P. Guinan
RSS

TENNESSEE VALLEY AUTHORITY
KNOXVILLE, TENNESSEE 37902

April 23, 1985

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Materials Licensing Branch
Division of Fuel Cycle and Material Safety
Office of Fuel Cycle and Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Reference is made to our letter of April 17, 1985 concerning amendments to NRC Materials License 41-06832-07. We have discovered that certain sections of our license amendment application contain errors. We have corrected the subject errors on the enclosed attachments. We request that you replace original license attachments with these enclosures as you consider this license amendment. We apologize for this inconvenience.

Yours truly,

Charles Bonine, Jr.
Manager of Construction

JER:DD
Enclosures

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Official Copy

Item 5

RADIOACTIVE MATERIAL

	Element and Mass Number	Chemical and/or Physical Form	Maximum Amount Possessed At Any One Time
1.	Cesium 137	Sealed Source Per Troxler Dwg. #A102112	Not to Exceed ~~50~~ 10 Millicuries/Source.
2.	Americium 241:Be	Sealed Source Per Troxler Dwg. #A102451	Not to Exceed 50 Millicuries/Source.

Item 6

PURPOSE(S) FOR WHICH LICENSED MATERIALS WILL BE USED

The materials listed in Item 5 will be used in Troxler Model 3401 or 3411 Nuclear Moisture-Density Gages. These gages are used in determination of moisture content and density of compacted earth in construction earth-fill operations.

Item 7

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

1. Stephen P. Stagnolia, Office Radiological Safety Coordinator. R1
(Resume Attached)

2. Ronald B. Maxwell, Jr., TVA Radiation Safety Officer (Resume Attached)

Item 7

RONALD B. MAXWELL

EDUCATION

BS in Physics, Tennessee Technological University, 1965. Radiological Monitor Instructor, Univeristy of North Carolina Extension Division, 1970. MS in Nuclear Physics, North Carolina State University, 1971.

EXPERIENCE

June 1979 to Present - Chief of Health Physics Services, Radiological Health Staff, Tennessee Valley Authority, Muscle Shoals, Alabama.

September 1978 to June 1979 - Acting Assistant Branch Chief, Radiological Hygiene Branch, Tennessee Valley Authority, Muscle Shaols, Alabama.

November 1975 to September 1978 - Supervisor of the Environmental Radiological Assessment Section, Radiological Hygiene Branch, Tennessee Valley Authority, Muscle Shoals, Alabama

November 1972 to November 1975 - Health Physicist, Environmental Planning and Assessment Staff, Division of Environmental Planning, Tennessee Valley Authority, Chattanooga, Tennessee.

August 1971 to November 1972 - Health Physicist, Industrial and Radiological Hygiene Branch, Tennessee Valley Authority, Muscle Shoals, Alabama.

September 1967 to August 1971 - Assistant Radiological Safety Officer, North Carolina State University, Raleigh, North Carolina.

September 1965 to September 1967 - Health Physicist, Applied Health Physics Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

June 1965 to September 1965 - Aerospace Technologist, National Aeronautics and Space Administration, Manned Spaceflight Center, Houston, Texas.

41-06832-07

Item 8

TRAINING FOR INDIVIDUALS WORKING IN OR
FREQUENTING RESTRICTED AREAS

Training for personnel involved in the use of licensed material is provided by TVA's Offsite Support Section in Muscle Shoals, Alabama. Classroom training consists of four (4) to eight (8) hours training, depending on class comprehension. A test is administererd at the end of the classroom instruction and requires a passing grade of 80 percent or better for qualification. Details of this information have been previously submitted to your Mrs. Isabel Martin via letter from Charles Bonine, Jr. on February 13, 1984

Item 10

RADIATION SAFETY PROGRAM

Personnel Monitoring Equipment

All personnel using licensed material will wear a Thermoluminescence Dosimeter (TLD) which is managed by the TVA's Dosimetry Section in Muscle Shoals, Alabama. The TLD is exchanged on a monthly basis in accordance with TVA's Officewide Practice.

Radiation Detection Instruments

Several types of survey instruments are used. They are used as follows:

Type	Manuf.	Model No.	No. Avail.	Radiat. Detected	Sensitivity Range
Survey Meter	Victoreen	492	10	Beta, Gamma	0-1000 mR/hr
Survey Meter	Eberline	295	10	Beta, Gamma	0-1000 mR/hr
Survey Meter	G. E. Smith	GS-100A	10	Beta, Gamma	0-1000 mR/hr
Survey Meter	Eberline	TNR-4	10	Neutron	0-5000 mR/hr

Instrument calibration of the above listed survey instruments will be done at 3-month intervals using a 1410 curie Cesium-137 standard with calibration traceable to the National Bureau of Standards.

The instrument will be placed in a field of known exposure rate at two levels for each scale.

Adjustments will be made so that the performance at each level is within +10 percent of the full scale range. The neutron instruments will be calibrated with a 160 gm PU/Be source with its calibration traceable to the National Bureau of Standards.

The calibration procedures and facilities used are the same as those used in support of TVA's nuclear power plants.

Leak Testing

For leak testing procedures See Attachment 1.

Item 10

Attachment 1

SOURCE LEAK TESTING PROCEDURE

Leak tests will be performed by health physics technicians with a minimum of two years experience in the field and under the supervision of a health physicist with a minimum of two years field experience. The entire program is managed by the Dosimetry and Offsite Support Staff Chief who normally has many years experience in the field of health physics. Certified health physicists are available for consultation.

The sources shall be tested for leakage at intervals not to exceed six months. The test shall be capable of detecting the presence of 0.005 microcurie of alpha or beta contamination on the test sample. The test sample, using filter paper, shall be taken from the source or from appropriate accessible surfaces of the device in which the sealed source is permanently or semipermanently mounted or stored.

The filter paper will be counted in a shielded laboratory type smear counter in the central laboratory utilizing a large GM detector or gas proportional detector with an efficiency of from 10 to 30 percent.

Calibration consists mainly of standard sources bought from Eberline, supplemented by sources made in our radiological laboratory; all traceable to National Bureau of Standards.

Sample calculation:

$$\frac{\text{counts/min}}{\text{efficiency } \frac{\text{d/min}}{\text{counts/min}} \times 2.22 \times 10^6 \frac{\text{d/min}}{\text{n Ci}}} = \text{N Ci} = \text{microcuries}$$

Records of leak test results shall be kept in units of microcuries and maintained for inspection.

If the test reveals the presence of 0.005 microcuries or more of removable contamination, the source will be withdrawn from use and shall be decontaminated, repaired or disposed of according to applicable regulations.

Within five (5) days after determining that a source has leaked, the Nuclear Regulatory Commission shall be notified according to applicable regulations.