

# 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.

**FEDERAL AGENCIES FILE APPLICATIONS WITH:**

U.S. NUCLEAR REGULATORY COMMISSION  
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS  
WASHINGTON, DC 20555

**ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS, IF YOU ARE LOCATED IN:**

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

U.S. NUCLEAR REGULATORY COMMISSION, REGION I  
NUCLEAR MATERIAL SECTION B  
631 PARK AVENUE  
KING OF PRUSSIA, PA 19406

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

U.S. NUCLEAR REGULATORY COMMISSION, REGION II  
MATERIAL RADIATION PROTECTION SECTION  
101 MARIETTA STREET, SUITE 2900  
ATLANTA, GA 30323

**IF YOU ARE LOCATED IN:**

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

U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
MATERIALS LICENSING SECTION  
799 ROOSEVELT ROAD  
GLEN ELLYN, IL 60137

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV  
MATERIAL RADIATION PROTECTION SECTION  
811 RYAN PLAZA DRIVE, SUITE 1000  
ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V  
MATERIAL RADIATION PROTECTION SECTION  
1450 MARIA LANE, SUITE 210  
WALNUT CREEK, CA 94596

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 JURISDICTION.

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

- A. NEW LICENSE
- B. AMENDMENT TO LICENSE NUMBER \_\_\_\_\_
- C. RENEWAL OF LICENSE NUMBER 41-08165-01

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

Tennessee Valley Authority  
Fossil Operations  
3S 61K Lookout Place  
Chattanooga, TN 37402-2801

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

Paradise Fossil Plant  
Tennessee Valley Authority  
Drakesboro, KY 42337

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Stanley W. Coffman

TELEPHONE NUMBER

(615) 751-3393

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 AND 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, 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.

SIGNATURE - CERTIFYING OFFICER

TYPED/PRINTED NAME

TITLE

DATE

C. N. Dammann

Manager of Fossil Operations

14. VOLUNTARY ECONOMIC DATA

a. ANNUAL RECEIPTS

<\$250K	\$1M-3.5M
\$250K-500K	\$3.5M-7M
\$500K-750K	\$7M-10M
\$750K-1M	>\$10M

b. NUMBER OF EMPLOYEES (Total for entire facility excluding outside contractors)

c. NUMBER OF BEDS

d. WOULD YOU BE WILLING TO FURNISH COST INFORMATION (Dollar and/or staff hours) ON THE ECONOMIC IMPACT OF CURRENT NRC REGULATIONS OR ANY FUTURE PROPOSED NRC REGULATIONS THAT MAY AFFECT YOU? (NRC regulations permit it to protect confidential commercial or financial--proprietary--information furnished to the agency in confidence)

YES

NO

FOR NRC USE ONLY

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

8911290383 890725  
REG2 LIC30

41-08165-01

PDR

## Item 5

## RADIOACTIVE MATERIAL

<u>Element and Mass #</u>	<u>Number of Sources and Chemical and Physical Form</u>	<u>Manufacturer and Model #</u>	<u>Activity Per Source</u>	<u>Total Activity</u>
1. Cesium 137	23 - sealed sources	Ohmart A-2012	5 mCi	115 mCi total
2. Cesium 137	2 - sealed sources	Industrial Nucleonics	50 mCi	100 mCi total
3. Cesium 137	1 - sealed sources	Ohmart HM-8-S0-40942-2	50 mCi	50 mCi total
4. Cesium 137	1 - sealed sources	Ohmart A-2102	150 mCi	150 mCi total
5. Cesium 137	4 - sealed sources	Kay-Ray 3600E	100 mCi	400 mCi total
6. Cesium 137	4 - sealed sources	Kay-Ray 3600E	100 mCi	400 mCi total
7. Curium 244	2 - sealed sources	Gunson' Sortex Amersham Corp. Model CLCL	20 mCi	40 mCi total
8. Cesium 137	12 - sealed sources	Ohmart A2102	1500 mCi	18,000 mCi total
9. Cesium 137	9 - sealed sources	Kay-Ray 3600F	200 mCi	1,800 mCi total
10. Cesium 137	1 - sealed sources	Ohmart HM-8-S0-40942-1	20 mCi	20 mCi total
11. Cesium 137	1 - sealed sources	Ohmart HM-8-S0-409423	50 mCi	50 mCi total
12. Cesium 137	4 - sealed sources	Texas Nuclear SGH	100 mCi	400 mCi total

## Item 5 (continued)

<u>Container and/or Device in Which Each Sealed Source Will Be Stored or Used</u>	<u>Name of Manufacturer</u>	<u>Model Number</u>
1. Source holder	Ohmart	SHRM-PA
2. Source holder	Industrial Nucleonics	LS-101
3. Source holder	Ohmart	HM-8
4. Source holder	Ohmart	HM-8
5. Source holder	Kay-Ray	7063 P
6. Source holder	Kay-Ray	7063 P
7. Source holder	Gunson's Sortex	Ash Monitor Phase III - A-2
8. Source holder	Ohmart	SR-1A
9. Source holder	Kay-Ray	7063 P
10. Source holder	Ohmart	HM-8
11. Source holder	Ohmart	HM-8
12. Source holder	Texas Nuclear	5201



Item 6

PURPOSES FOR WHICH LICENSED MATERIAL WILL BE USED

1. For use in Ohmart model SHRM-PA source holder to provide coal flow alarm at inlet to coal feeder.
2. For use in Industrial Nucleonics model LS101 source holder to provide coal bin level indication.
3. For use in Ohmart model HM8 source holder to provide level control of material in coal chutes.
4. For use in Ohmart model HM8 source holder to provide level control of material in coal chute to breaker.
5. For use in Kay-Ray model 7063P source holder to provide density measurement for coal wash static thickener underflow.
6. For use in Kay-Ray model 7063P source holder to provide density measurement for coal wash magnetite thickener underflow.
7. For use in Gunson's Sortex Ash Monitor Phase III-A-2 source holder to analyze ash in coal.
8. For use in Ohmart model SR-1A source holder to provide density measurement on units 1 and 2 scrubber.
9. For use in Kay-Ray model 7063P source holder to provide density measurement for scrubber mill sump discharge.
10. For use in Ohmart HM8 source holder to provide level control of material in coal chutes.
11. For use in Ohmart HM8 source holder to provide level control of material in coal chutes.
12. For use in Texas Nuclear model 5201 source holder 696894 capsule to provide specific gravity measurement of a coal slurry. Mounted on 4" schedule 40 pipe.



Item 7

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

- I. 1. Mike Boyles, Results Supervisor, TVA, resume attached.
2. David T. Baxter, Chemical Engineering Associate, resume attached.
3. Dennis L. Allen, Environmental Engineer, resume attached.
4. Curtis D. West, Supervisor, Technical Services, resume attached.

- II. 1. Stanley W. Coffman, Manager, Instrumentation and Control, TVA, resume attached.

Mr. Coffman is the radiation safety coordinator for TVA fossil-fueled power plants. He is responsible for coordinating radiation safety programs between the power plants, TVA's Radiation Safety and Control (RS&C) group, and the NRC.

- III. 1. Ronald B. Maxwell, Radiation Safety Officer, TVA, resume attached.

Mr. Maxwell is the radiation safety officer for TVA radiation programs not associated with Nuclear Power. He is responsible for assuring that the technical aspects of licensed activities involving health physics are carried out appropriately.

Item 7 (continued)

Resume

Name: Mike Boyles

Education/Training

Health physics training and orientation at Power Operations Training Center, Tennessee Valley Authority (TVA).

Performed radiation survey and wipe test with Kay-Ray service engineer, 1981, and TVA Radiological Hygiene Branch, 1982, at Paradise Fossil Plant.

Will be given approximately two hours of radiation safety training before the end of July 1989. Outline of training is attached.

Experience

Approximately 11 years as instrument mechanic, senior instrument mechanic, senior instrument mechanic foreman, engineering associate, instrument engineer, and results supervisor at TVA.

Approximately three years as an instrument engineer at Paradise Fossil Plant, TVA.

Present Duties

Results Supervisor, Paradise Coal-Washing Plant, TVA.

Item 7 (continued)

Resume

Name: David T. Baxter

Education/Training

Bachelor of Science, Education, Western Kentucky University, 1967.

Radiological Safety Training, one hour, Paradise Fossil Plant, Tennessee Valley Authority (TVA), May 10, 1988.

Will be given approximately two hours of radiation safety training before the end of July 1989. Outline of training is attached.

TVA Experience

November 1969-January 1972	Chemical Lab Analyst, SE-3, Paradise Fossil Plant, TVA
February 1972-November 1972	Mechanical Engineering Aide, SE-3, Paradise Fossil Plant, TVA
November 1972-November 1975	Chemical Lab Analyst, SE-4, Cumberland Fossil Plant, TVA
November 1975-August 1988	Chemical Lab Analyst, SE-4, Paradise Fossil Plant, TVA
September 1988-Present	Chemical Engineering Associate, SE-6, Paradise Fossil Plant, TVA
1985-Present	Maintained NRC records and performed inventory on nuclear sources located in the coal yard, ballmill, and coal prep plant.



Item 7 (continued)

Resume

Name: Dennis L. Allen

Education/Training

B.S., Chemical Engineering, Tennessee Technical University, 1980.

Completed 36 post-graduate hours, environmental/civil engineering field, Tennessee Technical University, 1981.

Radiological Safety Training, one hour, Paradise Fossil Plant, TVA, May 10, 1988.

Will be given approximately two hours of radiation safety training before the end of July 1989. Outline of training is attached.

Experience

1985 - Present Environmental Projects Coordinator, Paradise Fossil Plant, TVA.

Item 7 (continued)

Resume

**Name:** Curtis D. West, Technical Services Supervisor, Paradise Fossil Plant, Tennessee Valley Authority (TVA).

Education/Training

BSME, University of Tennessee at Knoxville, 1973

Licensed P.E., state of Tennessee

Will be given approximately two hours of radiation safety training before the end of July 1989. Outline of training is attached.

Work Experience

1973-1975 Plant Engineer, ALCOA.

Responsible for keeping production equipment operational.

1975-1979 Mechanical Engineer, TVA, Division of Engineering Design, Mechanical Engineering Branch.

1979-1981 Power Supply Engineer, TVA, Power Projects Staff.

Maintained surveillance of TVA progress on consent decree air quality projects.

1981-1987 Mechanical Engineer, TVA, Division of Fossil and Hydro Power, Technical Services Branch.

Evaluated the feasibility and coordinated projects.

1987-1988 Assistant Results Supervisor, Gallatin Fossil Plant, TVA.

1988-  
present Technical Services Supervisor, Paradise Fossil Plant, TVA.

Item 7 (continued)

Resume

Name: Stanley W. Coffman

Education/Training

Associate Engineering Degree, Instrument Engineering, Chattanooga State Technical Institute, 1969.

Bachelor of Science, Electrical Engineer majoring in Instrumentation, University of Tennessee, Knoxville, 1977.

Troxler training course for the use of nuclear testing equipment, October 23, 1985.

Experience

October 1987 - Supervisor, Instrument and Controls, TVA  
present

June 1977 - Instrument Engineer, TVA  
October 1987

August 1981 - Divisional Radiation and Safety Coordinator, Fossil and  
present Hydro Power, TVA. Responsible for the training of fossil and hydro plant personnel in the operation of nuclear instruments.



Item 7 (continued)

Resume

RONALD B. MAXWELL

EDUCATION

B.S., Physics, Tennessee Technological University, 1965  
M.S., Nuclear Physics (Health Physics), North Carolina State  
University, 1971

Other Technical Training

June 1971 - Radiological Monitor Instructor, University of North  
Carolina Extension Division  
December 1971 - Short course on Boiling Water Reactor Operating  
Principles, Tennessee Valley Authority (TVA)  
August 1986 - Short course on Nonionizing Radiations: Biophysical  
and Biological Basis, Applications, and Hazards in  
Medicine and Industry, Massachusetts Institute of  
Technology

EXPERIENCE

1986-Present Senior Health Physicist, TVA, Muscle Shoals, Alabama  
  
Serve as Radiation Protection Officer for a range of  
TVA activities covering X-ray machines, radiography,  
radioisotope tracer studies, nuclear gauges,  
microwaves, etc. Provide agency-wide NRC licensing  
coordination and radiological services and develop and  
issue criteria.

1985-1986 Chief of Dosimetry and Offsite Support, TVA  
  
Supervised staff responsible for providing all  
dosimetry services for TVA activities. Established  
program that was accredited by National Voluntary  
Laboratory Accreditation Program (NVLAP) of the  
National Bureau of Standards.

1979-1985 Chief of Radiological Hygiene Branch, TVA  
  
Planned and carried out activities of the branch which  
developed health physics standards and radiological  
emergency planning and provided radiation surveys,  
environmental monitoring, and dose assessment.

RONALD B. MAXWELL

- 1978 - 1979      Assistant Chief of Radiological Hygiene Branch, TVA
- Assisted branch chief in functions noted above and provided continual program evaluation and appraisal of work objectives for appraisal of program effectiveness.
- 1975 - 1978      Supervisor of Environmental Radiological Assessment Section, TVA
- Supervised staff which performed radiological dose modeling and calculations for environmental impact statements at nuclear power facilities analyzing potential radiological hazards associated with releases of radioactivity. Served as the radiological expert on the Nuclear Safety Review Board for TVA nuclear facilities.
- 1972 - 1975      Health Physicist, Environmental Planning and Assessment Staff, TVA
- Served as staff liaison for program planning for the Breeder Reactor Project and coordinated preparation of radiological aspects of environmental statements for TVA nuclear power plants.
- 1971 - 1972      Health Physicist, Industrial and Radiological Hygiene Branch, TVA
- Prepared radiological input for safety analysis reports and plant technical specifications and provided principal support to section supervisor in preparation for start-up of nuclear power plant health physics program.
- 1967 - 1971      Assistant Radiological Safety Officer, North Carolina State University
- Assisted Radiological Safety Officer in providing radiation protection, monitoring, licensing support, waste disposal, and dosimetry for a variety of radioisotope research activities including a research reactor located on the North Carolina State University campus.
- 1965 - 1967      Health Physicist, Applied Health Physics Division, Oak Ridge National Laboratory
- Provided on-the-job health physics coverage for various activities from hot cell operations with megacurie quantities of radioisotopes to research reactor operations.

RONALD B. MAXWELL

MEMBERSHIPS

Health Physics Society

PUBLICATIONS

Worth Bowman, L. T. Caruthers, and R. B. Maxwell, "Production of Gases of Known Specific Activity in a Reactor for Calibrating Gaseous Effluent Monitors," Health Physics Journal, Volume 20, No. 3, March 1971.

L. T. Caruthers and R. B. Maxwell, "Contamination of a University Printshop Resulting from the Cleaning of a Static Eliminator Device," Health Physics Journal, Volume 21, No. 5, November 1971.



Item 7 (continued)

OUTLINE OF RADIATION SAFETY TRAINING AT PARADISE FOSSIL PLANT

1. Source of nuclear radiation, discussion of decay, isotopes covered by license (Cs-137 and Cm-244).
2. Short discussion Curium-244 (source in storage), only potential hazard from leakage, alpha particles, no direct radiation hazard, leak tested by RS&C.
3. Emphasize Cs-137 in nuclear gauges, discuss gamma radiation, potential hazard from both leakage and direct radiation. RS&C surveys for leakage and direct radiation.
4. Natural radiation doses: cosmic rays, terrestrial, internal, radon.
5. Manmade radiation doses: medical, fall out, nuclear power, industry.
6. Dose limits - NRC and TVA
7. Biological effects of radiation: acute effects and delayed effects.
8. Prenatal effects.
9. Basic operation of nuclear gauges (source, shielding, shutter, detector).
10. Procedures for safe operation of nuclear gauges.
  - A. Lock shutter closed before maintenance of detector.
  - B. No maintenance on source or source holder allowed.
  - C. Do not relocate gauge unless RS&C is present.
11. Emergency procedures (loss, fire, theft, explosion, etc.) - If applicable, evacuate wounded and fight fire, rope off area if source may be damaged. Call RS&C immediately.
12. Conditions of NRC license - Six-month inventory of sources, leak test, records maintenance for inspection, Form NRC-3, warning signs, and license renewal and amendment.
13. How to dispose of a source.

This training supplied by Ronald B. Maxwell, Jesse Coleman, Judy Johnson, or Phillip Llewellyn, resumes attached.

Item 7 (continued)

Resume

JESSE H. COLEMAN

I. EDUCATION AND TRAINING

A. University Education

1. Bachelor of Science, Mathematics, Jacksonville University, Jacksonville, Florida, 1968.
2. Master of Engineering, Environmental Engineering, University of Florida, 1971.
3. Master of Science, Health Physics, Georgia Institute of Technology, 1988.

B. Additional Formal Training and Short Courses - Week or Longer

1. "Radiation Protection Short Courses," Georgia Institute of Technology, one week, May 4-15, 1981.
2. "Internal Radiation Dosimetry," by Ken Scrable, University of Lowell, Massachusetts, one week, January 10-15, 1982.
3. "Pressurized Water Reactor Systems," one week, January 10-14, 1983, TVA, Power Operations Training Center (POTC), Chattanooga, Tennessee.
4. "Boiling Water Reactor Plant Fundamentals," one week, February 28-March 4, 1983, TVA, POTC, Chattanooga, Tennessee.
5. "Applied Health Physics," five weeks, March 23-April 25, 1984, Oak Ridge Associated Universities, Oak Ridge, Tennessee.
6. "Health Physics in Radiation Accidents," one week, September 17-21, 1984, Oak Ridge Associated Universities, REAC/TS, Oak Ridge, Tennessee.
7. "Nonionizing Radiation (583)," National Institute for Occupational Safety and Health, one week, March 16-20, 1987.
8. "Internal Dose Assessment-Fundamentals and Advanced Techniques," Technical Management Services, Inc., one week, October 26-30, 1987.

II. EXPERIENCE

- A. November 1980-Present: Professional Health Physicist working in TVA's radiation protection programs outside of the nuclear power system. Provides primary professional level radiation protection support for about a dozen NRC licensed activities, half a dozen medical X-ray facilities, and all other generally licensed and unlicensed activities using radioactive materials or radiation producing machines. Designs radiation protection programs to satisfy NRC, TVA, and ALARA requirements. Determine instrumentation and survey requirements. Determine requirements for radiation training requirements, and provides training as required.

JESSE H. COLEMAN

- B. April 1971-November 1980: Environmental Engineer, TVA, Muscle Shoals, Alabama. Duties included: design and conduct field studies of atmospheric plumes from cooling towers and coal-fired power plants; supervisor of a six-man field team; evaluation and reporting of data, design of atmospheric models, and computer codes; and assessment of environmental effects of coal-fired power plants and cooling towers.



Item 7 (continued)

Resume

JUDITH BROWN JOHNSON

Education

B.S., Sociology, University of North Alabama, 1972.

Introduction to Health Physics Training, Tennessee Valley Authority (TVA), Pride Building, Muscle Shoals, Alabama. December 7, 1982, through January 4, 1983.

Health Physics Technician Training Program, TVA, Power Operations Training Center (POTC), Chattanooga, Tennessee, (four months). July 8, 1983.

Health Physics Technician In-Plant Phase Training, TVA, Browns Ferry Nuclear Plant, Decatur, Alabama, 20 months, July 9, 1983, through March 9, 1985.

Health Physics Retraining, TVA, POTC, 40 hours, June 1986.

Health Physics Retraining, Browns Ferry Nuclear Plant Training Center, April 11, 1988, through April 15, 1988, 40 hours. Grade: 93%

Troxler Electronic Laboratories Inc. training course for the use of nuclear testing equipment (8 hours), September 27, 1988.

Experience

December 7, 1982 - July 8, 1983 - Health Physics Technician Trainee, TVA, Muscle Shoals, Alabama; TVA, Browns Ferry Nuclear Plant; TVA, Chattanooga; and TVA, POTC.

July 9, 1983 - March 9, 1985 - Senior Health Physics Technician, TVA, Browns Ferry Nuclear Plant.

Duties: Provided health physics coverage of activities for Outage Lab, Plant Lab, Refuel Floor, Drywell, and Turbine Building. Assisted in the training of health physics technician trainees.

October 1986 - November 1987 - Lead Health Physics Technician, TVA, Browns Ferry Nuclear Plant

Duties: Provided direction to senior health physics technicians in performing radiological surveys. Established priorities in job coverage. Assigned health physics coverage as needed.

November 9, 1987 - Present - Health Physics Technician, TVA, Occupational Health and Safety, Radiation Safety and Control, Muscle Shoals, Alabama.

Duties: Provide health physics coverage for nonnuclear power radiological activities. Assist in training of personnel working with radiological materials.

Item 7 (continued)

Resume

PHILLIP L. LLEWELLYN

Education

B.S., Biology and Physics, University of North Alabama, Florence, Alabama, May 1981.

Health Physics Technician Training Program, Tennessee Valley Authority (TVA), Power Operations Training Center, Muscle Shoals, Alabama, six months, April-December 1982.

Health Physics Technician Retraining, TVA, one week, repeated three times, June 1985, June 1987, and May 1989.

Experience

March 1987 - present      Health Physics Technician, TVA, Occupational Health and Safety, Radiation Safety and Control, Muscle Shoals, Alabama.

Performed radiological surveys to ascertain conditions in radiation, high radiation, and contaminated areas. Perform seal source leak tests and other surveys as needed. Provide guidance to workers in maintaining exposures as low as reasonably achievable (ALARA).

June 1984 - March 1987      Senior Health Physics Technician, TVA, Browns Ferry Nuclear Plant, Decatur, Alabama.

Provided job coverage and performed surveys as needed for units in outage or operational. Assisted ALARA Engineer in implementing methods for reducing exposure to plant personnel in a variety of areas.

October 1981 - June 1984      Assistant Health Physics Technician, TVA, Browns Ferry Nuclear Plant.

Received on-the-job training fulfilling ANSI N 18.1-1971 in June 1984.

Item 8

TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

There are no restricted areas associated with this license. The gauges possessed under this license are remotely operated and require no routine operation by workers. The instrument technicians who occasionally work on the electronics of the gauge will be given the training described in Item 7 before the end of July 1989. This training is intended to be equivalent to the training provided by a gauge manufacturer at the time of installation.



Item 9

FACILITIES AND EQUIPMENT

All sealed sources applicable to this by-product material license are mounted on pipe in accordance with the manufacturer's instructions. Removal of the gauges for maintenance will be coordinated with Radiation Safety and Control (RS&C) and is described on the attached sheets. All equipment is standard product lines offered by the manufacturer. These nuclear gauges are mounted on exterior piping of the plant where they are not exposed to excessive temperatures, corrosive atmospheres, or excessive vibration.

Checks for proper shutter operation, checks that labels are legible and visible, and checks that gauges are protected against corrosive materials or materials at high temperature will be conducted annually.

Item 9 (continued)

EMERGENCY PROCEDURES

In the event of loss, theft, misplacement, or damage to a nuclear gauge, contact the following people immediately:

Primary Contact:

Stanley W. Coffman  
Work telephone - (615) 751-3393  
Home telephone - (615) 870-9785

Alternate Contact:

R. L. Moates  
Work telephone - (615) 751-3517  
Home telephone - (615) 842-9153

Mr. Coffman in the primary contact with NRC if necessary.

RS&C should also be contacted in the event of any incident involving the gauges.

During work hours - (205) 386-2314

Home telephone numbers:

Ronald B. Maxwell - (205) 757-1785  
Jesse H. Coleman - (205) 381-4059  
Judith H. Johnson - (205) 757-5403  
Phillip L. Llewellyn - (205) 767-2785

In the event of loss, theft, or misplacement of a nuclear gauge, onsite responsible individuals will immediately begin a search for the missing gauge using appropriate personnel and methods that may vary with circumstances. Consideration should be given to requesting assistance from Public Safety and such measures as halting the removal of scrap and trash until RS&C personnel arrive with sensitive instruments to perform necessary surveys and provide other radiological assistance.

In the event of possible damage such as explosion or collision involving a nuclear gauge, onsite responsible individuals should use their judgment as to the extent of the damage and consider such actions as locking the shutter closed and roping of the area to prevent access until RS&C personnel provide necessary radiological assistance.

In the event of a fire involving a nuclear gauge, control of the fire takes precedent over radiological hazards. However, firefighters should be informed of the location of gauges near the fire and should be warned not to approach or remain near a possible damaged gauge unless necessary. In the event of a fire involving a nuclear gauge, the above telephone contacts should be made as soon as possible.

Item 9 (continued)

BY-PRODUCT MATERIAL SOURCE RELOCATION

In order to perform necessary maintenance on equipment without undue delay or the additional expense of obtaining the service of the manufacturer's representative, we request that the licensee be authorized to remove from installation, relocate, temporarily store, and reinstall all sources.

The sources at Paradise Fossil Plant will be temporarily stored during relocation in a locked storage area which has been designated by the plant as cabinet in file room. The room is located in the powerhouse office wing storage area at an elevation of approximately 443 feet above sea level. A second storage area will be used for the coal wash plant. These sources will be temporarily stored during relocation in a locked storage area which has been designated by the plant as cabinet in east end closet. The closet is located in the coal wash service wing at an elevation approximately 198 feet above ground level.

During storage of radioactive devices, the rooms and cabinets will be locked and keys to the storage rooms will be held by a responsible individual listed in Item 7. The door shall be posted according to NRC requirements.

RS&C will be contacted prior to the relocation or removal of any nuclear gauge and will provide radiological surveillance as appropriate. Gauges will be locked closed before removal or relocation.



Item 9 (continued)

NUCLEAR GAUGE LOCKOUT PROCEDURE

1. Before maintenance, repairs, or other work in the duct, vessel, tank, storage bin, or around the sources, the onsite responsible individual will be notified.
2. The responsible individual will assure that:
  - A. The manual shutter-actuating mechanism is moved to the "closed" position.
  - B. Shutter is locked in "closed" position with a padlock and then tagged "out of service."
3. Necessary maintenance or repair will be performed.
4. After the work is complete the responsible individual will assure that:
  - A. Unlock the shutter.
  - B. Open and close the shutter several times to ensure proper operation.
  - C. Remove the "hold" tag and return the source holder to service.

NOTE: TVA Occupational Safety Procedure for Fossil Plants Number 300 Clearance Procedure and TVA Confined Space Entry Standard Number 006 will be followed. (Space Entry Standard Number 006 will be used in place of Safety Procedure Number 508 as called for in Number 300 Clearance Procedure until Number 508 is released.)

## RADIATION SAFETY PROGRAM

The radiation safety expertise for this license is provided by TVA's Radiation Safety and Control (RS&C), and the day-to-day onsite operational aspects are supervised by onsite responsible individuals named in Item 7. RS&C will provide such functions as leak tests and radiation surveys, and surveillance during special situations such as gauge relocation, etc. Onsite responsible individuals will ensure the day-to-day operational safety of the gauges.

Routine maintenance of the gauges is performed only on the detector and never the source holder. Workers will perform routine maintenance on the gauges only after locking the shutter in the "closed" position. Worker training is described in Item 8. Thermoluminescent Dosimeters (TLDs) are not required during routine maintenance.

Nonroutine maintenance such as removal or relocation of a gauge will be performed only in the presence of a member of RS&C who will provide health physics coverage. TLDs will be worn by workers during the removal or relocation of gauges. These TLDs will be issued on a temporary basis by RS&C. TVA presently uses the Panasonic TLD System including UD802 and UD807 badges and model 702 and 710 readers. Similar equipment may be substituted in the future. The overall TLD system has been accredited by the National Voluntary Laboratory Accreditation Program.

Radiation detection instruments are also not routinely required but will be available at RS&C. Typical survey instruments include: Eberline Model E-530 Geiger counter and Ludlum Model 14C survey meter. Other equivalent instruments may be substituted as necessary. These survey instruments are calibrated, operable, and can measure at least 1 through 200 milliroentgens per hour. These instruments will be calibrated by TVA's Western Area Radiological Laboratory (WARL). Instruments will be calibrated so that readings are  $\pm 20$  percent (or less) of the actual values over the range of the instrument. The date of the last calibration and the due date of the next calibration will be affixed to the survey meters. Survey meters will be calibrated annually, or more often, and after any maintenance. Instrument calibration records will be maintained for a minimum of two years after calibration.

Leak testing will be performed by RS&C members including but not limited to Phillip Llewellyn, Judy Johnson, Jesse Coleman, or Ronald Maxwell (resumes elsewhere in this application), using standard techniques. The leak test sample shall be taken from the source or from appropriate accessible surfaces of the device in which the sealed source is permanently mounted. Test sensitivity will permit detection of 0.005 microcurie or less. Smears will be analyzed by RS&C or at WARL using a low background gas proportional counter or equivalent instrument or by using a Ludlum model 210 detector and a Ludlum model 2200 Scaler Ratemeter or by a similar instrument. Similar instruments may be substituted if necessary. Leak tests will be conducted at intervals not to exceed three years.

Item 10 (continued)

Sample calculation:

$$\frac{c/m}{\text{efficiency } \frac{(c/m)}{d/m} \times 2.22 \times 10^6 \frac{d/m}{\mu Ci}} = \mu Ci$$

Records of leak test results shall be maintained for inspection for a period of not less than two years.

All of these nuclear gauges are mounted on pipes of various sizes. Most of the pipes are too small to permit a worker to enter the beam. Several of the gauges are mounted on pipes that are large enough to permit a worker to fit inside them. Only under the most extremely unusual circumstances would a worker ever enter the inside of these pipes near the gauges. Under this circumstance, the nuclear gauge shutter would be locked in the "closed" position. The shutter will also be locked in the "closed" position whenever maintenance is being performed on the detector and during removal, relocation, storage, or shipping.



Item 11

The sources will be returned to the manufacturer for disposal or transferred to an organization licensed to receive these by-product materials. TVA or a licensed contractor will remove and ship the sources in accordance with the relocation procedures submitted with this application and NRC transportation regulations.

# CONVERSATION RECORD

TIME

DATE

TYPE

*Sandra* VISIT CONFERENCE TELEPHONE INCOMING OUTGOING

Location of Visit/Conference: \*

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU

*Jesse Coleman*

ORGANIZATION (Office, Dept., Bureau, etc.)

*TVA*

TELEPHONE NO.

*205-386-2993*

ROUTING

NAME/SYMBOL INT

SUBJECT

*control (252545)**Request 30 da.*

SUMMARY

*Extension on def. ltr -**Told him OK**He will confirm in**writing ltr post marked**5/26/89**ETW***ACTION REQUIRED**

NAME OF PERSON DOCUMENTING CONVERSATION

SIGNATURE

DATE

**ACTION TAKEN**

SIGNATURE

TITLE

DATE

M47 890516 122  
TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

3S 61K Lookout Place  
1101 Market Street

May 24, 1989

U.S. Nuclear Regulatory Commission  
Attention: Ms. Sandra Waldron, License Reviewer  
Region II  
101 Marietta Street, N.W.  
Atlanta, Georgia 30323

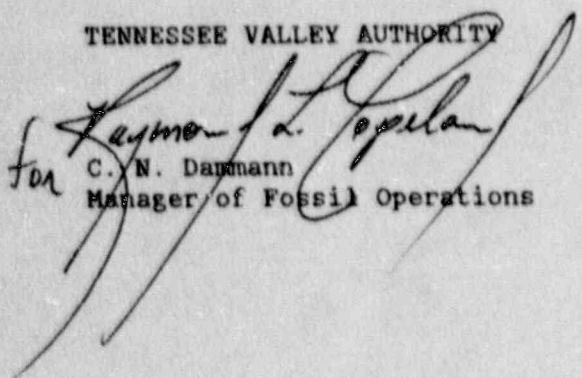
Dear Ms. Waldron:

REQUEST FOR ADDITIONAL INFORMATION CONCERNING A MATERIAL LICENSE APPLICATION  
(REFERENCE: 252545 030-06380) - YOUR LETTER TO ME DATED APRIL 26, 1989

As discussed on May 15, 1989, between Jesse Coleman, of TVA, and you, we  
request a 30-day extension to prepare a response to your request for  
additional information.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*for*   
C. N. Dammann  
Manager of Fossil Operations



APR 26 1989

Official

OFFICIAL RECORD COPY

Tennessee Valley Authority  
Fossil Operations  
35 61K Lookout Place  
Chattanooga, TN 37402-2801  
ATTN: C.N. Danman, Manager of Fossil Operations

Gentlemen:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION CONCERNING A MATERIAL LICENSE APPLICATION (REFERENCE: 252545 030-06380)

This refers to your letter/application dated November 28, 1988, for renewal to License Number 41-08165-01. The following additional information is needed in support of your request:

1. The Model number for the Industrial Nucleonics gauge listed in item 5 is a model number for an Ohmart gauge. Please submit the proper model number for the Industrial Nucleonics gauge.
2. Refer to item 7 of the enclosed Guide for the Preparation of Applications for Licenses for the use of Sealed Sources in Nonportable Gauging Devices for the Individuals responsible for Radiation Safety Program. Follow the guide for each responsible individual in your program.
3. Refer to item 8 of the enclosed Guide for the Preparation of Applications for licenses for the use of Sealed Sources in Nonportable Gauging Devices and describe how your training to other users meets the listed requirements. The specific criteria for manufacturer training provided to customers can be found in item 8.2 of the Guide for the Preparation of Applications for Licenses for the Use of Radioactive Materials in Servicing Preregistered Gauges Measuring Devices and Sealed Sources Used in such Devices. This guide is also enclosed for your reference.
4. Please submit information on the maintenance of the gauges in accordance with item 9.5 of the enclosed guide for nonportable gauging devices.
5. Please state that the workers performing the work stated in item 10 of your application will receive the required training before performing the tasks under the supervision of the responsible individual.
6. Please state that workers performing service on the gauges such as relocation or shipping will be provided with Personnel monitoring equipment. Specify the type of devices that will be used and the frequency of their exchange.

Our review of your application will continue upon receipt of the above information. Please provide two copies of your reply and reference Mail Control Number 252545.

APR 20 1989

Tennessee Valley Authority

2

If we do not receive a reply from you within thirty (30) calendar days from the date of this letter, we shall assumed that you do not wish to pursue your application.

If you should have any questions, do not hesitate to contact me at (404) 331-2687.

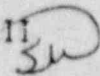
Sincerely,




Sandra Waldron, License Reviewer  
Nuclear Materials Safety Section

Enclosures:

1. Guide for the Preparation of Applications for Licenses for the use of Sealed Sources in Nonportable Gauging Devices
2. Guide for the Preparation of Applications for Licenses for the Use of Radioactive Materials in Servicing Preregistered Gauges, Measuring Devices, and Sealed Sources Used in Such Devices

RII  
  
SWaldron  
4/25/89

RII  
  
CHosey  
4/25/89



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

DEC 07 1988

"OFFICIAL RECORD COPY"

Tennessee Valley Authority  
ATTN: C. N. Dammann  
Fossil Operations  
3S 61K Lookout Place  
Chattanooga, TN 374022801

Docket No. 030-06380  
License No. 41-08165-01  
Control No. 252545

Gentlemen:

SUBJECT: LICENSE RENEWAL APPLICATION

This is to acknowledge receipt of your application for renewal of the nuclear material license identified above. Your application is deemed timely filed, and accordingly, the license will not expire until final action has been taken by this office.

Any correspondence regarding your renewal application should reference the control number and license number specified above.

Sincerely,

A handwritten signature in cursive script that reads "Carol Conwell".

Nuclear Materials Safety Section  
Division of Radiation Safety  
and Safeguards



TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

3S 61K Lookout Place

November 28, 1988

U.S. Nuclear Regulatory Commission, Region II  
Attention: John Potter  
Nuclear Materials Safety Section  
101 Marietta Street, Suite 2900  
Atlanta, Georgia 30323

Gentlemen:

BY-PRODUCT MATERIAL LICENSE APPLICATION 41-08165-01 - PARADISE FOSSIL PLANT

Enclosed are two copies of completed NRC form 313 for the renewal and amendment application of a by-product material license for Tennessee Valley Authority's Paradise Fossil Plant. If any additional information is required, please contact S. W. Coffman in Chattanooga, Tennessee, at (615) 751-3393.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



C. N. Dammann  
Manager of Fossil Operations

Enclosures