



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

CNL-20-034

April 6, 2020

10 CFR 30.38

Licensing Assistance Team
Division of Nuclear Materials Safety
U.S. Nuclear Regulatory Commission, Region I
2100 Renaissance Boulevard, Suite 100
King of Prussia, PA 19406-2713

Tennessee Valley Authority
Materials License Number 41-25219-01
Docket Number 030-32925

Subject: **By-Product Materials License Number 41-25219-01 for Tennessee Valley Authority's Cumberland and Paradise Fossil Plants – Application to Amend Materials License to Delete the Paradise Fossil Plant as a Location of Use**

The purpose of this letter is to request an amendment of Nuclear Regulatory Commission (NRC) Materials License Number 41-25219-01 to delete the Paradise Fossil Plant as a location of use identified in License Condition 10. On February 1, 2020, Paradise Fossil Plant ceased all principal activities that required the use of licensed materials on site. In addition, the VEGA Americas Model SHLD1 fixed gauge listed in License Conditions 6 through 9 D may be deleted as TVA no longer possesses this gauge model as a result of the closure of this location of use. Lastly, TVA personnel were recently informed that the NRC may extend the expiration date of a materials license by an additional five years upon request by the licensee. TVA hereby requests the NRC extend the expiration date of NRC Materials License Number 41-25219-01 by an additional five years.

On February 27, 2020, all NRC licensed sources which were removed from their use and storage locations at the Paradise Fossil Plant were transferred to the Toxco Materials Management Center in Oak Ridge, Tennessee. While in use at the Paradise Fossil Plant, there was no history of any specifically licensed sealed sources or devices having a sealed source leak test that exceeded the limits specified in License Condition 13 D. However, one generally licensed sealed source leak test for a Nickel 63 source obtained on February 4, 2004, and analyzed on February 11, 2004, did exceed 0.005 microcuries. A copy of the 30-day notification letter TVA sent to the NRC on March 10, 2004, is provided in Enclosure 4. There was no history of any events which may have caused the accidental release of radioactive material from the specifically or generally licensed sealed sources and devices used and stored at the Paradise Fossil Plant.

U.S. Nuclear Regulatory Commission
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Enclosure 1 is the original, signed NRC Form 313 requesting amendment of the subject license. Copies of the shipping papers, inventory records, Radiological Survey Forms, leak test records, and the letter confirming Toxco Materials Management Center receipt of the materials listed on Manifest (Shipment) Number RSS 20-005 (five devices containing Cesium 137) are provided in Enclosure 2. Similar documents and records for Manifest (Shipment) Number RSS 20-006 (two devices containing Nickel 63) are provided in Enclosure 3.

There are no new regulatory commitments in this correspondence. Should you have any questions regarding this license renewal request, please contact Kimberly Hulvey, Fleet Licensing Manager, at (423) 751-3275.

Respectfully,

A handwritten signature in black ink, appearing to read "James Barstow". The signature is fluid and cursive, with the first name "James" and last name "Barstow" clearly distinguishable.

James Barstow
Vice President, Nuclear Regulatory Affairs & Support Services

Enclosure(s):

1. NRC Form 313, "Application for Materials License," Materials License Number 41-25219-01
2. Manifest (Shipment) Number RSS 20-005 Documents and Records
3. Manifest (Shipment) Number RSS 20-006 Documents and Records
4. 30-Day Notification of Leak Test Results

Enclosure 1

**NRC Form 313
“Application for Materials License”**

Materials License Number 41-25219-01

NRC FORM 313

(01-2020)
10 CFR 30, 32,
33, 34, 35, 36,
37, 39, and 40

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR
MATERIALS LICENSE

APPROVED BY OMB: NO. 3150-0120

EXPIRES: 01/31/2023

Estimated burden per response to comply with this mandatory collection request: 4.3 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. Send comments regarding burden estimate to the Information Services Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollcts.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

INSTRUCTIONS: SEE THE CURRENT VOLUMES OF THE NUREG-1556 TECHNICAL REPORT SERIES ("CONSOLIDATED GUIDANCE ABOUT MATERIALS LICENSES") FOR DETAILED INSTRUCTIONS FOR COMPLETING THIS FORM: <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/>. SEND TWO COPIES OF THE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

MATERIALS SAFETY LICENSING BRANCH
DIVISION OF MATERIAL SAFETY, STATE, TRIBAL AND RULEMAKING PROGRAMS
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:

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA,
GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE,
NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO,
RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN
ISLANDS, OR WEST VIRGINIA,

SEND APPLICATIONS TO:

LICENSING ASSISTANCE TEAM
DIVISION OF NUCLEAR MATERIALS SAFETY
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PA 19406-2713

IF YOU ARE LOCATED IN:

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

MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

IF YOU ARE LOCATED IN:

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS,
LOUISIANA, MISSISSIPPI, 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 BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
1600 E. LAMAR BOULEVARD
ARLINGTON, TX 76011-4511

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 41-25219-01☐ C. RENEWAL OF LICENSE NUMBER

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

Tennessee Valley Authority
Vice President, Nuclear Regulatory Affairs & Support Services
LP-4A-C
1101 Market Street, Chattanooga, TN 37402-2801

3. ADDRESS WHERE LICENSED MATERIALS WILL BE USED OR POSSESSED

Cumberland Fossil Plant
815 Cumberland City Road
Cumberland City, TN
(87.652 W; 36.394 N)

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Kimberly D. Hulvey

BUSINESS TELEPHONE NUMBER
(423) 751-3275

BUSINESS CELLULAR TELEPHONE NUMBER
(931) 581-5423

BUSINESS E-MAIL ADDRESS
kdhulvey@tva.gov

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. LICENSE FEES (Fees required only for new applications, with few exceptions*)

(See 10 CFR 170 and Section 170.31)

*Amendments/Renewals that increase the scope of the existing license to a new or higher fee category will require a fee.

FEE
CATEGORYAMOUNT
ENCLOSED \$

PER THE DEBT COLLECTION IMPROVEMENT ACT OF 1996 (PUBLIC LAW 104-134), YOU ARE REQUIRED TO PROVIDE YOUR TAXPAYER IDENTIFICATION NUMBER. PROVIDE THIS
INFORMATION BY COMPLETING NRC FORM 531: <https://www.nrc.gov/reading-rm/doc-collections/forms/nrc531info.html>.

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, 37, 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

James Barstow
VP, Nuclear Regulatory Affairs & Support Services

SIGNATURE

DATE

April 6, 2020

FOR NRC USE ONLY

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

Enclosure 2

Manifest (Shipment) Number RSS 20-005

Documents and Records

WMG Inc. RADIOACTIVE MATERIAL MANIFEST SHIPPING PAPERS		5. SHIPPER - NAME AND FACILITY John J. Burke TVA Paradise Fossil Plant 13246 ST RTE 176 STE 10 Drakesboro, KY 42337		7. PAGE <u>1</u> OF <u>1</u> PAGE(S)		8. MANIFEST NUMBER (Use this number on all continuation pages) RSS20-005	
		SHIPPER LICENSE NUMBER 41-08165-08		SHIPMENT NUMBER RSS20-005		9. CONSIGNEE - Name and Facility Address Torco Materials Management Center 109 Flint Road Oak Ridge, Tennessee 37830 License R-01037-J26	
1. EMERGENCY TELEPHONE NUMBER (Include Area Code) (800) 237-2322		CONTACT John J. Burke		TELEPHONE NUMBER (Include Area Code) (256) 386-3019		CONTACT Rick Low	
ORGANIZATION TVA Operations Duty Specialist		6. CARRIER - Name and Address TVA - Transportation Services 219 River Road Muscle Shoals, Alabama 35661		EPA ID NUMBER N/A		TELEPHONE NUMBER (Include Area Code) (865) 482-5532	
2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ***** 1		SHIPPING DATE 02/27/2020		SIGNATURE - Authorized consignee acknowledging receipt DATE	
4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If "Yes," provide Manifest Number *****		EPA MANIFEST NUMBER N/A		CONTACT Ricky Holden SIGNATURE-Authorized carrier acknowledging material <i>Ricky Holden</i>		TELEPHONE NUMBER (Include Area Code) (256) 314-7838 DATE <u>02/27/2020</u>	
11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including UN ID number, proper shipping name, hazard class, and any additional information)		12. DOT LABEL YELLOW II		13. RAD LEVEL mSv/hr CONTACT T.I. 5.00E-03 0.2 0.5		14. PHYSICAL AND CHEMICAL FORM Solid/ Silicate	
UN2915, Radioactive material, Type A package, 7 1 Metal Box Radioactive Source(s)		YELLOW II		5.00E-03 0.2 0.5		Solid/ Silicate	
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Package Characterization Report Material

WMG Suite 9.4.1

Printed On: 02/24/2020 From Package Listing

Activity Decayed To: 02/27/2020

Method Used: RadioactiveSources

Signature:

Date:



JJ Buick
2/27/2020

Date:	02/27/2020	Liner Serial No:	N/A
Package ID:	12470	Container Type:	B-12 Type A Box
Waste Class:	N/A	DOT Package Class:	Type A
Description:	N/A	Chelating Agent:	N P
Chemical Form:	Silicate	Weight % Chelating:	N P
Physical Form	Solid	Material Weight (lbs):	253.0
Material Volume (ft³):	1.77E-04	Package Weight (lbs):	913.0
Package Volume (ft³):	65	3 Meter Dose (mR/hr):	N/A
Dose / Curie Factor:	N/A	Material Height (in):	23
Max Contact Rad Level (mR/hr): 0.5		Max 1 Meter Rad Level (mR/hr): 0.2	Survey Date: 02/27/2020

Package Activity By Nuclide			
Nuclide	(mCi)	Nuclide	(mCi)
Cs-137	8.21E+01		
# - Indicates Override			TOTAL: 8.21E+01

Source Information				
Source ID	Physical Form	Weight (gms)	Volume (cc's)	Activity (mCi)
97187B	Solid	29,484.0	1	2.92E+00
97188B	Solid	29,484.0	1	2.92E+00
B4047	Solid	18,597.0	1	3.46E+01
B4048	Solid	18,597.0	1	3.46E+01
B4327	Solid	18,597.0	1	7.13E+00
Total Activity (mCi):				8.21E+01

Radioactive Material Shipment RSS20-005 Inventory

Shipping container: B-12 Box Number 12470

Nuclear Gauge Serial Number	Radioisotope/ Quantity / Assay Date	Gauge Manufacturer/ Model Number	Device Weight	Shutter On/Off Mechanism Test Results
B4048	Cs-137 / 50 mCi/ 1-2004	Thermo MeasureTech/ 5201	41 Lbs	Functional
B4047	Cs-137 / 50 mCi/ 1-2004	Thermo MeasureTech/ 5201	41 Lbs	Functional
B4327	Cs-137 / 10 mCi/ 5-2005	Thermo MeasureTech/ 5201	41 Lbs	Functional
97187B	Cs-137 / 3 mCi / 12-2018	Vega Americas / SHLD-1	65 Lbs	Functional
97188B	Cs-137 / 3 mCi / 12-2018	Vega Americas / SHLD-1	65 Lbs	Functional

Radiological Survey Form


Survey #: RS19-159

Survey Description	Survey Location	Survey Date	Surveyor
Nuclear Gauge Shutter Check	Paradise Fossil Plant	9/26/2019	JJ Burke

ND - None Detected N/A - Not Applicable

Item or Location	Time	DOSE RATE				CONTAMINATION				INSTRUMENTS		Remarks
		Dist.	BETA mrem/hr	GAMMA mrem/hr	TOTAL mrem/hr	Direct CPM	Transferable dpm/100cm ²	Type	Smear Number(s)	Type	TVA Tag #	
Nuclear Gauge B4047	1230	Open	N/A	5	5	N/A	Note 1	N/A	1	Lud 14-C	951434	Shutter Functional Test Sat.
		Closed	N/A	1	1	N/A	N/A	N/A	N/A	Tele II	951434	Note 1: Leak Test Results <0.005uCi. Results attached.
		30 cm	N/A	0.1	0.1	N/A	N/A	N/A	N/A			
Nuclear Gauge B4048	1240	Open	N/A	5	5	N/A	Note 1	N/A	2			Shutter Functional Test Sat.
		Closed	N/A	1	1	N/A	N/A	N/A	N/A			Note 1: Leak Test Results <0.005uCi. Results attached.
		30 cm	N/A	0.1	0.1	N/A	N/A	N/A	N/A			
Nuclear Gauge B4327	1315	Open	N/A	0.3	0.3	N/A	Note 1	N/A	3			Shutter Functional Test Sat.
		Closed	N/A	< 0.1	< 0.1	N/A	N/A	N/A	N/A			Note 1: Leak Test Results <0.005uCi. Results attached.
		30 cm	N/A	< 0.1	< 0.1	N/A	N/A	N/A	N/A			
Nuclear Gauge 97187B	1340	Open	N/A	3	3	N/A	Note 1	N/A	4			Shutter Functional Test Sat.
		Closed	N/A	0.1	0.1	N/A	N/A	N/A	N/A			Note 1: Leak Test Results <0.005uCi. Results attached.
		30 cm	N/A	< 0.1	< 0.1	N/A	N/A	N/A	N/A			
Nuclear Gauge 97188B	1358	Open	N/A	3	3	N/A	Note 1	N/A	5			Shutter Functional Test Sat.
		Closed	N/A	0.1	0.1	N/A	N/A	N/A	N/A			Note 1: Leak Test Results <0.005uCi. Results attached.
		30 cm	N/A	< 0.1	< 0.1	N/A	N/A	N/A	N/A			

Reviewed By

 **W. Cain**

Date

12/12/2019

Type of Survey

☒ Routine ☐ Important for Decommissioning ☐ N/A

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Company : TVA Western Area Radiological Laboratory

Address : 1010 Reservation Road
Complex H
Muscle Shoals, Alabama 35662

Contact: William Lee Cain

Project: Radiochemistry Analytical Services

Report Date: October 15, 2019

Page 1 of 1

SDG: 491875

Notes: 1. LLDs are a-priori values.
2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

Qualifiers: U - Target isotope was analyzed for but not detected above the MDC and LLD.

UI – Uncertain identification for gamma spectroscopy.

Page 3 of 8 SDG-1491-specific qualifier—please see case narrative, data summary package or contact your project manager for details.

M - Reported result is less than the LLD and greater than the MDC.



Toxco Materials Management Center (TMMC)
109 Flint Road, Oak Ridge, TN 37830
Phone: 865-482-5532 Fax: 865-482-5605

February 28, 2020

John Burke
TVA Paradise Fossil Plant
219 River Road
Muscle Shoals, AL 35661

Dear Mr. Burke:

The attached signed shipping manifest copies are your notice of receipt and acceptance of the radioactive materials specified on the manifests. The following manifest has been assigned the incoming shipping tracking number at the TMMC of **A200065**.

Manifest Number

Date Received

RSS 20-005

2-27-20

This is acknowledgement of receipt only.

Sincerely,

A handwritten signature in blue ink that reads "Marybeth Bryson".

Marybeth Bryson
Administrative Assistant
Toxco Materials Management Center www.toxcommc.com
109 Flint Road Oak Ridge, TN 37830
P: 865-482-5532
F: 865-482-5605
E: mbryson@toxcommc.com

RS\$20-005 Page 1 of 3

Enclosure 3

Manifest (Shipment) Number RSS 20-006

Documents and Records

WMG Inc. RADIOACTIVE MATERIAL MANIFEST SHIPPING PAPERS			5. SHIPPER - Name and Facility John J. Burke TVA Paradise Fossil Plant 13246 ST RTE 175 STE 10 Drakesboro, KY 42337			7. PAGE <u>1</u> OF <u>1</u> PAGE(S)		8. MANIFEST NUMBER (Use this number on all continuation pages) R5520-006	
			SHIPPER LICENSE NUMBER 41-08165-08 SHIPMENT NUMBER R5520-006		9. CONSIGNEE - Name and Facility Address Toxco Materials Management Center 109 First Road Oak Ridge, Tennessee 37830 License R-01037-J26		CONTACT Rick Low TELEPHONE NUMBER (Include Area Code) (865) 482-6532		
1. EMERGENCY TELEPHONE NUMBER (Include Area Code) (865) 237-2322 ORGANIZATION TVA Operations Duty Specialist			CONTACT John J. Burke 6. CARRIER - Name and Address UPS 55 Glenlake Parkway NE Atlanta, Georgia 30328		TELEPHONE NUMBER (Include Area Code) (258) 386-3019 EPA ID NUMBER N/A SHIPPING DATE 02/27/2020		SIGNATURE - Authorized consignee acknowledging receipt 10. CERTIFICATION "This is to certify that the herein named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation."		
2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST 2		4. DOES EPA REGULATED WASTE REQUIRE A MANIFEST ACCOMPANY THIS SHIPMENT? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If "Yes," provide Manifest Number		EPA MANIFEST NUMBER N/A DATE N/A		
11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including UN ID number, proper shipping name, hazard class, and any additional information)			12. DOT LABEL		13. RAD LEVEL mSv/hr mrem/hr CONTACT 1.00E-04 1.00E-02		14. PHYSICAL AND CHEMICAL FORM Solid/ Metal Oxides		
UN2811, Radioactive material, excepted package - instruments, 7 1 Plastic Case Fluorolaser Instrument			N/A		N/A N/A		Ni-63 Solid/ Metal Oxides		
UN2811, Radioactive material, excepted package - instruments, 7 1 Plastic Case Fluorolaser Instrument			N/A		1.00E-04 1.00E-02		Ni-63 Solid/ Metal Oxides		
UN2811, Radioactive material, excepted package - instruments, 7 1 Plastic Case Fluorolaser Instrument			N/A		1.00E-04 1.00E-02		Ni-63 Solid/ Metal Oxides		
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UN2811, Radioactive material, excepted package - instruments, 7 1 Plastic Case Fluorolaser Instrument			N/A		1.00E-04 1.00E-02		Ni-63 Solid/ Metal Oxides		

Package Characterization Report **Material**

WMG Suite 9.4.1

Printed On: 02/25/2020 From Package Listing

Activity Decayed To: 02/27/2020

Method Used: Instruments

Signature:

Date:



[Signature]
2/27/2020

Date:	02/27/2020	Liner Serial No:	N/A
Package ID:	N054	Container Type:	Pelican Case SF6
Waste Class:	N/A	DOT Package Class:	Exempt Quantity
Description:	N/A	Chelating Agent:	N P
Chemical Form:	Metal Oxides	Weight % Chelating:	N P
Physical Form	Solid	Material Weight (lbs):	25.0
Material Volume (ft³):	3.53E-05	Package Weight (lbs):	35.0
Package Volume (ft³):	2.2	3 Meter Dose (mR/hr):	N/A
Dose / Curie Factor:	N/A	Material Height (in):	10.25

Max Contact Rad Level (mR/hr): 0.01 Max 1 Meter Rad Level (mR/hr): 0.01 Survey Date: 02/27/2020

Package Activity By Nuclide			
Nuclide	(mCi)	Nuclide	(mCi)
Ni-63	5.00E+00		
# - Indicates Override			TOTAL: 5.00E+00

Articles And Instruments Information					
Article ID	Physical Form	Weight (gms)	Volume (cc's)	Activity (mCi)	4 in. Dose (mR/hr)
N054	Solid	11,340.0	1	5.00E+00	0.01
Total Activity (mCi):				5.00E+00	

Package Characterization Report **Material**

WMG Suite 9.4.1

Printed On: 02/25/2020 From Package Listing

Activity Decayed To: 02/27/2020

Method Used: Instruments

Signature:

Date:

[Signature]
2/27/2020

Date:	02/27/2020	Liner Serial No:	N/A
Package ID:	N954	Container Type:	Pelican Case SF6
Waste Class:	N/A	DOT Package Class:	Exempt Quantity
Description:	N/A	Chelating Agent:	N P
Chemical Form:	Metal Oxides	Weight % Chelating:	N P
Physical Form:	Solid	Material Weight (lbs):	25.0
Material Volume (ft³):	3.53E-05	Package Weight (lbs):	35.0
Package Volume (ft³):	2.2	3 Meter Dose (mR/hr):	N/A
Dose / Curie Factor:	N/A	Material Height (in):	10.25

Max Contact Rad Level (mR/hr): 0.01 **Max 1 Meter Rad Level (mR/hr):** 0.01 **Survey Date:** 02/27/2020

Package Activity By Nuclide			
Nuclide	(mCi)	Nuclide	(mCi)
Ni-63	5.00E+00		
TOTAL:			5.00E+00

- Indicates Override

Articles And Instruments Information					
Article ID	Physical Form	Weight (gms)	Volume (cc's)	Activity (mCi)	4 in. Dose (mR/hr)
N954	Solid	11,340.0	1	5.00E+00	0.01
Total Activity (mCi):				5.00E+00	

Radioactive Material Shipment RSS20-006 Inventory

Shipping container: Individual Instrument Cases

Instrument Name	Instrument Model Number	Foil Serial Number	Source Serial Number	Radioactive Isotope	Activity or Quantity/
Vici-valco Instruments Co., Inc.	101/140-BN Electron Capture Detector	1193.20	N054	Ni-63	5.0 mCi
Vici-valco Instruments Co., Inc.	101/140-BN Electron Capture Detector	15.0321	N954	Ni-63	5.0 mCi

Radiological Survey Form

Survey #: RS19-158

Survey Description	Survey Location	Survey Date	Surveyor
6 Month Routine PAF Fluorotracers	Paradise Fossil Plant	9/26/2019	JJ Burke

ND - None Detected

N/A - Not Applicable

Item or Location	Time	DOSE RATE				CONTAMINATION				INSTRUMENTS		Remarks
		Dist.	BETA mrem/hr	GAMMA mrem/hr	TOTAL mrem/hr	Direct CPM	Transferable dpm/100cm ²	Type	Smear Number(s)	Type	TVA Tag #	
Fluorotracer Source # N054	1215	N/A	N/A	N/A	N/A	N/A	Note 1	β	1-2	N/A	N/A	Note 1: Leak Test Results <0.005uCi Results are attached
		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Fluorotracer Source # N954	1220	N/A	N/A	N/A	N/A	N/A	Note 1	β	3-4	N/A	N/A	Note 1: Leak Test Results <0.005uCi Results are attached
		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

Reviewed By

 **W. Cain**

Date

12/12/2019

Type of Survey

☒ Routine

☐ Important for Decommissioning

☐ N/A

E3-6

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Company : TVA Western Area Radiological Laboratory
Address : 1010 Reservation Road
Complex H
Muscle Shoals, Alabama 35662
Contact: William Lee Cain
Project: Radiochemistry Analytical Services

Report Date: October 16, 2019
Page 1 of 1

Notes: 1. LLDs are a-priori values.
2. MDCs are calculated a-posteriori values.
3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
4. Basis: "W" indicates results "As Received"; "D" indicates results "Dry Weight Corrected".

Qualifiers: U – Target isotope was analyzed for but not detected above the MDC and LLD.
 U1 – Uncertain identification for gamma spectroscopy.

Page 3 of 8 SDG 1.49-1830-2
 M - Reported result is less than the LLD and greater than the MDC.



Toxco Materials Management Center (TMMC)
109 Flint Road, Oak Ridge, TN 37830
Phone: 865-482-5532 Fax: 865-482-5605

March 3, 2020

John Burke
TVA Paradise Fossil Plant
219 River Road
Muscle Shoals, AL 35661

Dear Mr. Burke:

The attached signed shipping manifest copies are your notice of receipt and acceptance of the radioactive materials specified on the manifests. The following manifest has been assigned the incoming shipping tracking number at the TMMC of **A200066**.

Manifest Number

Date Received

RSS 20-006

3-2-20

This is acknowledgement of receipt only.

Sincerely,

A handwritten signature in blue ink that reads "Marybeth Bryson".

Marybeth Bryson
Administrative Assistant
Toxco Materials Management Center www.toxcommc.com
109 Flint Road Oak Ridge, TN 37830
P: 865-482-5532
F: 865-482-5605
E: mbryson@toxcommc.com

RADIOACTIVE MATERIAL MANIFEST SHIPPING PAPERS		1. EMERGENCY TELEPHONE NUMBER (include Area Code) (800) 277-2322 ORGANIZATION TVA Operations Duty Specialist				2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? <div style="display: flex; align-items: center;"> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div>				3. TOTAL NUMBER OF PACKAGE(S) IDENTIFIED ON THIS MANIFEST <div style="text-align: center;">2</div>		4. DOES EPA REGULATE WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? <div style="display: flex; align-items: center;"> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO </div> If "Yes," provide Manifest Number:				5. EPA MANIFEST NUMBER <div style="text-align: center;">N/A</div>				6. SHIPPER LICENSE NUMBER 41-08185-08 CONTACT John J. Burke 7. CARRIER - Name and Address UPS 55 Glenlake Parkway NE Atlanta, Georgia 30328				8. SHIPMENT NUMBER RSS20-008 TELEPHONE NUMBER (include Area Code) (256) 395-3019 EPA I.D. NUMBER N/A SHIPPING DATE 02/27/2020				9. CONSIGNEE - Name and Facility Address Tocco Materials Management Center 109 Flint Road Oak Ridge, Tennessee 37830 License B-51037-08 SIGNATURE - Authorized consignee acknowledging receipt 				CONTACT Rick Low TELEPHONE NUMBER (include Area Code) (865) 482-5532 DATE 3/2/20			
		10. CERTIFICATION This is to certify that the herein - named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.				AUTHORIZED SIGNATURE 				TITLE 				DATE 																					
11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (including UN ID number, proper shipping name, hazard class, and any additional information)						12. DOT LABEL		13. RAD LEVEL mSv/hr mrem/hr		14. PHYSICAL AND CHEMICAL FORM		15. INDIVIDUAL RADIONUCLIDES		16. TOTAL PACKAGE ACTIVITY SI UNITS		17. LSA / SCO CLASS		18. TOTAL WEIGHT OR VOLUME (Use appropriate units)		19. IDENTIFICATION NUMBER OF PACKAGE															
UN2911, Radioactive material, excepted package - instruments, 7 1 Plastic Case Fluorotracer instrument						N/A		CONTACT		T.I.		Radionuclide		Radionuclide		Radionuclide		N/A		N/A															
								1.00E-04		N/A		Solid/ Metal Oxides		Ni-63		Radionuclide		1.85E+02 MBq (5.00E+00) mCi		N/A		15.9 Kg 35.0 Lbs		N054											
UN2911, Radioactive material, excepted package - instruments, 7 1 Plastic Case Fluorotracer instrument						N/A		1.00E-04		N/A		Solid/ Metal Oxides		Ni-63		Radionuclide		N/A		N/A															
								1.00E-02										1.85E+02 MBq (5.00E+00) mCi		N/A		15.9 Kg 35.0 Lbs		N054											

Enclosure 4

Generally Licensed Device

30-Day Notification of Leak Test

EOM

L44 040310 800



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

March 10, 2004

10 CFR 31.5

Director of Nuclear Material
Safety and Safeguards
ATTN: GLTS, U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Gentlemen:


In the Matter of)
Tennessee Valley Authority)

TENNESSEE VALLEY AUTHORITY (TVA) - PARADISE FOSSIL PLANT -
THIRTY DAY NOTIFICATION OF LEAKING RADIOACTIVE SOURCE

Pursuant to the reporting requirements of 10 CFR §
31.5(c)(5), this is to notify NRC that during a scheduled
leak test on a sealed radioactive material source located at
TVA's Paradise Fossil Plant, TVA Radiation Safety Personnel
confirmed the presence of Nickel - 63 in excess of 0.005
microcuries. The enclosure to this letter contains a report
that provides additional details.

If you have any questions, please contact Terry Knuettel at
(423) 751-6673 or Jim Flanigan at (423) 751-4709.

Sincerely,


for Mark J. Burzynski
Manager
Nuclear Licensing

Enclosure
cc: See page 2

Printed on recycled paper

U.S. Nuclear Regulatory Commission
Page 2
March 10, 2004

cc (Enclosure):

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

U.S. Nuclear Regulatory Commission
Division of Nuclear Materials Safety
Region I
475 Allendale Road
King of Prussia, Pennsylvania 19406

ENCLOSURE

10 CFR § 31.5 (C) (5) 30 DAY NOTIFICATION

Conco Fluorotracer, Model No. 101, Serial No. 901-22-97-01 -
containing a sealed radioactive material source Nickel - 63,
Model No. Valco 140 BN, Source Serial No. N848, Foil # 15.176

Description of Events

TVA conducted a routine scheduled leak test of the above Conco Fluorotracer containing a sealed radioactive material source (Nickel - 63) located at the Tennessee Valley Authority's (TVA) Paradise Fossil Plant in Drakesboro, Kentucky, on February 4, 2004. The leak test sample was sent to TVA's Western Area Radiological Laboratory, and the laboratory analysis was completed on February 11, 2004. The initial test sample (taken on February 4, 2004) indicated 1.71 microcuries of Nickel - 63. A follow-up sample (taken on February 11, 2004) indicated 0.075 microcuries of Nickel - 63.

After the initial leak test conducted on February 4, 2004, the Conco Fluorotracer was placed in a secured storage area and was not used. After the leak test sample was analyzed and the survey results became known on February 11, 2004, plant personnel were notified of the results, were told not to return the instrument to service, and were also informed that the instrument storage area was free of radioactive contamination. Radiological Safety personnel traveled to and conducted a detailed radiological survey at the plant that same day, February 11, 2004.

Because the low energy beta emitted by Nickel - 63 precluded the use of field survey instruments, indirect surveys (wipe tests) were conducted on the subject instrument. The wipe samples were then transported to TVA's Western Area Radiological Laboratory in Muscle Shoals, Alabama, for liquid scintillation laboratory analysis. The detailed survey confirmed that the radioactive material was confined to the device that contained the Nickel - 63 sealed source and that no radioactive material had been released into the room where the device was stored or to the environment.

It is the standard procedure of the Radiation Safety Staff to equip the exhaust ports of the Conco Fluorotracers with Millipore filter assemblies. These filters are exchanged on a semiannual basis and are analyzed by liquid scintillation laboratory analysis for indications of source leakage. The filter assembly trapped the leaking radioactive material and prevented its

release. As a result, no members of the Paradise Plant Staff or the public were exposed to any radioactive material. No radioactive material was detected other than on the interior section of the filter assembly. There was no contamination of the premises or the environs.

TVA confirmed that the instrument supplier (Conco Services Corporation 7552 Rickenbacker Drive Gaithersburg, Maryland 20879) was licensed and willing to receive the radioactive material (State of Maryland Radioactive Material License, License No. MD-31-076-02, Expiration date June 30, 2007). The Fluorotracer was packaged for transportation and returned for repair on February 23, 2004.