to each manufacturer's (or distributor's) written recommendations and instructions."

OR

Alternative procedures for NRC's review.

For performance of non-routine maintenance, submit either of the following:

The statement: "We will have the device manufacturer (or distributor) or other person authorized by NRC or an Agreement State perform non-routine maintenance."

OR

The information listed in Appendix P supporting a request for authorization to perform this work.

Note: Alternative procedures submitted by the applicant for performing routine maintenance will be reviewed using the criteria in Appendix P. Information requested in Appendix P will be reviewed on a case-by-case basis; if approved, the license will contain a specific condition authorizing the licensee to perform non-routine maintenance.

19. On page E2-3 of your application, you indicate that you would repair contaminated components and on page E2-9 of your application, you note that these components are coming from TVA nuclear power plants. The nuclear power plants have a strict code for replacement parts. Please confirm that any replacement part(s) you will use, will ensure compliance with 10 CFR 50.55(a) for your customers. This should be in the customer agreement prior to receiving the component.
20. On page E2-14 of your application, you indicate that you will use the model waste procedures published in Appendix N of NUREG- 1556, Vol. 18, 'Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Service Provider Licenses,' dated November 2000." Please confirm that you will not use decay-in-storage or dispose of liquids into the sanitary sewer.

Current NRC regulations and guidance are included on the NRC's website at www.nrc.gov; select **Nuclear Materials; Med, Ind, & Academic Uses**; then **Licensee Toolkits, see our toolkit index page**. You may also obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-866-512-1800. The GPO is open from 8:00 a.m. to 5:30 p.m. EST, Monday through Friday (except Federal holidays).

The NRC's Safety Culture Policy Statement became effective in June 2011. While a policy statement and not a regulation, it sets forth the agency's *expectations* for individuals and organizations to establish and maintain a positive safety culture. You can access the policy statement and supporting material that may benefit your organization on NRC's safety culture Web site at <http://www.nrc.gov/about-nrc/safety-culture.html>. We strongly encourage you to review this material and adapt it to your particular needs in order to develop and maintain a positive safety culture as you engage in NRC-regulated activities.

We will continue our review upon receipt of this information. Please reply within 30 days from the date of this letter to my attention at the Region I Office and refer to Mail Control No. 586226. If you have any technical questions regarding this deficiency letter, please call me at (610) 337-5251.

Your cooperation is appreciated.

Sincerely,

Original signed by Kathy Modes

Kathy Modes
Senior Health Physicist
Decommissioning and Technical Support
Division of Nuclear Materials Safety

cc:

Lee R. Miller, Licensing
James Colagross, Radiation Safety Officer

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SUNSI Review Complete: KModes

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