

*file*

OCT 27 1983

State of Minnesota  
MN Dept. P.S. Div. E.S.,  
Radiological S.M. Program  
ATTN: John F. Deef  
MN ANG-Bldg. 644-Area D  
Mpls./St. Paul 1AP/MN 55111

License No. 22-06714-02  
Control No. 75799

SUBJECT: LICENSE RENEWAL APPLICATION

Gentlemen:

This is to acknowledge receipt of your application for renewal of the material(s) license identified above. Your application is deemed timely filed, and accordingly, the license will not expire until final action has been taken by this office.

Any correspondence regarding the renewal application should reference the control number specified and your license number.

Sincerely,

Material Licensing Section  
Region III

8408290555 840621  
NMS LIC30  
22-06714-02 PDR

DIVISION OF EMERGENCY SERVICES  
85 - STATE CAPITOL  
(612) 296-2233



MN.Dept.P.S.Div.E.S.  
Radiological S.M.Program  
MN.ANG-Bldg.644 Area D  
Mpls/St.Paul IAP,MN.55111

STATE OF MINNESOTA  
DEPARTMENT OF PUBLIC SAFETY  
SAINT PAUL 55155

19 Oct. 1983

RECEIVED BY FEMA  
Date 10-22-83  
Log 4-02  
By 0720  
Orig To  
Action Compl

Nuclear Regulatory Commission  
Material License Section  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Dear Sir

We would like to renew our license # 22 06714 02 which expires 11/30/83. This license was amended 11/10/82 so information is correct except as listed below:

1. The CDV 794-2 was returned to Federal Emergency Management Agency for service. The source was changed to Oak Ridge National Laboratory Model Nos. ORNL-2339AA or ORNL DSK-2384. Registry # NR-283-D-105-S. Maximum Activity 143 Ci. This CDV 794 calibrator will be returned to us upon approval of this license.
2. Due to a reduction in staff, the name of Thomas E. Seehuetter - Radiological Equipment Officer should be deleted. Any required reports will be made to or by the Radiation Protection Officer.
3. Due to the inability of your computer to print the lengthy address on the present license please use the condensed address typed above. This is the address of use of the calibrators.

We Would like to consolidate 22 06714 02, 22 06714 03, and 22 06714 04 into one license.

As FEMA expects to change the cobalt 60 training sources to cesium 137 in the future we would like this added to the license.

8. Licensed Material
  - A. Cesium 137
  - B. Sealed Source
  - C. 3 M Co. Model 4F6Y ( CDV 782 )
  - D. 20 mCi per capsule and 6 capsules per set ( 120 mCi ) A maximum of 100 sets for Minnesota.
  - E. These would be replacements for CDV 784 and used for training Radiological Monitors.
9. Storage of Sealed Sources
  - A. The capsules would be stored in CDV 791 and CDV 792 containers.
  - B. Manufactured by O.G. Kelley
  - C. Model 5 ( USA DOT 7A TYPE A )

The only difference would be in leak test evaluation ( less than .005 uCi ) instead of .05 uCi for the CDV 784 Cobalt 60 capsules. The rest of the requirements would be the same.

The License Fee Category: 170.11-7 All sources are returned to FEMA for disposal.

The person to contact about this application is the Radiation Protection Officer

John F. Deef R.P.O.  
Telephone 612-725-5585

FEE EXEMPT

RECEIVED

OCT 21 1983

REGION III

OCT 21 1983

Control No. 75799

AN EQUAL OPPORTUNITY EMPLOYER

PDR LP

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES  
SAFETY EVALUATION OF DEVICE  
(Corrected Copy)

NO: NR-283-D-105-S

DATE:

JUL 28 1983

PAGE 1 OF 4

DEVICE TYPE: High Range Calibration Unit

MODEL: CDY-794 Model No. 2

DISTRIBUTOR:

Federal Emergency Management Agency  
500 C Street, S.W.  
Washington, D.C. 20472

MANUFACTURER:

Technical Operations, Inc.  
Radiation Products Division  
Burlington, MA 01803

SEALED SOURCE MODEL DESIGNATION:

Oak Ridge National Laboratory Model Nos.  
ORNL-2339AA or ORNL DSK-2384

ISOTOPE: Cesium-137

MAXIMUM ACTIVITY: 143 curies

LEAK TEST FREQUENCY: 6 months

PRINCIPAL USE: (I) Calibration Source

CUSTOM DEVICE: \_\_\_\_\_ YES \_\_\_\_\_ ☒ NO

AUG 15 1983

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES  
SAFETY EVALUATION OF DEVICE  
(Corrected Copy)

NO: NR-283-D-105-S

DATE: JUL 28 1983

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DEVICE TYPE: High Range Calibration Unit

DESCRIPTION:

The calibrator, CDV-794 Model No. 2, contains a sealed Cesium-137 source that provides four intensity levels for calibrating radiation survey meters. Inside the calibrator, the radiation source has a fixed position relative to the survey meter in the exposure chamber. The specific strength of the radiation field in the exposure chamber is controlled through a rotary attenuator. While a meter is in the radiation field, calibration adjustments are done via remote controls. Meter readings are observed directly through the lead-glass window of the chamber door.

The nominal accuracy of the calibrator is maintained by the periodic (approximately every two years) adjustment of a decay compensator. The initial radiation intensity of the source is adjusted at the manufacturer's facility.

The source housing is made of a cast depleted uranium. The housing has three parts: main shield, attenuator disc, and the collimator.

The source is a composed Cesium-137 chloride pellet that is doubly encapsulated in 316 stainless steel and sealed by welding.

The Model ORNL 233 9A source has been replaced by a new source model ORNL-DSK-7384. The new source has been tested and meets Special Form testing requirements.

The entire source housing consisting of the exposure chamber and electronics assembly is placed in a lockable metal cabinet.

LABELING:

The unit is labeled in accordance with Section 20.203, 10 CFR Part 20.

DIAGRAM:

See Attachments 1 and 2.

CONDITIONS OF NORMAL USE:

The device will be used in a laboratory environment and by trained personnel to remotely calibrate high range CDV survey meters.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES  
SAFETY EVALUATION OF DEVICE  
(Corrected Copy)

NO: NR-283-D-105-S

DATE: JUL 28 1983

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DEVICE TYPE: High Range Calibration Unit

PROTOTYPE TESTING:

The sealed source Model ORNL-233 9A has previously been deemed acceptable by the NRC. The sealed source Model ORNL DSK-2384 has been tested and achieved DOT special form requirements. Also, the source achieved an ANSI N542 of 77E43525. The device manufacturer performed the following tests on the device:

- o Operational Test
- o Radiation Field Test
- o Temperature Test at -30°F to 125°
- o Humidity Test
- o Shock Test

EXTERNAL RADIATION LEVELS:

The device manufacturer reports that dose rates up to 400 R/hr are obtained within the chamber. Additionally, the device is designed so that radiation dose rates at every accessible surface of the unit, with the exception of the beam path, does not exceed 2 mr/hr.

QUALITY ASSURANCE AND CONTROL:

The manufacturer and distributor has previously submitted a program that was deemed acceptable by the NRC. A copy of the program is on file with the Material Certification and Procedures Branch.

LIMITATIONS AND/OR OTHER CONSIDERATIONS OF USE:

- o The device shall be distributed only to persons specifically licensed by the NRC or an Agreement State.
- o The device shall be leak tested at six month intervals using techniques capable of detecting 0.005 microcuries of removable contamination.
- o Handling, storage, use, transfer, and disposal: To be determined by the licensing authority. In view that the sealed source exhibit high surface dose rates when unshielded, the sealed source should be handled only by experienced licensed personnel using adequate remote handling equipment and procedures.
- o This registration sheet and the information contained within the references shall not be changed or transferred without the written consent of the NRC.



REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES  
SAFETY EVALUATION OF DEVICE  
(Amended Copy)

NO: NR-283-D-105-S

DATE: JUL 28 1983

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DEVICE TYPE: High Range Calibration Unit

SAFETY ANALYSIS SUMMARY:

Based on our review of the information and test dated cited below, that the device was previously deemed acceptable for licensing by the NRC in the 1960's, that the new replacement source improves the containment of Cesium-137 chloride pellets, we continue to find the CDV-794 model 2 calibration design acceptable for licensing purposes.

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

REFERENCES:

The following supporting documents for the Model CDV-794 No. 2 high range calibration unit are hereby incorporated by reference and are made a part of this registry document:

- o Federal Emergency Management Agency License No. 08-01297-06 and letter dated July 8, 1983, with enclosures thereto.

ISSUING AGENCY:

U.S. Nuclear Regulatory Commission

JUL 28 1983

Date: \_\_\_\_\_

Reviewer: \_\_\_\_\_

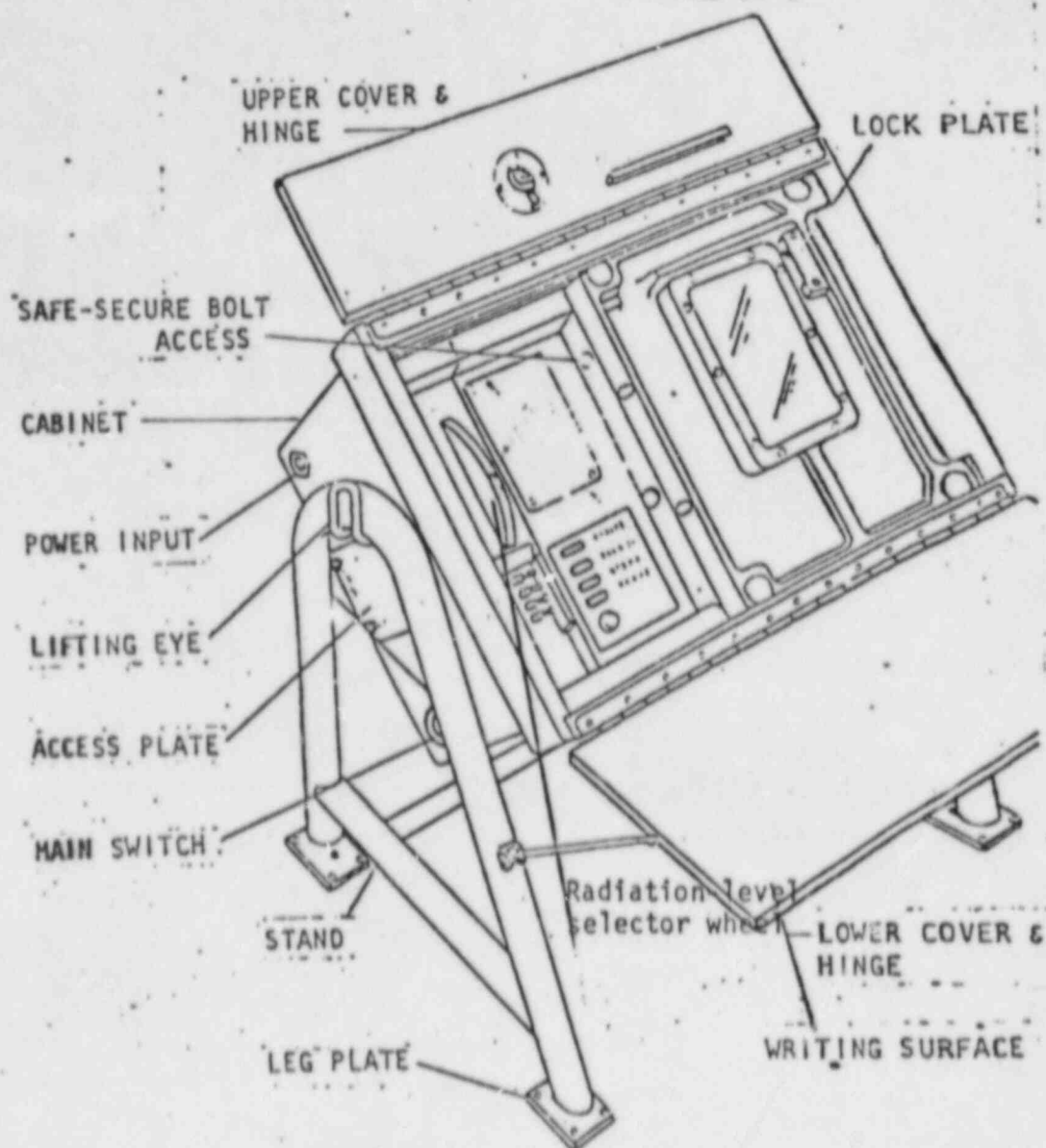
JUL 28 1983

Date: \_\_\_\_\_

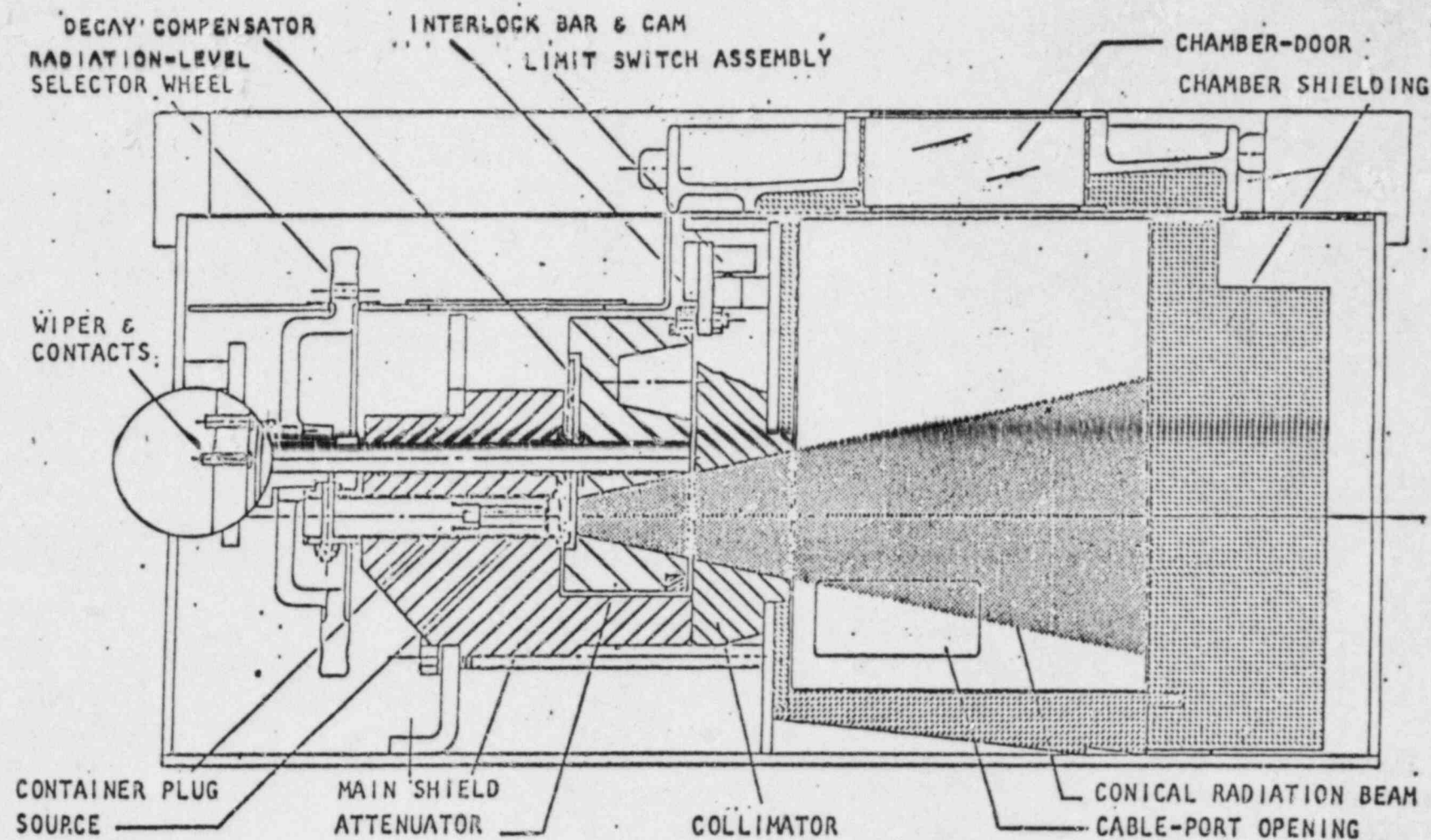
Concurrence: \_\_\_\_\_

Joseph M. Brown

JUL 28 1983



CDV-794 Model 2 High Range Calibration Unit



Source Housing for the CDV-794 Model 2 Calibrator