

NRC FORM 313

U. S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0120  
EXPIRES 6-30-96(10-94)  
10 CFR 30, 32, 33  
34, 35, 36, 39 and 40

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 9 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. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0120), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

## 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.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY  
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:

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

LICENSING ASSISTANT SECTION  
NUCLEAR MATERIALS SAFETY BRANCH  
U.S. NUCLEAR REGULATORY COMMISSION, REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

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

US NRC III--ATLANTA FEDERAL CENTER  
SUITE 23T85, ATTN: DNMS  
61 FORSYTH STREET  
ATLANTA, GA 30303

IF YOU ARE LOCATED IN:

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

MATERIALS LICENSING SECTION  
U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
801 WARRENVILLE RD.  
LISLE, IL 60532-4351

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS,  
LOUISIANA, 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 SECTION  
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TX 76011-8064

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 \_\_\_\_\_

C. RENEWAL OF LICENSE NUMBER \_\_\_\_\_

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

Sigmon Coal Company Inc.  
General Delivery  
Holmes Mill, Ky. 40843

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

Sigmon Preparation Plant  
Rt. 1, Box 81  
Keokee, Virginia 24265

CALVIN TIPPLE

VA. office  
540-546-3036

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Doug Shackelford

TELEPHONE NUMBER

(606) 837-2840

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. LICENSEE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY 170.31 (4)(c)

AMOUNT

ENCLOSED: 550.00

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

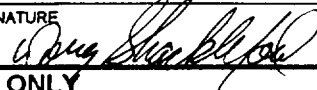
THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39 AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT 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

Rad. Safety Officer  
Doug Shackelford, Preparation Superintendent

SIGNATURE



DATE

5/19/97

FOR NRC USE ONLY

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

NMS/IRGNI MATERIALS-002

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ITEM 5.

RADIOACTIVE MATERIAL:

- A. Element and Mass.
  - 1. Cesium, 137
  - 2. Americium, 241
  
- B. Chemical and/or Physical form -(sealed source)
  - 1. Cesium (Amersham Corp. Model CDC.806)  
sealed source.
  - 2. Americium (Amersham Corp. Model AMC.17)  
sealed source.
  
- C. Maximum amount which will be possessed at any one time.
  - 1. Cesium - (20 millicuries)
  - 2. Americium - (300 millicuries)

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ITEM 6.

The purpose for which the licensed material will be used will be for  
Ash monitoring for coal processing.

ITEM 7.

The individual responsible for radiation safety program and their training experience is Doug Shackleford, Plant Superintendent, will be also named Radiation Safety Officer (RSO) for Sigmon Coal Co., Inc. Enclosed is a list of his duties and responsibilities.

## ATTACHMENT TO ITEM 7.

### DUTIES AND RESPONSIBILITIES OF THE RSO.

The Radiation Safety Officer is responsible for implementing the radiation safety program and ensuring that radiation safety activities are performed in accordance with approved procedures and regulatory requirements.

1. Radioactive materials possessed under the license conform to the materials listed on the license.
2. Use or supervision of use of the devices is only by individuals authorized by the license.
3. The established "Lock Out" procedures are followed during maintenance or repairs on or around the pipes, tanks, vessels, conveyors, etc., to prevent individuals from entering the radiation beams.
4. Periodic leak tests of the sealed sources are conducted as required by the license.
5. Proper authorities are notified promptly in case of accident or damage to gauges, fire or theft.
6. All incidents, accidents and personnel exposure to radiation will be investigated and reported to the proper authorities, as appropriate.
7. If required, users wear personnel monitoring equipment, such as film badges or thermoluminescence dosimeters (TLD), and reports of personnel monitoring are reviewed in a timely manner.
8. Radioactive material is disposed of properly.
9. The license is amended whenever there are changes in: licensed activities, responsible individuals, or information or commitments provided in the license.

# COALSCAN

Douglas Heckleford

*has successfully completed the  
Short Course in Radiation Safety  
for COALSCAN Users*

June 9, 1989

Robert S. Davis

Vice President, Technology

# COALSCAN

Chester Fugate

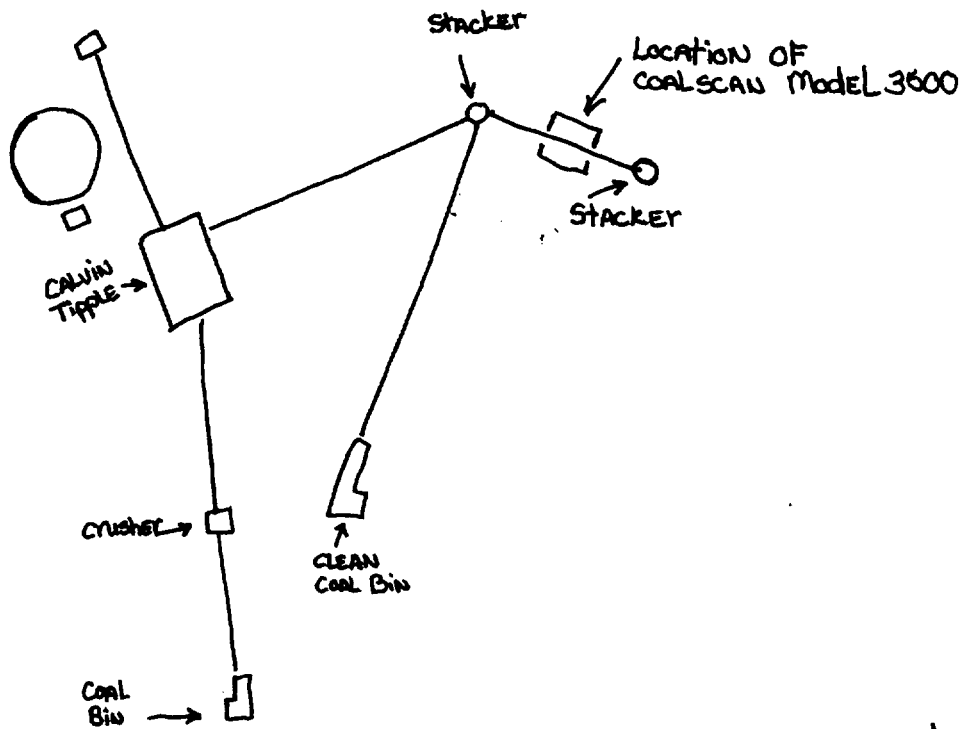
*has successfully completed the  
Short Course in Radiation Safety  
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June 9, 1989

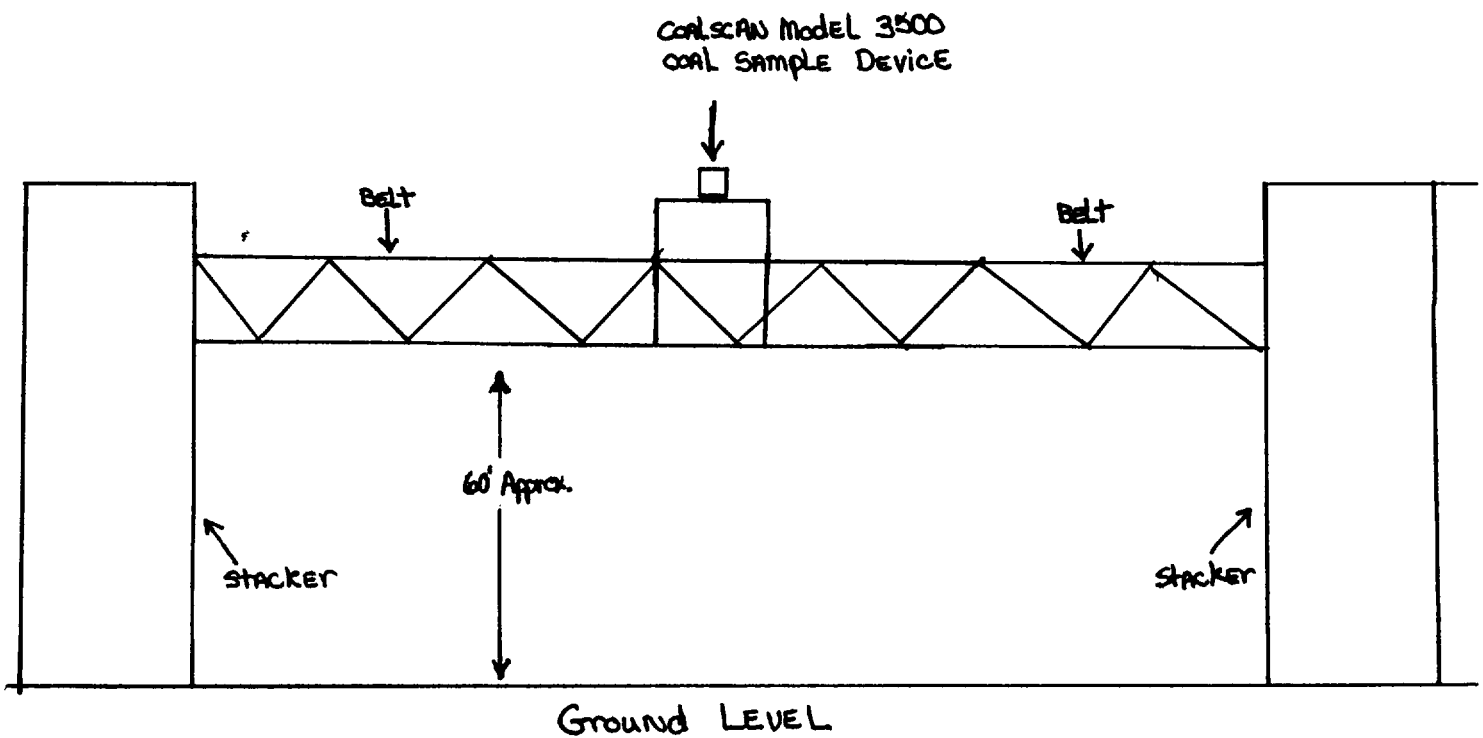
William H. Davis

Vice President, Technology

Item 9.

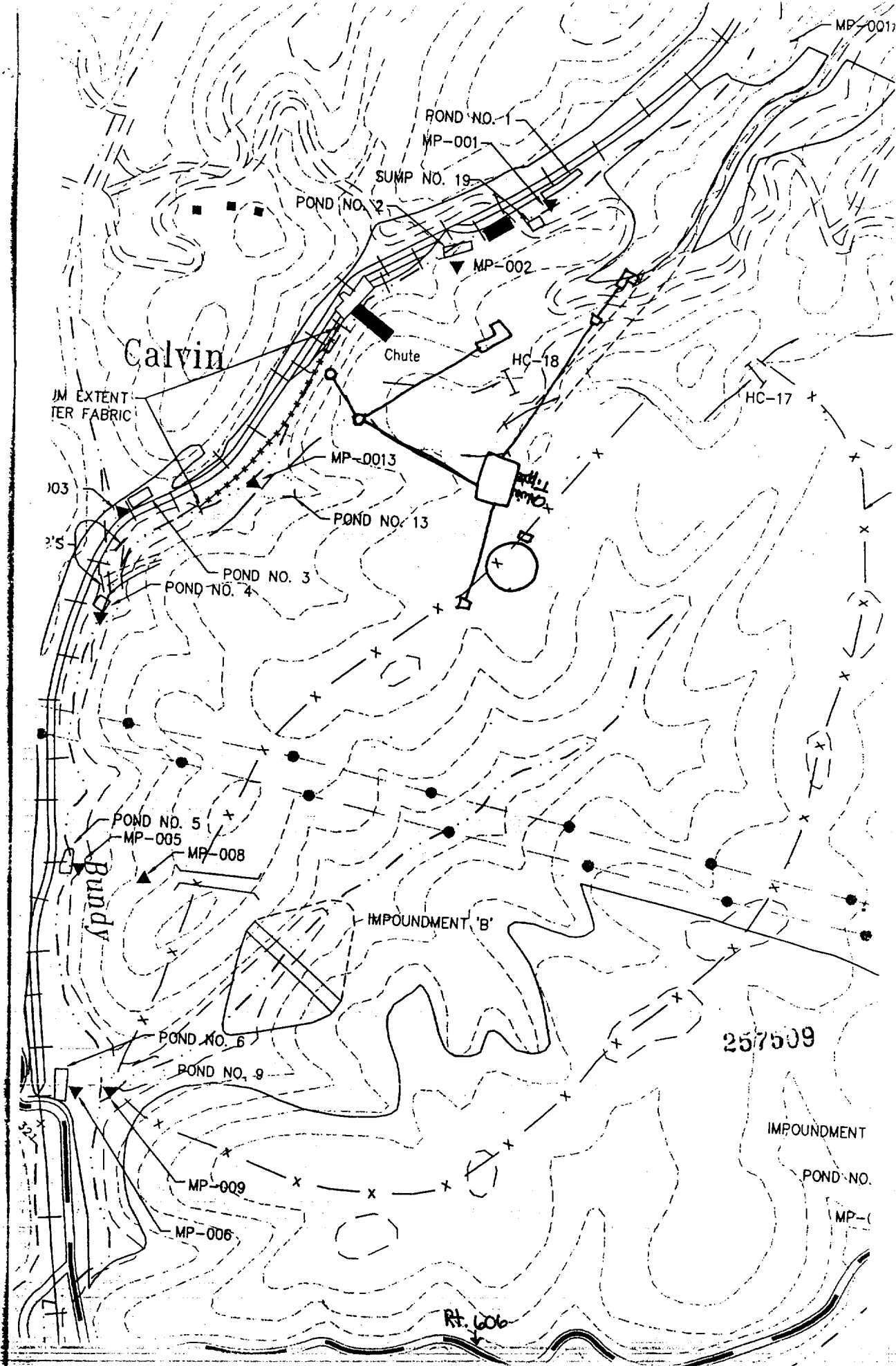


Overhead



PLAN VIEW



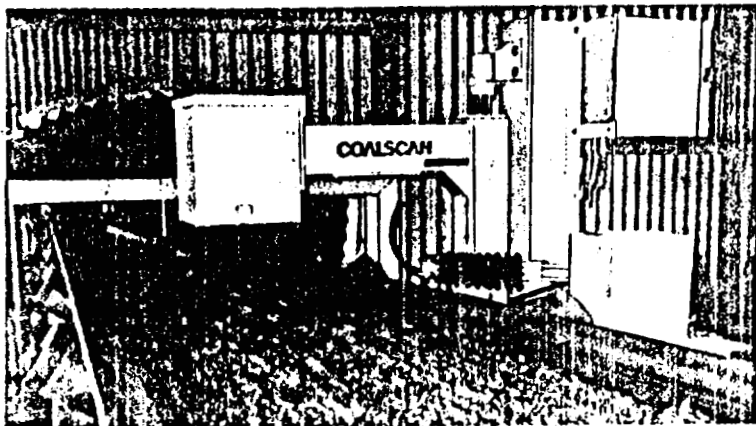


# COALSCAN

ON-LINE COAL SAMPLING AND ANALYSIS SYSTEMS

## Model 3500

**Continuous on-line measurement of ash in run-of-mine or washed coal streams**



The Model 3500 through belt ash monitor uses a computer controlled non-contacting nucleonic measuring technique to monitor ash in bulk coal streams. The measurement technique is low energy gamma ray transmission. A gamma ray beam is attenuated at a rate proportional to the average atomic number of the coal which is in turn proportional to the ash content.

The system is fully automatic requiring no routine attention from plant operators. The measuring head is mounted on a C frame assembly that swings out over the belt during measurement. When coal is present with a depth exceeding 2" the C frame extends automatically and begins to accumulate data. If the bed depth drops below 2" the instrument stops recording. Once the coal flow actually stops, the C frame retracts to the offbelt position and enters an automatic standardization routine.

The system is controlled from a microcomputer with its operating program permanently stored in read only memory. Operating parameters are stored in a battery backed operator's memory and may be changed using the operator's terminal supplied with the instrument. The output of the instrument is supplied on a dual pen strip chart recorder with LED displays indicating the instantaneous ash level as well as the tonnage weighted ash level since the last reset.

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## SHORT COURSE IN RADIATION SAFETY FOR COALSCAN COAL ANALYZER USERS

Course Length: Two days; four sessions per day; total of twelve hours. Sessions will be mixture of lectures and laboratory work with participants having hands-on experience.

Session 1.        Radiation Physics I

Atomic structure, nature of radiation, interaction with matter, shielding for gamma rays, neutron shielding, biological effects of radiation.

Session 2.        Introduction to COALSCAN

Physics of measurement, general operation, standardization, calibration, performance verification, moisture monitor performance.

Session 3.        Radiation Physics II

Radiation units, types of sources, half-life, radiation background, limiting exposure.

Session 4.        COALSCAN Applications

General utility, specific application, calibration details, special requirements.

Session 5.        Radiation Instrumentation and Regulations

Survey meters, dosimeters, film badges, laboratory experience, jurisdiction, Survey of Title 10 CFR and Agreement State Regs (if any), responsibilities of licensees, radiation safety officer, personnel, leak testing, transport of licensed material, record keeping, inspections.

Session 6.        COALSCAN Radiation Levels

Expected dose, allowed dose, comparisons, and worker safety.

Session 7.        COALSCAN Operation

Operating modes, monitor computer, the programmable logic controller, maintenance, outputs, graphics display system.

Session 8.        Review, examination, license application

## ATTACHMENT TO ITEM 10

### DUTIES AND RESPONSIBILITIES OF THE RSO.

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2. Use or supervision of use of the devices is only by individuals authorized by the license.
3. The established "Lock Out" procedures are followed during maintenance or repairs on or around the pipes, tanks, vessels, conveyors, etc., to prevent individuals from entering the radiation beams.
4. Periodic leak tests of the sealed sources are conducted as required by the license.
5. Proper authorities are notified promptly in case of accident or damage to gauges, fire or theft.
6. All incidents, accidents and personnel exposure to radiation will be investigated and reported to the proper authorities, as appropriate.
7. If required, users wear personnel monitoring equipment, such as film badges or thermoluminescence dosimeters (TLD), and reports of personnel monitoring are reviewed in a timely manner.
8. Radioactive material is disposed of properly.
9. The license is amended whenever there are changes in: licensed activities, responsible individuals, or information or commitments provided in the license.

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ITEM 11.

Waste management:

Coalscan, Inc. has agreed to take back model 3500 course material at the end of its useful life.

COALSCAN Technologies, Inc.  
Suite 300, 147 11<sup>th</sup> AVENUE  
South Charleston, W. Virginia 26303

CABINET FOR HUMAN RESOURCES  
COMMONWEALTH OF KENTUCKY  
RADIOACTIVE MATERIAL LICENSE

PAGE 1

1. LICENSEE AND 2. ADDRESS

JERICOL MINING INC.  
GLENBROOK ST HWY 38 MILE 28  
HOLMES MILL, KY 40843

ATTENTION: DOUG SHACKLEFORD  
606-837-2840

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PURSUANT TO KRS 211.842 ET SEQ., THE KENTUCKY CABINET FOR HUMAN RESOURCES REGULATIONS, 902 KAR 100, AND IN RELIANCE ON STATEMENTS AND REPRESENTATIONS HERETOFORE MADE BY THE LICENSEE, A LICENSE IS HEREBY ISSUED TO RECEIVE, ACQUIRE, OWN, POSSESS AND TRANSFER RADIOACTIVE MATERIAL LISTED BELOW; AND TO USE SUCH RADIOACTIVE MATERIAL FOR THE PURPOSE(S) AND AT THE PLACE(S) DESIGNATED BELOW. THIS LICENSE IS SUBJECT TO ALL APPLICABLE RULES, REGULATIONS, AND ORDERS OF THE CABINET FOR HUMAN RESOURCES, NOW OR HEREINAFTER IN EFFECT AND TO ANY CONDITIONS SPECIFIED BELOW.  
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3. LICENSE NUMBER: 201-434-56  
AMENDMENT NO. 9  
4. EXPIRATION DATE: AUGUST 31, 1997  
5. REVIEWER: 34  
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6. LICENSED MATERIAL	7. FORM	8. POSSESSION LIMIT
A. CESIUM 137	A. SEALED SOURCE (AMERSHAM CORP. MODEL CDC.806)	A. 20 MILLICURIES
B. AMERICIUM 241	B. SEALED SOURCE (AMERSHAM CORP. MODEL AMC 17)	B. 300 MILLICURIES

9. AUTHORIZED USE

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