CONSOL ENERGY

CONSOL Energy Inc.
CNX Center
1000 CONSOL Energy Drive
Canonsburg, PA 15317

phone: 724/485-4696
fax: 724/485-4875
e-mail: joerichards@consolenergy.com
web: www.consolenergy.com

JOSEPH M. RICHARDS
Manager-Occupational Health and Safety

January 11, 2012

Licensing Assistance Team
Division of Nuclear Materials Safety
U.S. Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, PA 19406-1415

Br. 3

RECEIVED
REGION 1
2012 JAN 12 AM 10:33

Dear Sirs:

03032497

Attached you will find a radioactive material license renewal packet for the licensee, CONSOL of Kentucky Inc. (license # 47-25168-01). As required, the original and a copy of the packet are enclosed. In a recent conversation with the NRC on 12/29/11, I understand that no fee is required for this license renewal.

Documents included in this packet are…

- Application for Materials License (NRC Form 313).
- Requested information for Items #5 through #11 of the application. (Format taken from NUREG-1556, Vol. 4, Appendix B.)
- Sealed Source Device and Registry Certificate (SSDR) for the one, model 9000 analyzer which is on this license.
- Training certificate for the RSO (Mr. Marvin E. Daniels).

Should you have any questions or concerns about the contents of this packet, please contact me. Your help and cooperation is appreciated.

Sincerely,

On Behalf of CONSOL of Kentucky Inc.

Joseph M. Richards

Joseph M. Richards

Copy to:
Mr. Ed Daniels.....Miller Creek Plant

576717
NMSS/RGN1 MATERIALS-002

NRC FORM 313 (3-2009)
10 CFR 30, 32, 33, 34, 35, 36, 39, and 40

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR MATERIALS LICENSE

APPROVED BY OMB: NO. 3150-0120 **EXPIRES: 3/31/2012**

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 Records and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.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 APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

OFFICE OF FEDERAL & STATE MATERIALS AND
ENVIRONMENTAL MANAGEMENT PROGRAMS
DIVISION OF MATERIALS SAFETY AND STATE AGREEMENTS
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
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

03032497
X

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

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
612 E. LAMAR BOULEVARD, SUITE 400
ARLINGTON, TX 760[illegible]1-4125

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
- [x] C. RENEWAL OF LICENSE NUMBER 47-25168-01

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

Marvin E. Daniels
CONSOL of Kentucky Inc.
P.O. Box 76
Naugatuck, WV 25685

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

CONSOL of Kentucky Inc.
Miller Creek Plant
Route 65, Big Branch Road
Naugatuck, WV 25685

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Joseph M. Richards

TELEPHONE NUMBER

(724) 485-4696

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

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

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

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

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

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSE FEES *(See 10 CFR 170 and Section 170.31)*
FEE CATEGORY 3P
AMOUNT ENCLOSED $ None required

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

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39, AND 40, AND THAT ALL INFORMATION CONTANED 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	SIGNATURE	DATE
Joseph M. Richards Manager-Occupational Health & Safety	Joseph M. Richards	1/11/2012

FOR NRC USE ONLY

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

Suggested Format for Providing Information Requested in Items 5 Through 11 of NRC Form 313

Table B.1 Items 5 & 6: Materials To Be Possessed and Proposed Uses

Yes	No	Radioisotope	Manufacturer or Distributor Model No.	Quantity	Use As Listed on SSD Certificate	Specify Other Uses Not Listed on SSD Certificate
	X	Cobalt-60	Sealed source manufacturer or distributor and model number: _____ Device manufacturer or distributor and model number: _____	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes [ ] Specific description of the gauge use: _____	[ ] Not applicable _____ [ ] Uses are: _____ (Submit safety analysis supporting safe use)
	X	Krypton-85	Sealed source manufacturer or distributor and model number: _____ Device manufacturer or distributor and model number: _____	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes [ ] Specific description of the gauge use: _____	[ ] Not applicable _____ [ ] Uses are: _____ (Submit safety analysis supporting safe use)
	X	Strontium-90	Sealed source manufacturer or distributor and model number: _____ Device manufacturer or distributor and model number: _____	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes [ ] Specific description of the gauge use: _____	[ ] Not applicable _____ [ ] Uses are: _____ (Submit safety analysis supporting safe use)
X		Cesium-137	Sealed source manufacturer or distributor and model number: See SSDR → Device manufacturer or distributor and model number: Model #9000	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes [X] Specific description of the gauge use: Coal analysis	[X] Not applicable _____ [ ] Uses are: _____ (Submit safety analysis supporting safe use)

→ Device manufacturer: Scan Technologies, Inc.

Yes	No	Radioisotope	Manufacturer or Distributor Model No.	Quantity	Use As Listed on SSD Certificate	Specify Other Uses Not Listed on SSD Certificate
X		Americium-241	Sealed source manufacturer or distributor and model number: See SSDR Device manufacturer or distributor and model number: Model #9000	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes [X] Specific description of the gauge use: Coal analysis	[X] Not applicable [ ] Uses are: (Submit safety analysis supporting safe use)
X		Other Isotope (Specify): Cf-252	Sealed source manufacturer or distributor and model number: See SSDR Device manufacturer or distributor and model number: Model #9000	Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate	Yes [X] Specific description of the gauge use: Coal analysis	[X] Not applicable [ ] Uses are: (Submit safety analysis supporting safe use)
		*Financial Assurance Required **and Evidence of Financial Assurance Provided***				

→ Device manufacturer: Scan Technologies, Inc.

*No evidence of Financial Assurance needed due to lesser quantities of isotopes possessed.

Table B.2 Items 7 Through 11: Training and Experience, Facilities and Equipment, Radiation Safety Program, and Waste Disposal

Item No. and Title	Suggested Response	Yes	Alternative Procedures Attached
7. Individual(s) Responsible For Radiation Safety Program And Their Training And Experience 7.1 Radiation Safety Officer Name: Marvin E. Daniels Over six years experience with industrial gauges containing radioactive sources.	Before obtaining licensed materials, the proposed RSO will have successfully completed the training described in Criteria in the section entitled "Individual(s) Responsible for Radiation Safety Program and Their Training and Experience - Radiation Safety Officer" in NUREG-1556, Vol. 4, dated October 1998. **AND** Before being named as the RSO, future RSOs will have successfully completed the training described in Criteria in the section entitled "Individual(s) Responsible for Radiation Safety Program and Their Training and Experience - Radiation Safety Officer" in NUREG-1556, Vol. 4, dated October 1998. Within 30 days of naming a new RSO, we will submit the new RSO's name to NRC to include in our license.	[X]	[ ]
7. Individual(s) Responsible For Radiation Safety Program And Their Training And Experience 7.2 Authorized Users	PROPOSED AUTHORIZED USERS: Before using licensed materials, authorized users will have successfully completed the training described in Criteria in the section entitled, "Authorized Users" in NUREG-1556, Vol. 4, dated October 1998.	[X]	[ ]
8. Training for Individuals Who in the Course of Employment are Likely to Receive Occupational Doses of Radiation in Excess of 1 mSv (100 mrem) in a Year (Occupationally Exposed Workers) and Ancillary Personnel	The applicant is *not* required to, and should not, submit is training program, for individuals who in the course of employment are likely to receive occupational doses of radiation in excess of 1 mSv (100 mrem) in a year (occupationally exposed workers) and ancillary personnel, to the NRC for review during the licensing phase.	Need Not Be Submitted with Application	

Item No. and Title	Suggested Response	Yes	Alternative Procedures Attached
9. Facilities and Equipment	We will ensure that the location of each fixed gauge meets the Criteria in the section entitled "Facilities and Equipment" in NUREG-1556, Vol. 4, dated October 1998.	[X]	[ ]
10. Radiation Safety Program - Audit Program	The applicant is *not* required to, and should not, submit its audit program to the NRC for review during the licensing phase.	Need Not Be Submitted with Application	
10. Radiation Safety Program - Survey Instruments	Surveys pursuant to 10 CFR 20.1501 will be performed by a person specifically authorized by the NRC or an Agreement State to perform these surveys. **OR** We will use instruments that meet the Criteria in the section entitled "Radiation Safety Program - Instruments," in NUREG-1556, Vol. 4, dated August 1998, and *one* of the following: Each survey meter will be calibrated by the manufacturer or other person authorized by the NRC or an Agreement State to perform survey meter calibrations. **OR** We will implement the model survey instrument calibration program in Appendix I to NUREG-1556, Vol. 4, dated October 1998.	← [X]	[ ]
10. Radiation Safety Program - Material Receipt and Accountability	Physical inventories will be conducted at intervals not to exceed 6 months or at other intervals approved by the NRC, to account for all sealed sources and devices received and possessed under the license.	[X]	[ ]
10. Radiation Safety Program - Occupational Dosimetry	We will perform a prospective evaluation demonstrating that unmonitored individuals are not likely to receive, in one year, a radiation dose in excess of 10% of the allowable limits in 10 CFR Part 20 or we will provide dosimetry that meets the Criteria in the section entitled "Radiation Safety Program - Occupational Dosimetry," in NUREG-1556, Vol. 4, dated October 1998.	[X]	[ ]

Item No. and Title	Suggested Response	Yes	Alternative Procedures Attached
10. Radiation Safety Program - Public Dose	The applicant is not required to submit a response to the public dose section during the licensing phase. However, during NRC inspections, licensees must be able to provide documentation demonstrating, by measurement or calculation, that the total effective dose equivalent to the individual likely to receive the highest dose from the licensed operation does not exceed the annual limit for individual members of the public.	Need Not Be Submitted with Application	
10. Radiation Safety Program - Operating & Emergency Procedures	If the gauge meets one or more of the safety conditions specified in "Discussion," in the section entitled "Radiation Safety Program-Operating Emergency Procedures," in NUREG 1556, Vol. 4, dated August 1998 state the following: Operating and emergency procedures will be developed, implemented, maintained, and distributed, and will meet the Criteria in the section entitled "Radiation Safety Program - Operating and Emergency Procedures," in NUREG-1556, Vol. 4, dated August 1998.	[X]	[ ]
	For each gauge requested that does not meet one or more of the safety conditions specified in "Discussion," in the section entitled "Radiation Safety Program-Operating Emergency Procedures," in NUREG 1556, Vol. 4, dated August 1998 provide your operating, emergency and lock-out (if applicable) procedures to NRC for review.	[ ] Procedures Attached	
10. Radiation Safety Program - Leak Test	Leak tests will be performed at intervals approved by the NRC or an Agreement State and specified in the Sealed Source and Device Registration Certificate. Leak tests will be performed by an organization authorized by NRC or an Agreement State to provide leak testing services for other licensees or using a leak test kit supplied by an organization authorized by NRC or an Agreement State to provide leak test kits to other licensees and according to the kit supplier's instructions. **OR**	[X]	[ ]
	We will implement the model leak test program published in Appendix M to NUREG-1556, Vol. 4, dated October 1998.	[ ]	

Leak tests may be performed by the licensee; however, all leak tests will be analyzed by an organization specifically licensed to perform such analysis.

Item No. and Title	Suggested Response	Yes	Alternative Procedures Attached
10. Radiation Safety Program - Maintenance	ROUTINE MAINTENANCE We will implement and maintain procedures for routine maintenance of our fixed gauges according to each manufacturer's or distributor's written recommendations and instructions.		[ ]
	NON-ROUTINE MAINTENANCE OPERATIONS The gauge manufacturer, distributor or other person authorized by NRC or an Agreement State will perform non-routine operations such as installation, initial radiation survey, repair, and maintenance of components related to the radiological safety of the gauge, gauge relocation, replacement, and disposal of sealed sources, alignment, or removal of a gauge from service.	[X]	[ ] The information listed in Appendix N supporting a request to perform non-routing operations in-house is attached
10. Radiation Safety Program - Transportation	The applicant is *not* required to submit its response to transportation during the licensing process; this issue will be reviewed during inspection. However, the licensee should develop, implement, and maintain transportation procedures according to NRC and DOT regulations.	Need Not Be Submitted with Application	
10. Radiation Safety Program - Fixed Gauges Used at Temporary Job Sites	This is not applicable to our program. We will not use fixed gauges at temporary job sites.	[X] Not Applicable	
	OR		
	We will develop, implement, maintain and distribute procedures that meet the Criteria in the section entitled "Radiation Safety Program - Fixed Gauges Used at Temporary Job Sites" in NUREG-1556, Vol. 4, dated October 1998.	[ ]	[ ]
10. Radiation Safety Program - Minimization of Contamination	The applicant is not required to submit a response to minimization of contamination if the applicant's responses meet the criteria for the following sections: Radioactive Material - Sealed Sources and Devices, Facilities and Equipment, Radiation Safety Program - Operating and Emergency Procedures, Radiation Safety Program - Leak Testing, and Waste Management - Gauge Transfer and Disposal.	Need Not Be Submitted with Application	

Item No. and Title	Suggested Response	Yes	Alternative Procedures Attached
11. Waste Management - Gauge Disposal & Transfer	The applicant is not required to submit a response to waste management during the licensing process. However, the licensee should develop, implement, and maintain gauge transfer and disposal procedures in its radiation protection program.	Need Not Be Submitted with Application	

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

CORRECTED PAGE- ADDRESS CHANGE ONLY, May 11, 2001

NO: **GA-0716-D-I04-S** **DATE: February 15, 1990** **PAGE: 1 of 6**

DEVICE TYPE: Sulphur, Ash, and Moisture Analyzer

MODEL: **9000**

MANUFACTURER/SISTRIBUTOR:
Scan Technologies, Inc.
189 Leighs Grove Court
P.O. Box 519
Grayson Georgia 30017

MANUFACTURER:
Scantech International Pty Ltd
40 Maple Avenue
Forestville, SOUTH AUSTRALIA 5035

SEALED SOURCE MODEL DESIGNATION:
Amersham Corporation Model CDC.804 (Cs-137)
Amersham Corporation Model CVN.CY2 (Cf-252)
Amersham Corporation Model AMC.17 (Am-241)

ISOTOPE	MAXIMUM ACTIVITY
Cesium 137	5 millicuries (0.19 GBq)
Califomium 252	33 millicuires (1.22 GBq) (80 micrograms total) (I-3 sources,10, 20 or 50 µg each)
Americium 241	300 millicuries (11.1GBq)

LEAK TEST FREQUENCY: **Six months**

PRINCIPAL USE:
(D) Gamma Gauges and
(H) General Neutron Source Application

CUSTOM DEVICE: No

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO.: NR-~~232~~-716-D-103-S DATE: FEB. 15, 1990 PAGE 2 OF 6

DEVICE TYPE: Sulfur, Ash, and Moisture Analyzer

DESCRIPTION:

Coalscan's Model 9000 is designed to measure coal parameters (sulfur, ash, and moisture). Coal flows through (up to 20 tons per hour) a 12 inch (30.5 cm) diameter vibrating urethane-blend kevlar tube located in the center of the device. The approximate overall dimensions of the device not including the optional hopper or vibratory discharge feeder are 90 inches (229 cm) high by 67 inches (170 cm) wide by 67 inches in length. The main components of the device are the frame, shielding, sealed sources, detectors, and associated electronics.

The bottom part of the frame is made of 6 inch (15.2) "I" beams welded together. The wall and top of the frame are constructed of "I" beams and square tubular steel. Steel strips are welded to the inside perimeters of the walls to allow attachment of the steel wall plates.

The shielding of the sealed sources is accomplished by the use of polycast, lead, steel, and the detectors themselves. Three inner steel panels filled with polycast to shield the neutron sources are located inside the frame, behind the front doors. These external doors allow access to the electronics.

The back wall and side walls are partially filled with polycast and and when bolted to the frame meet with the inner panels. The top and bottom of the frame are fitted with polycast pieces. When the device is assembled the polycast pieces form an inner enclosure that shields the sealed sources.

The neutron source assembly is located in the back of the device, is rectangular in shape, and extends from the flow tube horizontally back through the back panel. Access is gained to the source by use of a special tool.

The neutron source assembly consists of lead and polyethylene shielding bolted together within the housing. The neutron source capsule is secured in a zinc-plated mild steel holder which is screwed into a zinc-plated mild steel source holder rod. The rod mounts in the center of the neutron housing assembly. A lead and high density polyethylene shutter is placed between the neutron source assembly and the flow tube. The shutter is opened by an electrical actuator.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO.: NR-716-D-103-S DATE: FEB., 15, 1990 PAGE 3 OF 6

DEVICE TYPE: Sulfur, Ash, and Moisture Analyzer

DESCRIPTION (CONT.):

Basic coal measurements are made by the absorption of the 60 keV and 660 keV photons from the americium-241 and cesium-137 sealed sources. These sealed sources, one in front of the other, are secured in a tungsten holder which is located in a lead filled cast iron housing. An electrical shutter is installed and places a standard absorber in the beam for maintenance of the calibration when the device is not in use.

In the event of a power failure both shutters return to the calibration position.

LABELLING:

The device is labeled in accordance with Section 20.203, 10 CFR Part 20. In addition the label contains the name of the distributor, the isotope, activity, and the words "CAUTION -- RADIOACTIVE MATERIAL".

The label is made of stainless steel and the above information is etched or pressed into the plate. The label is attached with rivets to the back wall of the device.

In addition, caution labels are contained on the side walls of the device and on the interior shielding wall located behind the front doors.

DIAGRAM:

See attachments 1 through 3.

CONDITIONS OF NORMAL USE:

The Model 9000 is used to measure selected coal quality parameters on a sample stream of coal in coal processing, coal shipping, and electric utility industries. The device is expected to be subjected to ambient temperatures and pressures. The device may be used outside a plant and therefore, may be subjected to the elements of weather.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO.: NR-716-D-103-S DATE: FEB., 15, 1990 PAGE 4 OF 6

DEVICE TYPE: Sulfur, Ash, and Moisture Analyzer

PROTOTYPE TESTING:

The sealed sources have been prototype tested in accordance with ANSI N542-1977. The prototypes received the following classifications:

Isotope	Model #	Classification
Am-241	AMC.17	77C64444
Cf-252	CVN.CY2	77C66544
Cs-137	CDC.804	77C66544

EXTERNAL RADIATION LEVELS:

The manufacturer reports that the maximum external radiation levels when the device is loaded with 30 micrograms of californium-252, 300 millicuries of americium-241, and 5 millicuries of cesium-137 are:

DISTANCE (cm)	RADIATION LEVEL (mR/hr.)/(mSv/hr)
5	5.7/.057
30	2.2/.022
100	1.1/.011

QUALITY ASSURANCE AND CONTROL:

The manufacturer has in place an acceptable quality assurance and control program and it is on file with the Medical, Academic, and Commercial Use Safety Branch.

LIMITATIONS AND/OR OTHER CONSIDERATIONS OF USE:

- The device shall be distributed only to those persons specifically licensed by the NRC or an Agreement State.
- The device shall not be subjected to environmental or other conditions of use which exceed the ANSI N542-1977 classification listed for the sealed sources.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO.: NR-232-D-103-S DATE: FEB., 15, 1990 PAGE 5 OF 6

DEVICE TYPE: Sulfur, Ash, and Moisture Analyzer

LIMITATIONS AND/OR OTHER CONSIDERATIONS OF USE (cont.):

- The device shall be leak tested at intervals not to exceed six months. The test shall be capable of detecting the presence of 0.005 microcurie (.19 kBq) of removable contamination.
- Handling, Storage, Use, Transfer, and Disposal: To be determined by the licensing authority.
- REVIEWER NOTE: Due to the high dose rates present during source exchange, special handling tools are required during source replacement or initial installation.
- This registration sheet and the information contained with the references shall not be changed without the written consent of the NRC.

SAFETY ANALYSIS SUMMARY:

Incorporated into Coalscan's Model 9000 are several safety features including automatic closing of the shutter if the coal line stops, or if the front doors of the device are opened. In addition, access to the sources can only be obtained through the use of a special tool. Another safety related factor is that due to the size, construction, design, and weight of the device, it is almost impossible for an individual to gain direct access to the sealed sources.

Based on our review of the information and test data cited below, the claimed ANSI N542 classifications, the additional integrity provided to the source from the source and device housings, and that the design and construction of the device limit unauthorized personnel from inadvertently receiving an appreciable radiation exposure, we conclude that Coalscan's Model 9000 device is acceptable for specific licensing purposes.

Furthermore, we conclude that these devices would be expected to maintain their containment for normal conditions of use which might occur during the uses specified in this registration sheet.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO.: NR-214-D-103-S DATE: FEB., 15, 1990 PAGE 6 OF 6

DEVICE TYPE: Sulfur, Ash, and Moisture Analyzer

REFERENCES:

The following supporting documents for Coalscan's Model 9000 Sulfur, Ash, and Moisture Analyzer are hereby incorporated by reference and are made a part of this registry document.

- Coalscan's application dated August 15, 1989, with enclosures thereto.
- Coalscan's letters dated October 24, 1988, January 9, 1989, February 17, 1989, with enclosures thereto.
- *Scan Technologies' letter dated January 22, 1990, with enclosures thereto.

ISSUING AGENCY:

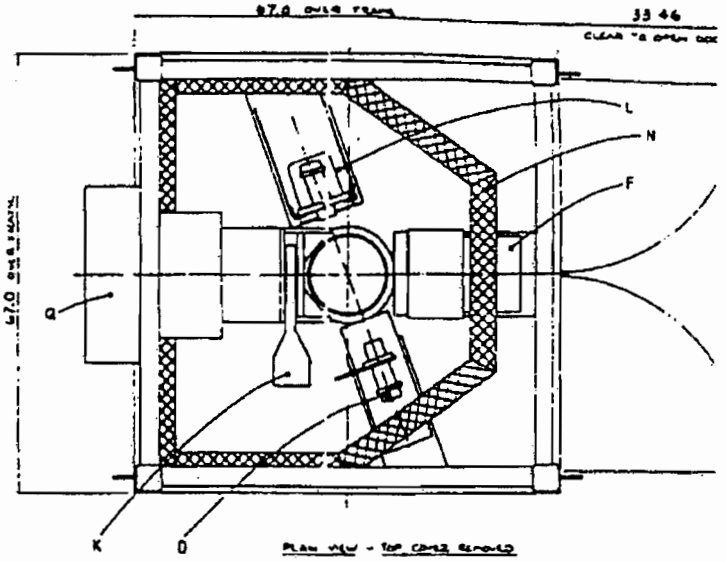
U.S. Nuclear Regulatory Commission

Date: February 15, 1990 Reviewer: Steven L. Baggett
Date Reissued JUN 28 1993
Date: February 15, 1990 Concurrence: John W. Lubinski
Date Reissued JUN 28 1993

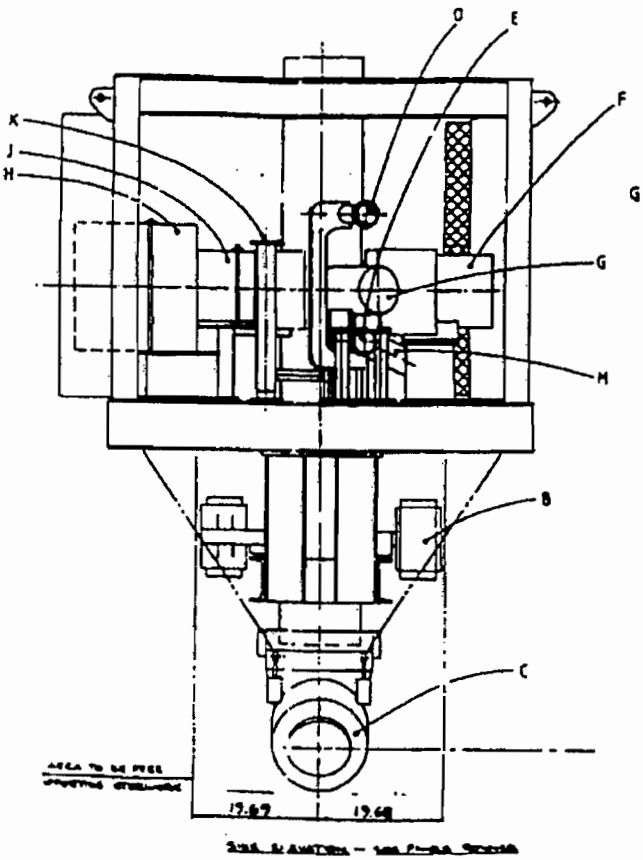
* Scan Technologies purchased Coalscan.

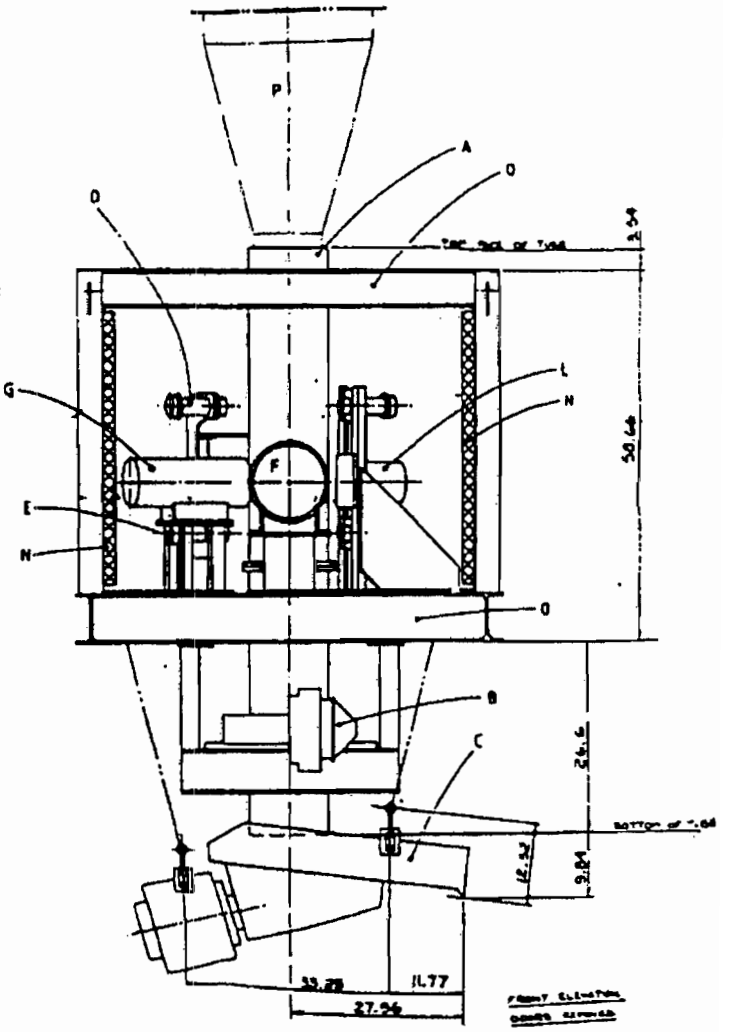
REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO.: NR-716-D-103-S DATE: FEB. 15, 1990 ATTACHMENT 1



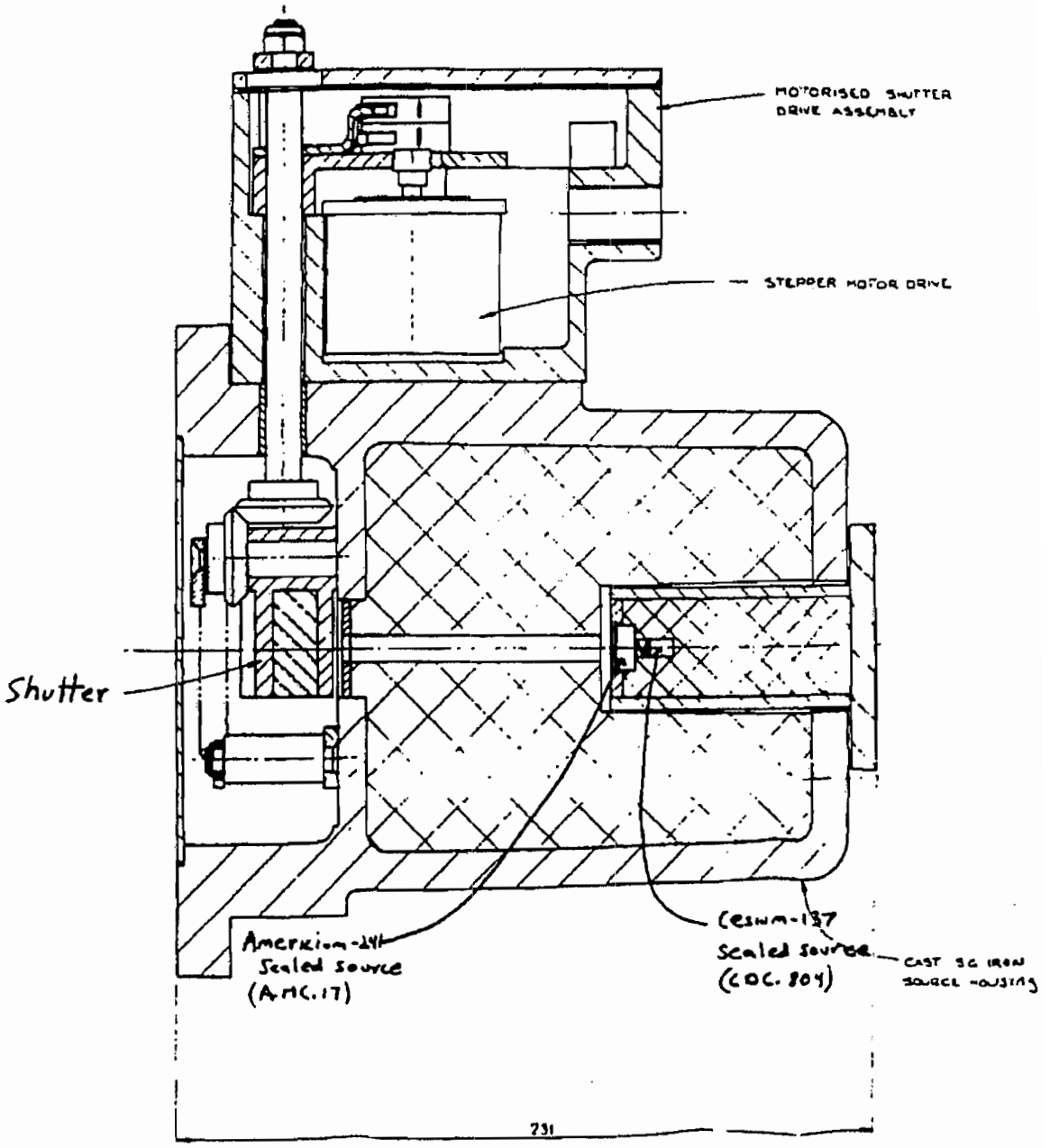
A SAMPLE TUBE - VIBRATING
B TUBE VIBRATORS
C DISCHARGE VIBRATORY FEEDER
D MICROWAVE LEVEL SENSOR - UPPER
E MICROWAVE LEVEL SENSOR - LOWER
F DETECTOR ASSEMBLY - NEUTRON PROMPT GAMMAS
G DETECTOR ASSEMBLY - LOW ENERGY GAMMAS
H NEUTRON SHIELD
J NEUTRON SOURCE HOUSING
K NEUTRON STANDARD AND ACTUATOR
L LOW ENERGY GAMMA SOURCE HOUSING
M NEUTRON DETECTOR
N NEUTRON SHIELDING - POLYCAST
O ADDITIONAL NEUTRON SHIELDING IN TOP AND BOTTOM OF FRAME - POLYCAST
P OPTIONAL HOPPER





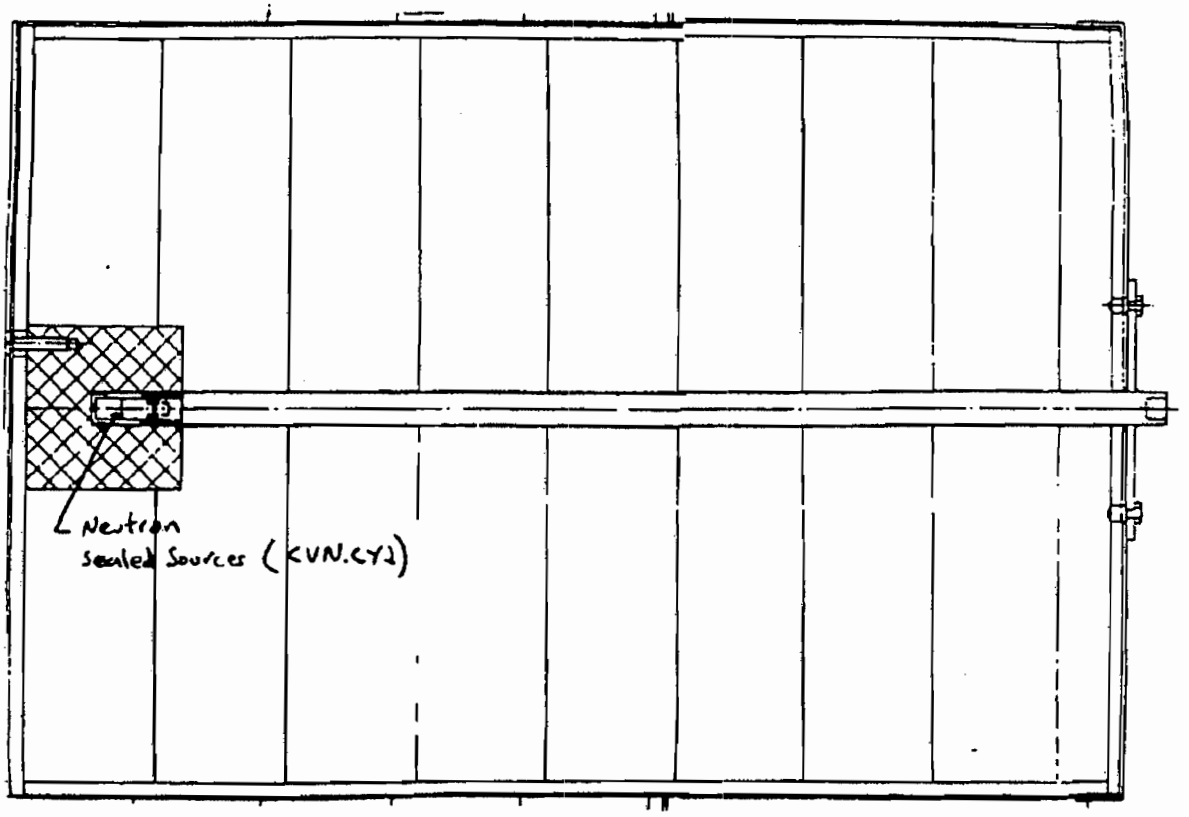
REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUTION OF DEVICE

NO.: NR-2~~32~~716-D-103-S DATE: FEB. 15, 1990 ATTACHMENT 2



REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUTION OF DEVICE

NO.: NR-~~232~~ 714-D-103-S DATE: FEB. 15, 1990 ATTACHMENT 3



Neutron Source Housing

Certificate of Completion

MARVIN E. DANIELS

has participated in and completed:

Radiation Safety Officer Training

In accordance with
USNRC NUREG-1556, VOLUME 4

Presented on: *August 18, 2005*

ETI
Energy Technologies Inc.
Knoxville, TN 37931

By: D. K. D.

David K. Swindell
Radiation Safety Officer

This is to acknowledge the receipt of your letter/application dated

11/1/2012, and to inform you that the initial processing which includes an administrative review has been performed.

Renew (47-25168-01)

☒ There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

☐ Please provide to this office within 30 days of your receipt of this card

_____.

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** 576717.
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.

NRC FORM 532 (RI)
(6-96)

Sincerely,
Licensing Assistance Team Leader