

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
611 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 05-16354-01

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

WESTERN NUCLEAR, INC.
134 UNION BLVD., SUITE 640
LAKEWOOD, CO 80228

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

- A. Cadmium-109 (Texas Nuclear Model 696-696782) and Americium-241 (Amersham/Searle Model AMM.4): At temporary job sites in states subject to NRC's regulatory authority.
B. Cesium-137 (Ohmart Model A-2102) and Cadmium-109 (Texas Nuclear Model 570-57242B):
Western Nuclear, Inc.; Jeffrey City, Wyoming 82310.

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION:

GREY BOGDEN

TELEPHONE NUMBER

303/986-4571

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 3.F. AMOUNT ENCLOSED \$ 350.00

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, 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

Donald O. Rausch

Donald O. Rausch

President

1/14/85

14. VOLUNTARY ECONOMIC DATA

a. ANNUAL RECEIPTS:

☐ <\$250K
☐ \$250K-\$500K
☐ \$500K-\$750K
☐ \$750K-\$1M

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

☐ \$1M-\$3.5M
☐ \$3.5M-\$7M
☐ \$7M-\$10M
☐ >\$10M

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

Renewal Jan 4 IV

3P(12)

Refunded 230

AMOUNT RECEIVED

\$ 350

CHECK NUMBER

794-52679

8510230315 850826

REG4 LIC30

05-16354-01

PDR

APPROVED BY

Francis Brown

DATE

1/23/85

PRIVACY ACT STATEMENT

Pursuant to 5 U.S.C. 552a(e)(3), enacted into law by section 3 of the Privacy Act of 1974 (Public Law 93-579), the following statement is furnished to individuals who supply information to the Nuclear Regulatory Commission on NRC Form 313. This information is maintained in a system of records designated as NRC-3 and described at 40 Federal Register 45334 (October 1, 1975).

1. **AUTHORITY:** Sections 81 and 161(b) of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2111 and 2201(b)).
2. **PRINCIPAL PURPOSE(S):** The information is evaluated by the NRC staff pursuant to the criteria set forth in 10 CFR Parts 30, 32, 33, 34, 35 and 40 to determine whether the application meets the requirements of the Atomic Energy Act of 1954, as amended, and the Commission's regulations, for the issuance of a radioactive material license or amendment thereof.
3. **ROUTINE USES:** The information may be (a) provided to State health departments for their information and use; and (b) provided to Federal, State, and local health officials and other persons in the event of incident or exposure, for their information, investigation, and protection of the public health and safety. The information may also be disclosed to appropriate Federal, State, and local agencies in the event that the information indicates a violation or potential violation of law and in the course of an administrative or judicial proceeding. In addition, this information may be transferred to an appropriate Federal, State, or local agency to the extent relevant and necessary for an NRC decision or to an appropriate Federal agency to the extent relevant and necessary for that agency's decision about you.
4. **WHETHER DISCLOSURE IS MANDATORY OR VOLUNTARY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION:** Disclosure of the requested information is voluntary. If the requested information is not furnished, however, the application for radioactive material license, or amendment thereof, will not be processed. A request that information be held from public inspection must be in accordance with the provisions of 10 CFR 2.790. Withholding from public inspection shall not affect the right, if any, of persons properly and directly concerned need to inspect the document.
5. **SYSTEM MANAGER(S) AND ADDRESS:** U.S. Nuclear Regulatory Commission
Director, Division of Fuel Cycle and Material Safety
Office of Nuclear Material Safety and Safeguards
Washington, D.C. 20555

WESTERN NUCLEAR, INC.

ITEM 5. RADIOACTIVE MATERIAL

a. Sealed Sources:

<u>Isotope</u>	<u>Chemical and/or Physical Form</u>	<u>Name of Manufacturer & Model No.</u>	<u>Maximum Activity Per Source Which Will be Possessed At Any One Time</u>
(1) Cadmium-109	Sealed source	Texas Nuclear Model 696-696782	Five sources of 3 mCi each
(2) Cesium-137	Sealed source	Ohmart Model A-2101	a. Two sources of 100 mCi each b. One source of 50 mCi
(3) Americium- 241	Sealed source	Amersham-Searle Model AMM.4	Two sources of 0.5 mCi each
(4) Cadmium-109	Sealed source	Texas Nuclear Model 570-572428	2 sources of 10 mCi each

b. Radiographic Exposure Devices In Which Sealed Sources Will Be Used:

- (1) Cadmium-109 (Texas Nuclear Model 696-696782): To be used in Texas Nuclear Model 9256 X-Ray Analyzer for Mining Control.
- (2) Cesium-137 (Ohmart Model A-2102):
 - (a) Two sources of 100 mCi each to be used in Ohmart Model SR-1 source holders in Model ED-8 density gauges.
 - (b) One source of 50 mCi to be used in Ohmart Model SR-1 source holder in Model ED-8 density gauge.
- (3) Americium-241 (Amersham-Searle Model AMM.4): To be used in Texas Nuclear Model 9200 series X-Ray Fluorescence.
- (4) Cadmium-109 (Texas Nuclear Model 570-57242B): To be used in Texas Nuclear XOLA-UA-1 X-Ray Fluorescence Analyzer for Mining Control.

WESTERN NUCLEAR, INC.

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

- (1) Cadmium-109 (Texas Nuclear Model 696-696782): For sample analysis.
- (2) Cesium-137 (Ohmart Model A-2101): For density measurements.
- (3) Americium-241 (Amersham-Searle Model AMM.4): For sample analysis.
- (4) Cadmium-109 (Texas Nuclear Model 570-57242B): For sample analysis.

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ITEM 7. RESPONSIBLE INDIVIDUAL(S)

A. Responsible Individuals

1. Lloyd D. Fenske, General Superintendent of Operations. Mr. Fenske has been employed by Western Nuclear, Inc. (WNI) in a supervisory capacity for seven years.
2. Robert W. Helm, Mill Superintendent. The Mill Superintendent reports to the General Superintendent of Operations. Mr. Helm has been employed by WNI as Mill Superintendent for ten years.
3. Hugh Frohbieter, General Mill Foreman. The General Mill Foreman reports to the Mill Superintendent. Mr. Frohbieter has been employed by WNI as General Mill Foreman for more than ten years.
4. Charles Pomroy, Safety Director. The Safety Director reports to the Resident Manager. Mr. Pomroy has been employed by WNI as Safety Director for five years.
5. L. Scott Walker, Radiation Safety Officer (RSO). The RSO reports to the Safety Director. Mr. Walker has been employed by WNI as RSO for four years.

B. Training and Experience of Radiation Protection Personnel

Qualifications of radiation protection personnel are enumerated below. The qualifications listed are the minimum; however, experience may be substituted for a formal degree.

1. Safety Director
 - a. Advanced technical training or BS degree (or higher) in a technical or scientific field, and/or
 - b. training or experience in industrial safety (4 years),
 - c. training and experience in medical first aid (2-3 years),
 - d. training experience in management, or
 - e. working knowledge of applicable federal and state regulations regarding safety.

WESTERN NUCLEAR, INC.

Item 7. Responsible Individual(s) - continued

2. Radiation Safety Officer

- a. BS degree in the physical sciences, mathematics, or engineering from an accredited college or university; equivalent experience; or a combination of education and experience. Equivalent experience for the BS degree will be at least four years of relevant radiation safety experience.
- b. One year of training and/or experience with sampling and analytical procedures, and
- c. a working knowledge of radiation detection instruments.

In addition to the minimum qualifications specified above, the Safety Director and RSO have had specialized formalized training of at least four weeks duration in radiation protection, including the biological effects of uranium and its daughters. On a biannual basis, both the Safety Director and the RSO attend a refresher course.

WESTERN NUCLEAR, INC.

ITEM 8. TRAINING

The purpose of the radiation safety program is to ensure employee understanding of the radiological health protection problems commensurate with working for the uranium mining/milling industry.

The goals of the in-house radiation safety program are the following:

1. To place in proper perspective for the employee the short- and long-term radiation hazards associated with the job;
2. To instruct and train employees in practices instituted by management to keep occupational exposures as low as reasonably achievable;
3. To assure each employee has an understanding (both initially and over the duration of his employment) of the radiation safety procedures which should be followed;
4. To stress most safety radiation procedures are "common sense" procedures, just as are occupational safety procedures, that have been implemented to protect the employee; and
5. To emphasize the employee's personal responsibility to protect himself by adhering to all safety procedures.

Basic indoctrination in radiation protection is given to all employees assigned to work with radioactive materials. The training is given prior to an employee's commencement of work activities. Employee indoctrination includes review of lecture materials and a walk-through of the facilities. Both the new employee and the appropriate supervisor will sign a statement indicating the new employee is familiar with the safety procedures and understands such procedures prior to commencement of work. The signed statement will be included in the employee's personnel folder.

Formal retraining, which addresses essentially the same material as is presented to new employees, is given to employees every year. The basic employee indoctrination training includes the following:

1. Principles of Radiation Protection. Included is an explanation and definition of radiation, an explanation of the health protection problems associated with exposure to radioactive materials, and an explanation of the precautions or procedures used to minimize exposure to radiation. Instructions are in accordance with 10 CFR 19.12,

WESTERN NUCLEAR, INC.

Item 8. Training - continued

"Instructions to Workers" and Appendix A to 10 CFR 34, "Licenses For Radiography and Radiation Safety Requirements For Radiographic Operations," and are commensurate with potential radiological health protection problems in the restricted area.

All female employees who work with radioactive materials are instructed in the potential health protection problems associated with prenatal radiation exposures outlined in Regulatory Guide 8.13, "Instruction Concerning Prenatal Radiation Exposure." Signed acknowledgments of the instruction and understanding of such instructions from each mill employee are maintained in the employee's personal file.

2. Radiation Health Measurement. Addressed are the basic detection methods and instrumentation used for detection of radiation in a restricted area. Employees are instructed as to purposes and functions of equipment used.

3. Methods of Radiation Control. Addressed are basic methods used to limit radiation dose, including working time, working distance, and shielding.

4. Radiation Sources. Employees are instructed as to the use of radiation or radioactive materials in the restricted area as well as to potential hazards involved with such use.

Although mill operators do not routinely work with sealed sources such as the nuclear density gauges, all mill employees are provided personnel dosimeters to determine any external whole body doses. In addition, employees who work with analytical x-ray machines are also provided personnel dosimeters.

5. Limiting Guides. Reviewed are allowable exposure limits in accordance with 10 CFR 20 and general operating procedures to maintain exposures ALARA. Also reviewed are required notification and posting requirements in accordance with 10 CFR 19 as well as the radiation exposure reports which workers may request pursuant to 10 CFR 19.13.

6. Radiation Control and Job Performance. In accordance with general safety practices, repeated violations of safety practices will result in disciplinary action, up to and including dismissal.

WESTERN NUCLEAR, INC.

Item 8. Training - continued

Supervisory Safety Training

During safety meetings, additional training is provided to supervisors to help provide specific job-related training for subordinates. Supervisory training includes training procedures, review of operations to best facilitate implementation of the ALARA philosophy and the responsibility of using the appropriate radiation protection procedures to protect personnel. The supervisors are responsible for continual evaluation of operating conditions and for providing additional on-the-job training as necessary to ensure protection of employees from exposure to radioactive materials or to radiation.

Training Program

The training program consists of a series of slides accompanied by appropriate lecture material. The slides address the following issues:

A. Fundamentals of Radiation Safety

1. The Gamma Ray
2. EM Radiation of Short Wave Lengths Emitted From the Nucleus
3. X-Ray
4. X-Ray Emitted from Electrons
5. EM Spectrum
6. Picture of the Atom
7. Picture of Penetrating Radiations
8. Caution Signs and Posting
9. External Radiation Exposure
10. Distance
11. Distance/Exposure
12. Time
13. Time/Exposure
14. Shielding
15. Attenuation
16. As Low As Reasonably Achievable
17. The Rem-Unit of Dose Equivalent
18. 10 CFR 19, Workers' Rights and Responsibilities
19. Carcinogenic Effects of Radiation--Some Human Experiences
20. Examples of Medical Exposures
21. Occupational Exposures
22. Factors Influencing Radiation-Induced Cancer
23. Risks of Cancer

WESTERN NUCLEAR, INC.

Item 8. Training (continued)

24. Genetic Effects of Radiation
25. Ionizing Radiation as a Mutagen
26. Natural Background Radiation
27. Average Annual Dose
28. Global Fallout
29. Nuclear Fuel Cycle
30. Medical Radiation
31. Percentage of U.S. Population Receiving Medical & Dental X-Rays Each Year
32. Consumer Products
33. Principle Radiation Hazards
34. Fatal Risks--Risk Factors
35. Risk of Low Dose Radiation Effects
36. Numerical Comparison of Risks
37. Personnel Dosimeters
38. External Radiation Survey Equipment

Employee understanding of the training program is verified by passing a written examination. A passing score constitutes correctly answering at least 80% of the questions. Any questions not correctly answered are discussed in detail.

Detailed questions on the written examination address the following:

- What defines a "restricted area"?
- What is the purpose of the restricted area?
- How is access to the restricted area controlled?
- Where are density gauges and x-ray machines located?
- What precautions should be taken when using density gauges or x-ray machines?
- What is the purpose of posting?
- What does the sign "Caution--Radioactive Materials" signify?
- Where is the sign "Caution--Radioactive Materials" posted? What precautions do you take when you see this sign?
- What does the sign "Caution--X-Rays" signify? What precautions are you to take when you see this sign?

WESTERN NUCLEAR, INC.

Item 8 - Training (continued)

- What does the sign "Caution--Radiation Area" signify? What precautions do you take when you see this sign?
- What engineering controls reduce exposures? What precautions and procedures can you practice to reduce exposures?
- How are employee exposures determined?
- What are the sources of external exposures in the milling operations?
- What precautions and procedures are used to minimize such exposures?
- What are the potential risks from the external radiation exposure levels commonly observed in WNI operations?
- What does ALARA mean? What does the company do to lower exposures ALARA? What can you do to lower exposures ALARA?
- What does a personnel dosimeter measure? Why is it important to wear the dosimeter in front of the body between the neck and thighs rather than on the back of hard hats? Why is it important to properly store the dosimeters when they are not being worn?
- What are the WNI policies, conditions of employment, and programs to provide radiation protection? What are the management responsibilities? What are the employee responsibilities?
- What is Form NRC-3? What specific information does it contain? Where should the form be posted? What are your responsibilities? What are your rights?
- What documents are either posted or available for your review? When can you review these documents? What is contained in each document and how does that information pertain to you? Where are the documents or notices explaining the documents posted?
- What is it your responsibility to do if anything out of the ordinary occurs?
- What are the potential radiation health risks from working at your specific job versus other potential risks? What does this mean to you? Is your potential risk from your occupational exposure acceptable to you?

WESTERN NUCLEAR, INC.

ITEM 9. FACILITIES AND EQUIPMENT

The source housings are designed such that it is unlikely any person, during normal usage, can receive any exposure in excess of 0.125 rem per year (i.e., less than 5% of MPC) and the surface radiation levels are less than 1 mR/hr.

Adequate protection is therefore provided by the shielding incorporated in the instrument and source holder.

Leak testing procedures are included in this item.

WESTERN NUCLEAR, INC.

Item 9. Facilities & Equipment (continued)

LEAK TEST PROCEDURE - TYPE QT/2S

This procedure is specifically designed to leak test radioactive sources like those contained in Portable X-Ray Analyzers or other similar devices.

INSTRUCTIONS

1. If portable, move the unit to a clean, well-lighted area so as not to get dust into the internal components upon disassembly.
2. Do the work on a clean, flat surface and wash hands before starting.
3. Partially disassemble the unit, if instructed to do so in the attachment, using any furnished drawings for reference.
4. Remove Q-tips and the small bottle of solvent from the kit and open solvent.
5. Moisten one Q-tip, then wipe and dry the source as instructed on the following page.
6. Break the Q-tip stem off leaving the cotton ends in the solvent bottle. Be careful not to touch the cotton tips with the fingers.
7. Replace the bottle cap and seal with tape.
8. Reassemble the unit.
9. Fill out the sheet labeled "Leak Test Certification" with your company identification, product model, serial number and source type.
10. Repackage all components in the mailing tube; survey the tube with an appropriate instrument, if available, and mail to Texas Nuclear.

NOTE: In Canada, one cannot mail the tube, but must send the tube by Air Express.

Any questions concerning leak testing should be referred to:

Health Physics Section
Texas Nuclear Division
P. O. Box 9267
Austin, Texas 78766

Telephone: 512/836-0801

WESTERN NUCLEAR, INC.

Item 9. Facilities & Equipment (continued)

TEXAS NUCLEAR SOURCE HOUSING ASSEMBLY - (Models 9254, 9256, 9257 and 9263)

- (a) Remove the front housing assembly [9254 (49)
9256 (2)
9257 (33)
9263 (33)] by loosening the three holding screws.
- (b) With the moist Q-tip carefully wipe the back of the source spider assembly [9254 (4)
9256 (4)
9257 (35)
9263 (35)] and drop the Q-tip into the solvent bottle.

Keep the hands away from the shutter actuator pin.

- (c) With the other Q-tip dry, wipe the same area until all the remaining moisture is taken up. Drop the second Q-tip into the solvent bottle.
- (d) Proceed to Items 6 and following on Page 1.

TEXAS NUCLEAR PROBE ASSEMBLY - (Model 9261)

- (a) Remove the entire front cover assembly by loosening the three holding screws.
- (b) Aim the probe away from the body.
- (c) With the moist Q-tip, carefully clean the front face of the source holder and drop the Q-tip into the solvent bottle.
- (d) With the other Q-tip dry, wipe the source holder until all the remaining moisture is taken up and drop the second Q-tip into the solvent bottle.
- (e) Proceed to Items 6 and following on Page 1.



radiation SAFETY

WIPE TEST & SHUTTER CHECK

Item 9. Facilities & Equipment (continued)

GENERAL INFORMATION

Government Regulations require that this device be subjected to a periodic wipe test at intervals determined by the source holder type. (See the Wipe Test Frequency Table on page 2 of 4).

In addition, when the source holder has a shutter mechanism, the operation of this shutter mechanism must be checked whenever the source holder is wipe tested. (The NRC recommends shutter mechanism operation every 6 months).

Instructions for the required test(s) are given below.

Because of the extremely rugged construction of the sealed radioactive source contained in this device, the possibility of radioactive material leaking from the source capsule is very remote.

In addition, the source capsule is contained in a source holder whose construction has been evaluated and approved by the United States Nuclear Regulatory Commission. Therefore, even if the source capsule should leak, the possibility of radioactive material reaching the outside of the source holder is exceedingly remote.

INSTRUCTIONS FOR WIPE TESTING A SEALED SOURCE IN A SOURCE HOLDER

The source holder of the gage must not be disassembled for the wipe test. Testing the external surface of the source holder is adequate. Do the following:

- (1) Take the plastic bag containing the swabstick to the source holder to be tested.
- (2) Open the bag and grasp the swabstick by the end opposite the fiber tip. Do not touch the fiber tipped end or allow it to touch other objects as this would spread contamination if the source were leaking.
- (3) Wipe the external surface of the source holder with the fiber tipped end. Wipe ALL SEAMS and around the SHAFT OF THE SHUTTER MECHANISM. The illustration figure 1 shows, in general, the areas that should be wiped. These areas are "shown in Bold".
- (4) Attach the label provided with the wipe test kit. If a blank form has been provided fill in the information shown in figure 2. The wipe test kit should then be mailed to Ohmart for analysis.

NOTE: In newer kits, each transparent bag is identified with a label similar to the metal identification tag actually attached to the source holder. BE SURE TO USE THE PROPER KIT FOR THE DESIGNATED SOURCE HOLDER.

WIPE TEST & SHUTTER

HECK

WESTERN

TYPICAL SOURCEHOLDER

See pages 5&6 for illustrations of other sourceholders

Item 9. Facilities & Equipment (continued)

Upon receipt of the wipe, The Ohmart Corporation will perform a very sensitive test to determine the presence of radioactive contamination.

Results of the wipe test if found leak free are returned to the customer by mail. In case removable contamination is found less than 0.005 microcurie but significantly above background a new kit is sent for a rewipe. If contamination is evident on the second wipe although less than 0.005 microcurie the customer is advised to dispose of the source although it technically may not be leaking. All wipe test results should be kept on file along with the other required records. (see "Record Keeping Requirements and Recommendations for Users of Nuclear Gages" SDF-5379 or Maintenance-Radiation Safety Schedule.)

If greater than 0.005 microcurie of removable contamination is measured the customer is advised to remove the source or device from service and notify the proper Agreement State Agency or the Regional Office of Inspection and Enforcement USNRC as appropriate.

TEST OF THE SOURCE HOLDER SHUTTER MECHANISM

To test the shutter mechanism, move the actuator back and forth several times between the "off" and "on" position. The actuator should move easily but not freely. There will be some resistance to movement due to bearing friction and inertia of the mechanism. Use one of the two methods below to insure that the shutter mechanism is operational.

METHOD 1

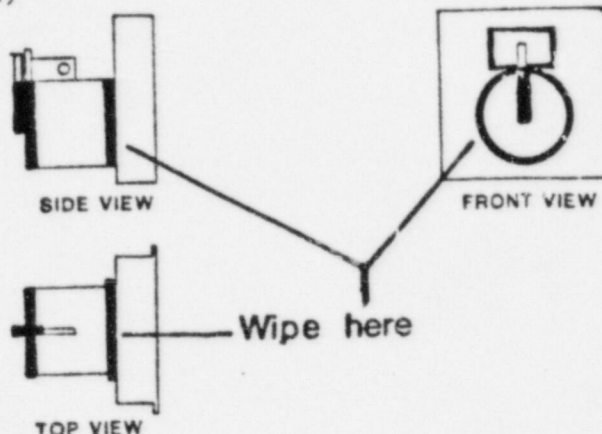
If a portable radiation survey meter is available, the radiation field intensity can be measured at the back of the detector housing. With the shutter in the "OFF" position, field intensity should be very low. When the shutter is moved to the "ON" position, the field intensity should increase.

METHOD 2

Under certain conditions, the gage electronics may be used to check shutter mechanism operation. Methods 2A or 2B may be used.

2A - With the gage operating under normal process conditions assure that the panel meter is reading "ON SCALE". Turning the shutter to the "OFF" position should cause the panel meter to peg upscale (reach greater than 100%). Be sure to open the shutter again to return the gage to normal operation.

2B - With no process material between the source and detector, turn the shutter to the "OFF" position and adjust the suppression dial for a panel meter indication of 100%. Opening the shutter should cause a downscale deflection of the panel meter.



(figure 1)

CHECK YOUR WIPE TEST FREQUENCY

ohmart radiation SAFETY		WIPE TEST FREQUENCY TABLE
PRODUCT(S)	SOURCE HOLDER SERIES	REQUIRED WIPE TEST FREQUENCY
Belt Scales and Moisture Gages	SHWA, SHRM	3 Months
	ES	
Density and Level Gages	SR	
	HM	
	SH-100	
Level Gages	SHRD	
	SHRH	
	SHRM	
	SHRM PA	
	SHSP	
	SHD	
	SHDP	
	SHLM	
	SHGS	
	SHLG	
Belt Scales	SHN	6 Months
	BAL	

The Ohmart Corporation
4000 Highway 90 - Birmingham, AL 35202
Phone 205-955-1000 - Telex 955-1000
Attn: Customer Ch.
P.O. Box 2
Birmingham, AL 35210
Attn: Shutter

Wipe Test Kit

Order - This kit is to be used only on the Ohmart radiation detector series. The information below appears on the inside flap of the kit.
Order - This kit is to be used only on the Ohmart radiation detector series. The information below appears on the inside flap of the kit.
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(figure 2)



IF YOU ARE A DO-IT-YOURSELFER, REMEMBER THAT OHMART CONDUCTS MONTHLY COURSES IN RADIATION SAFETY. THESE COURSES ARE RECOGNIZED BY THE UNITED STATES NUCLEAR REGULATORY COMMISSION. CONTACT THE TRAINING DIRECTOR, OHMART FOR FURTHER INFORMATION.



radiation SAFETY

WESTERN NUCLEAR, INC.

WIPE TEST & SHUTTER CHECK

Item 9. Facilities & Equipment (continued)

GENERAL

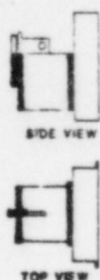
The source holders most commonly used by Ohmart are illustrated on this attachment by gage type and source holder model. If your source holder is not illustrated here, please contact the Radiation Safety Officer, Ohmart for additional information.

When performing a wipe test, wipe vigorously the outer surface of the source holder, especially at the seams and around the shutter mechanism on gages which have a shutter mechanism.

Heavy outlined areas indicate where source holders should be wiped.

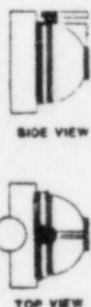
WNIs Source Holders

Source Holder SR Series

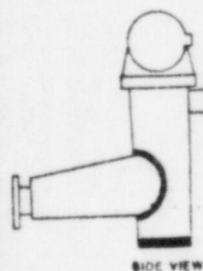


For Density Gages

Source Holder HM Series

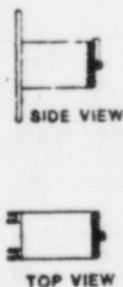


Source Holder ES Series



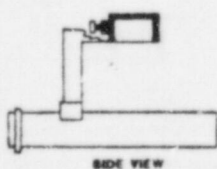
For Density Gages

Source Holder SR-1A Series



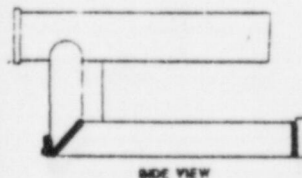
For Belt Scales

Source Holder SHWA



For Moisture (Belt) Gages

Source Holder SHRM Series



WESTERN NUCLEAR, INC.

ITEM 10. RADIATION SAFETY PROGRAM

All mill operators and employees working with the x-ray machines wear personnel dosimeters that are exchanged on a quarterly basis. Because of the design of the sealed source/holders, direct reading pocket dosimeters are not warranted.

The radioactive sources in these instruments are periodically leak-tested. Because of the design of the sealed source holders, external radiation surveys are not warranted. Leak-testing is performed in accordance with the manufacturers' instructions specifying the handling and use of these instruments. The Americium-241 source will not be leak-tested.

Should results of leak-testing prove positive, appropriate corrective actions will be taken as necessary to mitigate the situation.

WESTERN NUCLEAR, INC.

ITEM 11. WASTE MANAGEMENT

No waste disposal is involved. In the event the instrument or source use is discontinued, the device will be returned to the manufacturer for removal of the radioactive material.