

**MATERIALS LICENSE**

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

<p>Licensee</p> <p>1. Department of the Army U.S. Army Communications - Electronics Command AMSEL-SF-RER</p> <p>2. Fort Monmouth, New Jersey 07703-5024</p>	<p>In accordance with the letter dated July 30, 1998,</p> <p>3. License number 29-01022-06 is amended in its entirety to read as follows:</p> <p>4. Expiration date February 28, 2005</p> <p>5. Docket No. 030-05248 Reference No.</p>
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<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Any byproduct material with atomic numbers 1 through 83</p> <p>B. Any byproduct material with atomic numbers 84 through 95</p> <p>C. Hydrogen 3</p> <p>D. Cobalt 60</p> <p>E. Strontium 90</p> <p>F. Cesium 137</p> <p>G. Uranium (Natural or Depleted)</p> <p>H. Thorium (Natural)</p> <p>I. Polonium 210</p> <p>J. Plutonium 238</p> <p>K. Americium 241</p> <p>L. Californium 252</p> <p>M. Cesium 137</p>	<p>7. Chemical and/or physical form</p> <p>A. Any</p> <p>B. Any</p> <p>C. Accelerator targets</p> <p>D. Sealed sources</p> <p>E. Sealed sources</p> <p>F. Sealed sources</p> <p>G. Any</p> <p>H. Any</p> <p>I. Any</p> <p>J. Sealed sources</p> <p>K. Any</p> <p>L. Sealed source</p> <p>M. Sealed sources (J.L. Shepherd Model 6810)</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. Not to exceed 1 curie per radionuclide and 10 curies total</p> <p>B. Not to exceed 1 millicurie total</p> <p>C. 30 curies</p> <p>D. 7 curies</p> <p>E. 5 curies Ex2</p> <p>F. 15 curies</p> <p>G. 5 kilograms</p> <p>H. 10 kilograms</p> <p>I. 10 microcuries</p> <p>J. 10 microcuries</p> <p>K. 1 millicurie</p> <p>L. 1 curie Ex2</p> <p>M. 1 curies</p>
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Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 2  
FOIA 06-028

Q/21

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License Number  
29-01022-06

Docket or Reference Number  
030-05248

Amendment No. 44

- |   |   |  |
|---|---|--|
| 6. Byproduct, source, and/or special nuclear material | 7. Chemical and/or physical form            | 8. Maximum amount that licensee may possess at any one time under this license |
| N. Cesium 137   | N. Sealed source (J.L. Shepherd Model 6810) | N. <sup>Ex 2</sup> 1 curies  |
| O. Cesium 137   | O. Sealed source (J.L. Shepherd Model 6810) | O. 130 millicuries   |

9. Authorized use:

- A. through L. Research and development as defined in 10 CFR 30.4; for training and instrument calibrations; analysis of test samples as a service for persons as defined in 10 CFR 20.1003; calibration of instruments as a service for persons as defined in 10 CFR 20.1003.
- M. For use in a J.L. Shepherd Model 81-14Q calibrator; calibration of instruments as a service for persons as defined in 10 CFR 20.1003.
- N. and O. For use in a J.L. Shepherd Model 89-260 calibrator; calibration of instruments as a service for persons as defined in 10 CFR 20.1003.

**CONDITIONS**

10. Licensed material may be used only at the licensee's facilities located at the U.S. Army Communications - Electronics Command, Fort Monmouth, New Jersey.
11. A. Licensed material shall be used by, or under the supervision of, individuals designated in writing by the Radiation Safety Committee, Joseph M. Santarsiero, Chairman.
- B. The Radiation Safety Officer for this license is Joseph M. Santarsiero.
12. Licensed material shall not be used in or on human beings.
13. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.
14. The licensee shall not acquire licensed material in a sealed source or device unless the source or device has been registered with the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or equivalent regulations of an Agreement State.
15. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**License Number  
29-01022-06Docket or Reference Number  
030-05248

Amendment No. 44

16. A. Sealed sources and detector cells containing licensed material shall be tested for leakage and/or contamination at intervals not to exceed six months or at such other intervals as are specified by the certificate of registration referred to in 10 CFR 32.210, not to exceed three years.
- B. Notwithstanding Paragraph A of this Condition, sealed sources designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed three months.
- C. In the absence of a certificate from a transferor indicating that a leak test has been made within six months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
- D. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.
- E. Sealed sources and detector cells need not be leak tested if:
- (i) they contain only hydrogen-3; or
  - (ii) they contain only a radioactive gas; or
  - (iii) the half-life of the isotope is 30 days or less; or
  - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
  - (v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transfer to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
- F. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission and the source or detector cell shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within five days of the date the leak test result is known with the appropriate U. S. Nuclear Regulatory Commission, Regional Office referenced in Appendix D of 10 CFR Part 20. The report shall specify the source or detector cell involved, the test results, and corrective action taken.
- G. The licensee is authorized to collect leak test samples for analysis by the licensee. Alternatively, tests for leakage and/or contamination may be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.

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17. The licensee shall conduct a physical inventory every six months to account for all sealed sources and devices containing licensed material received and possessed under the license.
18. This license does not authorize commercial distribution of licensed material.
19. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
20. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Letter dated February 15, 1995
- B. Letter dated March 15, 1995
- C. Letter dated May 19, 1995
- D. Letter dated August 15, 1995
- E. Letter dated March 10, 1997
- F. Letter dated April 11, 1997
- G. Letter dated May 12, 1997
- H. Letter dated July 30, 1997
- I. Letter dated August 27, 1997, with attachment
- J. Letter dated December 2, 1997
- K. Letter dated July 30, 1998



For the U.S. Nuclear Regulatory Commission

Date August 24, 1998

By

*Original signed by Sattar Lodhi, Ph.D.*

Sattar Lodhi, Ph.D.  
Nuclear Materials Safety Branch 2  
Division of Nuclear Materials Safety  
Region I  
King of Prussia, Pennsylvania 19406

August 24, 1998

Docket No. 030-05248  
Control No. 125946

License No. 29-01022-06

Steven A. Horne  
Director, Safety Risk Management  
Department of the Army  
U.S. Army Communications -  
Electronics Command AMSEL-SF-RER  
Fort Monmouth, NJ 07703-5024

Dear Mr. Horne:

This refers to your license amendment request dated July 30, 1998. Enclosed with this letter is the amended license.

Please review the enclosed document carefully and be sure that you understand and fully implement all the conditions incorporated into the amended license. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region I Office, Licensing Assistance Team, (610) 337-5093 or 5239, so that we can provide appropriate corrections and answers.

Thank you for your cooperation.

Sincerely,

***Original signed by Sattar Lodhi, Ph.D.***

Sattar Lodhi, Ph.D.  
Health Physicist  
Nuclear Materials Safety Branch 2  
Division of Nuclear Materials Safety

Enclosure:  
Amendment No. 44

cc:  
Joseph M. Santarsiero, Radiation Safety Officer

ML10

S. Horne  
Department of the Army

2

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To receive a copy of this document, indicate in the box: "C" = Copy w/o attach/encl "E" = Copy w/ attach/encl "N" = No copy

OFFICE	DNMS/RI	<input checked="" type="checkbox"/> N	DNMS/RI	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NAME	SLodhi <i>SL</i>						
DATE	08/24/98	08/ /98	08/ /98	08/ /98	08/ /98	08/ /98	08/ /98

OFFICIAL RECORD COPY

U.S. Army Communications-Electronics Command

CECOM  
Directorate of Safety Risk Management  
ATTN: AMSEL-SF-RE  
Fort Monmouth, NJ  
07703-5024  
Monday, August 24, 1998

FROM: Mr. Barry J. Silber  
PAGES: 2

TO: Dr. Satar Lodhi  
NRC Region I  
Fax: (610) 337-5269

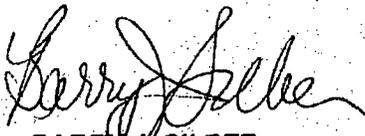
Reference: NRC License Number 29-01022-06; Mail Control Number 125946.

Please pass this datafax to Dr. Satar Lodhi.

Dr. Lodhi, as we discussed, enclosed is the letter from J.L. Shepherd and Associates indicating that their Model 89-260 self contained calibrator contains two sources of Cesium-137.

Your expeditious processing of this amendment request is appreciated.

Thank you.

  
BARRY J. SILBER  
Health Physicist

Reply info:

Voice: COM (908) 532-9723, x6440  
DSN 992-9723, x6440  
FAX: COM (908) 532-6403  
DSN 992-6403

silber@doim6.monmouth.army.mil

FEE EXEMPT

125946

AUG 24 1998

JUN-17-1998 09:54

JLSA

8188982361 P.01

# JL SHEPHERD & ASSOCIATES

1010 ARROYO AVE, SAN FERNANDO, CALIFORNIA 91340-1822

818-898-2361 FAX 818-361-8095

June 16, 1998

Burt Cummins  
Ft. Monmouth

Fax: 732-427-2667

24 Pages

Dear Mr. Cummins:

Per your request of Ralph Jacobs, the Registry of Radioactive Sealed Sources and Devices (SS&D) Number for the Model 89 Series Calibration Range is CA598D108S. The Sub-model designation is Model 89-260.

The maximum Cesium-137 source loading for the Model 89-260 is 300 Curies Cesium-137 total, in two sources, nomially 260 Curies and 130 millicuries.

The approved source for use in this unit that we will be providing is a any approved source as specified in JLS&A Model 28, 78 and 81 SS&D Sheets (enclosed).

I've also enclosed an operating manual and descriptive information on this device.

Please let me know if you require additional information.

Sincerely yours,

J.L. SHEPHERD AND ASSOCIATES

Mary F. Shepherd  
Vice President



**DEPARTMENT OF THE ARMY**  
 HEADQUARTERS, US ARMY COMMUNICATIONS-ELECTRONICS COMMAND  
 AND FORT MONMOUTH  
 FORT MONMOUTH, NEW JERSEY 07703-5000

REPLY TO  
ATTENTION OF

July 30, 1998

030-05248

Directorate of  
Safety Risk Management

U.S. Nuclear Regulatory Commission  
Region I  
475 Allendale Road  
King of Prussia, PA 19406-1415

Attention: Licensing Assistance Section

This refers to U.S. Nuclear Regulatory Commission (NRC) License Number 29-01022-06, Docket Number 030-05248.

We are requesting an amendment to our NRC license to authorize possession and use of the J.L. Shepherd and Associates (JLS) Model 89-260 Calibrator. The calibrator will be loaded with the following sealed sources:

<u>Radionuclide</u>	<u>Activity</u>	<u>Sealed Source</u>
Cesium 137	[ ] Curies	JLS Model 6810
Cesium 137	130 millicuries	JLS Model 6810

Ex 2

Regulatory, safety and technical information for the JLS Model 89-260 is contained in the Registry of Radioactive Sealed Sources and Devices, Safety Evaluation of Device, Number CA598D108S dated April 13, 1995. The JLS Model 89 Series calibrator is a shielded box design. The JLS Model 89 contains sufficient shielding such that a shielded room/facility is not warranted. The cavity door and the source operating mechanism associated with this calibrator are equipped with solenoid latches, which are spring loaded in the "locked" position. The calibrator also equipped with a switch, constructed in such a manner that the door cannot be opened unless the source rod is in the shielded (off) position, the solenoid latch is locked engaging the switch for the door latch solenoid. Likewise, the source cannot be exposed (on) unless the door is closed, locked, and engaging the switch for the source lock solenoid, while the door bolt is in position though the arm welded on the door. The microswitch is operated by the door bolt, when it is in the locked position and is actuated.

The calibrator will be used in [ ]  
Fort Monmouth, NJ.

Ex 2

**FEE EXEMPT**

1 2 5 9 4 6

JLS representatives will perform installation of this system, including all safety and interlocking controls. They will also provide training on the operation and use of this system to our user personnel. These individuals already meet the operator training criteria, based on their education, training and experience. The JLS Model 89-260 is required to support our calibration of portable radiation detection instrumentation and personnel dosimeters.

Use of the calibrator will be restricted to approved calibrator operators. Access control of this facility is under direct key control, limited to authorized users/operators and radiation protection staff. Thermoluminescent dosimetry will be assigned to calibrator operators. Calibrated radiation detection instrumentation is available for use with this calibrator.

Leak testing of the sealed sources in the JLS Model 89 will be performed at six-month intervals. Nonroutine maintenance of the calibrator will be performed by JLS or other persons specifically licensed to perform such services.

Enclosure 1 is the J.L. Shepherd Model 89 Installation and Operating manual, including emergency procedures to be followed. A standard operating procedure will be developed and implemented and will contain instructions for the operation, use, maintenance and emergency procedures as recommended by the manufacturer. This includes verifying the proper functioning of the indicator lights and interlock systems and inspection of the calibrator door hinge pins.

Your expeditious processing of this amendment request is appreciated.

Our Point of Contact is Mr. Joseph M. Santarsiero or the undersigned, Facsimile on (732) 532-6403 or (732) 542-7161; Voice on (732) 427-4427/3112.

Sincerely,



STEVEN A. HORNE  
Director, Safety  
Risk Management

Enclosures

Copy Furnished:

Commander, U.S. Army Materiel Command, ATTN: AMCSF-P, 5001  
Eisenhower Avenue, Alexandria, Virginia 22333-0001

22 11-3 1111

OPERATING MANUAL  
MODEL 89 SHIELDED CALIBRATION RANGE  
COMPLETE WITH MODEL 78-2M CALIBRATOR  
AND MODEL 154 ATTENUATOR SYSTEM

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Encl 1

3. These wipes should be measured on an instrument capable of detecting 0.005  $\mu\text{Ci}$  of Cs-137, Co-60, or Sr-90, depending upon isotope loading of your device.
4. If contamination above this level is detected, remove the device from service immediately and notify the manufacturer.

NOTE: The 0.005  $\mu\text{Ci}$  level is that generally prescribed by regulatory authorities; individual institutions may require more stringent standards.

## II. MODEL 89 OPERATING INSTRUCTIONS

### A. OPERATING INSTRUCTIONS - MODEL 78-2M CALIBRATOR:

To expose either source, press the source release switch, grasp the black operating knob and raise it. The source is now unlocked. NOTE: The operating handle engages the horizontal slot in the tower cover.

To return the source to the "OFF" position, grab the operating knob and push knob to the left and lower the knob until the operating rod rests at the bottom of the milled cutout. The source is now fully shielded.

The green light will glow when both sources are in the "OFF" position. Individual red lights glow when either of the sources are in the "IRRADIATE" position.

### B. OPERATING INSTRUCTIONS - MODEL 154 ATTENUATOR SYSTEM:

Attenuators are moved from the "Open" to the "Attenuate" position and vice-versa by sliding action operated by the handle attached to each attenuator. These handles extend through the side of the calibrator and are equipped with an extension rod and a black knob facing toward the front of the calibrator.

**CAUTION: DO NOT ATTEMPT TO TWIST OR TURN THE OPERATING HANDLES. THIS CAN DAMAGE THE ATTENUATORS.**

Operate the attenuators by sliding them in a horizontal direction using the handles provided. With the attenuators in the "Attenuate" position, they are pushed fully in toward the center of the calibrator. With the attenuators in the "Open" position, they are pulled out against the positioning stops provided.

C. OPERATING INSTRUCTIONS - MODEL 89 SHIELDED CALIBRATION RANGE:

Remove the lock from the door latch. With both sources in the "OFF" position, press the momentary pushbutton switch located at the side of the interlock box which in turn is located below the attenuator system and open the door.

The access plugs on the back surface are accessed by removing the lock bolt and slipping the plug out.

Instruments to be calibrated are placed on the rolling table which is equipped with a scissors-type operating mechanism operated by a handle facing the end of the range. The elevating table has an engraved plated on the top (at 1 cm intervals).

Place the center of the detector to be calibrated at the center of table, the center of table (0-0 line) a minimum of 3", ideally 5" above table top. Note: Less distance will result in approximately 4% scatter. Adjust the elevation so that the center of the detector is at the center of the vertical scale mounted in the middle. Close the door and raise the desired source. The source-to-center-of detector distance may be read directly on the counter mounted below the door.

The handwheel found below the access door to the calibration range controls the distance of the rolling table.

D. ADJUSTMENT OF THE TABLE POSITION INDICATOR

With the table positioned so that the edge of the table is in contact with the front face of the interior of the Model 89, (at the centerline of the beamport), the table position indicator should read exactly 281.

Adjustments may be made by loosening the set screws in the counter drive sprocket, making the necessary adjustments and tightening.

**E. EMERGENCY PROCEDURES**

If, at any time, the operation of the source rod becomes difficult, the calibrator should be removed from service. It should be taken to a hot cell, the source rod removed and both the source rod and the tube through which it slides should be cleaned. Difficult operation will be caused by dirt or foreign particles falling into the source tubes.

**F. MAINTENANCE**

**DO NOT LUBRICATE THE SOURCE ROD AT ANY TIME IN ANY WAY. LUBRICATION OF ANY KIND WILL VOID THE WARRANTY.**

Operate the unit in a clean atmosphere. Do not permit other particles to fall into the hold at the top of the unit. When not in operation, it is recommended that the calibrator be covered, i.e., with a plastic bag.

**G. CALIBRATION PROCEDURES FOR MODEL 89 CALIBRATION FACILITIES****SECTION I: INSTRUMENTS USED FOR PRIMARY CALIBRATION BY J.L. SHEPHERD & ASSOCIATES**

The primary instrument used in calibration Model 89 Calibration Facilities is the MDH Model 2025AC Radiation Monitor with Model 20x5-3 (3cc) and 20x5-180 (180 cc) Electrometer/Ion Chambers; which is custom built to specifications for J.L. Shepherd & Associates by MDH.

Alternately, the Landsverk Model L64 Roentgen Meter, with 20 mR Model 121, 100 mR Model 122, 1 R Model 123, 10 R Model 124, 100 R Model 127, 1000 R Model 128 and 10,000 R Model 129 Chambers, is used for calibration.

**SECTION II: STANDARDIZATION OF PRIMARY CALIBRATION INSTRUMENTS BY J.L. SHEPHERD & ASSOCIATES**

The MDH Model 2025AC Radiation Monitor with both chambers is calibrated by MDH at intervals not exceeding one (1) year. Additionally, the MDH Meter is calibrated quarterly, in-house by J.L. Shepherd & Associates, against a NIST (formerly NBS) standard radium sources, Certificate Number 30213, 30214 and 30207 through 30212 (inclusive). Note: The original and all historical

Certificate of Conformance Reports by MDH are kept on file at J.L. Shepherd & Associates for meters used by J.L. Shepherd & Associates. Original reports are provided with each MDH meter purchased through J.L. Shepherd & Associates. The Landsverk Model L64, with the various chambers as listed, is calibrated quarterly using the radium standards as listed above and by cross calibration with the MDH Meter, under identical operating conditions.

SECTION III: CALIBRATION PROCEDURE FOR THE MODEL 89, USING THE MDH 2025AC RADIATION MONITOR AND CHAMBERS.

The primary Dose Rate vs. Distance Curves cover the 250 through 500 millimeter source centerline to 0-0 table location distance. These curves are generated by utilizing the MDH Model 2025AC Radiation Monitor and ion chambers, as listed above. Each chamber centerline is positioned at the centerline of the source and 5" above the 0-0 line on the calibration table. The data on the curves have had all necessary corrections for ambient temperature and pressure, as called out in the MDH Manual. Note: All data taken with the 20x5-180 (180cc) chamber is normalized to data taken with the 20x5-3 (3cc) chamber to eliminate the geometry differences due to the size variation of these two chambers. All calibration with the 20x5-3 chamber, except for in-port positions, is taken with the chamber axis perpendicular to the source.

Correction Calculation used by J.L. Shepherd & Associates:

Chamber Correction	Temperature	Pressure	Correction Factor
3cc	$\frac{273 + C}{295}$	$\frac{101.3}{3.39 \times \text{_____}}$	$\times 60 = \text{_____}$ (R/hr)

Sample Equation:

3cc .99	$\frac{273 + 21.67 C}{295}$	$\frac{101.3}{3.39 \times 30.21}$	$\times 60 = 58.86$ (R/hr)
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1. Ascertain the table position indicator is reading correctly, per Section D of the Operating Instructions. NOTE: Source centerline to 0-0 table location is carefully calibrated, using a precision scale, prior to original calibration at the factory. Also ascertain that the table is level.
2. Using the calibration jig (provided by J.L. Shepherd & Associates), ring stand or other fixture, orient the centerline of either chamber as follows:

- a. In the source centerline, as determined by the vertical scale (or the vertical center of the beamport, with chamber axis perpendicular to the source (or parallel to the beamport)).
- b. 5" above the table top at the 0-0 line of the table.  
Note: Although the instrument table is aluminum, we have found 4% scatter off the table to 3" above the table, which is why we recommend that probes be located 5" from the table top.

NOTE: The 0-0 location will provide calibration points for the 300 through 500 millimeter range. To achieve the 250 mm point, the chamber must be positioned at the 0 line perpendicular to the beamport and the 5 centimeter line (towards the beamport from the 0 line) parallel with the beamport; the distance indicator will now read 350 for the 300 mm position and 300 for the 250 mm position.

3. Primary source and attenuator calibration. Starting at either the 300 or 500 mm distance (table should be moved in one direction only during calibration to avoid the  $\pm 1$  mm backlash in the drive system), calibration points are taken, starting with no attenuation through X-2000 for the 20x5-3 and starting with X-40 (to avoid saturation of chamber) through X-8000 for the 20x5-180 chamber, for units with a 400 Curie primary source.

20x5-3 Notes: Calibration points are taken on "Rate" until .099 (less than 3 significant numbers) is reached. Subsequently, 1 to 2 minute integrated runs are taken on "Exposure", 20.0 mR or less is the parameter for starting a 2 minute run. Exposures for longer than 2 minutes are not required, as these points (approximately 6 with a 400 Curie primary source) are calibrated with the 20x5-180 chamber. For units with smaller primary sources, a minimum of 4 cross calibrations are required (X-40 through X-200 Attenuators), at all distance positions.

20x5-180 Notes: Calibration points are all taken on "Rate".

4. Secondary source calibration. The secondary (usually 130 mCi) source is calibrated with the 20x5-180 probe on "Rate", unattenuated. Attenuator values are determined during primary source calibration, so this process is not duplicated with the secondary source.
5. RO-7 Port Calibration. The RO-7 calibration port (an option which takes the place of a 130 mCi source) is calibrated by placing the 20x5-3 chamber in the centerline of the port and taking points on "Rate" at 1/4" distances, using a precision scale.

6. RO-23 Port Calibration. All calibration ports for the RO-23 are taken using the 20x5-3 chamber (or Landsverk 10 mR chamber) at 1/4" intervals, using a precision scale at the vertical centerline of the source.

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

7/30/98, and to inform you that the initial processing which includes an administrative review has been performed.

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. *AMEND. 29-01022-06*

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 1 2 5 9 4 6  
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 (R1)  
(6-96)

Sincerely,  
Licensing Assistance Team Leader