



U.S. Department of  
Transportation  
**Pipeline and  
Hazardous Materials  
Safety Administration**

East Building, PHH-23  
1200 New Jersey Ave, SE  
Washington, D.C. 20590

February 10, 2020

Dr. James M. Shuler  
Manager, Packaging Certification Program  
Department of Energy  
U.S. Department of Energy  
1000 Independence Ave, SW  
EM-60  
Washington, DC, 20585  
USA

Dear Dr. James M. Shuler,

As your February 5, 2020 letter requested, Department of Energy has been registered as a user of IAEA Certificate of Competent Authority USA/0161/S-96 for the New England Nuclear Models NER-550 and NER-560-A. The sources described in the attached certificate have demonstrated their ability to meet the regulatory requirements for special form radioactive material as prescribed in the regulations of the United States of America and the International Atomic Energy Agency.

A copy of the certificate is enclosed. All future revisions of the certificate will be forwarded to Department of Energy at [James.Shuler@em.doe.gov](mailto:James.Shuler@em.doe.gov).

Sincerely,

A handwritten signature in blue ink, appearing to read "Richard W. Boyle".

Richard W. Boyle, Chief  
Radioactive Materials Branch  
Office of Engineering and Research



U.S. Department  
of Transportation

Pipeline and  
Hazardous Materials  
Safety Administration

IAEA CERTIFICATE OF COMPETENT AUTHORITY  
SPECIAL FORM RADIOACTIVE MATERIALS

CERTIFICATE USA/0161/S-96, REVISION 7

East Building, PHH-23  
1200 New Jersey Ave, SE  
Washington, D.C. 20590

This certifies that the sources described have been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in the regulations of the International Atomic Energy Agency<sup>1</sup> and the United States of America<sup>2</sup> for the transport of radioactive material.

1. Source Identification - New England Nuclear Models NER-550 and NER-560-A.
2. Source Description - The sources described by this certificate are TIG welded doubly encapsulated sources constructed of Type 316L stainless steel. The Model NER-550 has a diameter of 7.0 mm (0.275 in.) to 25.4 mm (1.0 in.), and length 9.53 mm (0.375 in.) to 38.1 mm (1.5 in.). The Model NER-560-A has a diameter of 12.7 mm (0.5 in.), and length 17.15 mm (0.675 in.), with an additional 9.5 mm (0.375 in.) long threaded stud on the welded endcap. Minimum wall thickness of all inner and outer capsules is 0.635 mm (0.025 in.) and minimum plug thickness for each capsule is 1.27 mm (0.05 in.). Source construction must be in accordance with attached New England Nuclear Corporation Drawing No. 313-26, Rev. A (Model NER-550), or Model NER-560-A (Model NER-560-A).
3. Radioactive Contents - For the Model NER-550, not more than 37 GBq (1.0 Ci) of Americium-241. For the Model NER-560-A, not more than 2.22 GBq (60 mCi) of Americium-241 and 0.407 GBq (11 mCi) of Cesium-137. The Am-241 is in the form of americium oxide, mixed with beryllium powder and compressed into a pellet. The Cs-137 is in the form of CsCl in a glass fiber.
4. Special Conditions -

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<sup>1</sup> "Regulations for the Safe Transport of Radioactive Material, 2012 Edition, No. SSR-6" published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

<sup>2</sup> Title 49, Code of Federal Regulations, Parts 100-199, United States of America.

**CERTIFICATE USA/0161/S-96, REVISION 7**

- a. Model NER-550 and NER-560-A sources must be installed in NIC-5 moisture density gauges being transported for disposal purposes or in a AN/UDM-10 Neutron Calibrator transported within a Type A package.
  - b. Sources must have no known or suspected defects.
  - c. Sources must have a current satisfactory leak test in accordance with license conditions.
5. Management System Activities - Records of Management System activities required by Paragraph 306 of the IAEA regulations shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors in the United States exporting shipments under this certificate shall satisfy the requirements of Subpart H of 10 CFR 71.
6. Expiration Date - This certificate expires on November 30, 2023. Previous editions which have not reached their expiration date may continue to be used.

This certificate is issued in accordance with paragraph(s) 804 of the IAEA Regulations and Section 173.476 of Title 49 of the Code of Federal Regulations, in response to the September 25, 2018 petition by Department of the Navy, Washington, DC, and in consideration of other information on file in this Office.

Certified By:

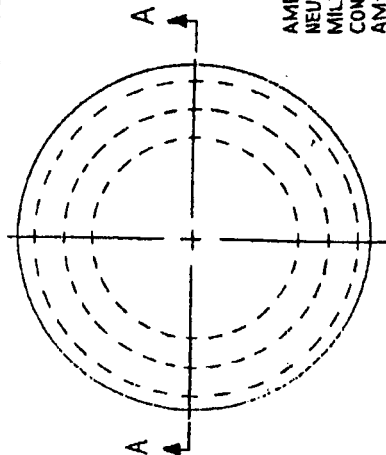


William Schoonover  
Associate Administrator for Hazardous  
Materials Safety

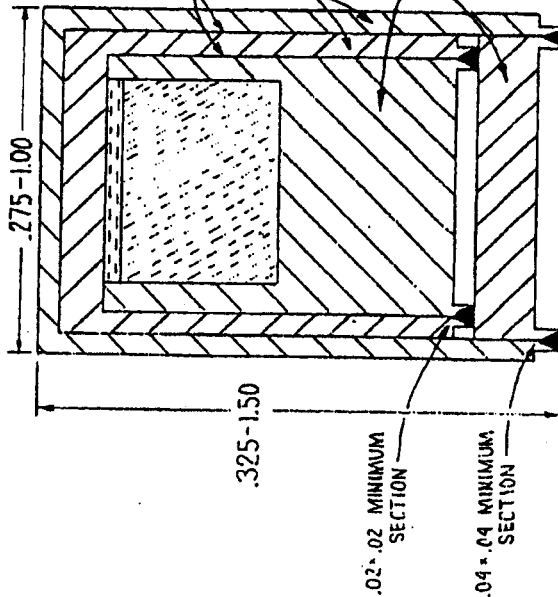
December 03, 2018  
(DATE)

Revision 7 - Issued to extend the expiration date and to allow for shipment in AN/UDM-10 neutron calibrators.

DATE	REVISION RECORD	AUTH.	DR. / E.C.
11/22	REDLAWN		MS
11/22	ADD SPECIAL TEST NOTES		MS

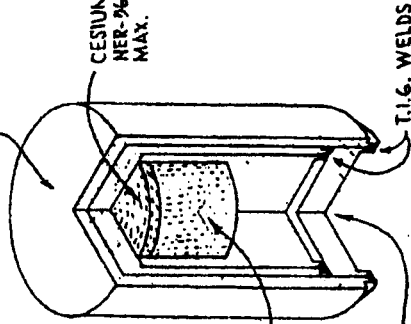


PLAN VIEW



SECTION A-A

ENGRAVE "NUCLIDE, MCI, S/A, DATE OF MFR., .062 MIN. x .005 DEEP"



CESIUM-137 SOURCE (MODEL NER-260 ONLY) 200 MILLICURIES MAX.

AMERICIUM-241 (BERYLLIUM NEUTRON SOURCE 1,000 MILLICURIES MAX. CONCENTRATION 1 CURIE AM-241/CC VOLUME (MAX.))

ATTACHMENT FIXTURE LOCATION

T.I.G. WELDS

PRESS FIT ASSEMBLY

SHELL WALL THICKNESS .025 MINIMUM

PLUG THICKNESS .05 MINIMUM

NOTES

1. ANSI N510-1968 PERFORMANCE CLASSIFICATION C (< 300 MCI) OR E 54434
2. D.O.T. SPECIAL FORM PER 10 CFR 71.4
3. LEAK TEST PER ANSI N510-1968 PROCEDURES B2.1 AND B2.4
4. MODEL NO. WITH SUFFEX (-1 ETC.) FOR EACH CONFIGURATION AND SIZE.

RADIATIONS

2.2-2.5 x 10<sup>3</sup> NEUTRONS/SEC./MCI AM-241  
0.32 MR/HR./MCI CS-137 AT 1 METER.  
(NER-560 ONLY)

CAPSULE MAT'L: CRES 316L STAINLESS STEEL

SPECIAL TEST NOTES  $\Delta$

1. INNER ENCAPSULATION ASSY. TO BE THOROUGHLY DECONTAMINATED & LEAK TESTED PER ANSI N510-1968 PROCEDURE B2.4, PRIOR TO ENCAPSULATION IN OUTER ASSY.
2. PRODUCTION LEAK TEST B2.1 PER NOTE 3 TO BE MADE AFTER WELDING. HOLD SOURCE 7 DAYS MIN. & RETEST PER PROCEDURE B2.1. SMEAR TEST LIMIT 1 x 10<sup>-4</sup> CI AM-241 / CS-137.
3. ASSAY SMEARS FOR AM-241 BY ALPHA I.P.C. & CS-137 BY U.S.C.

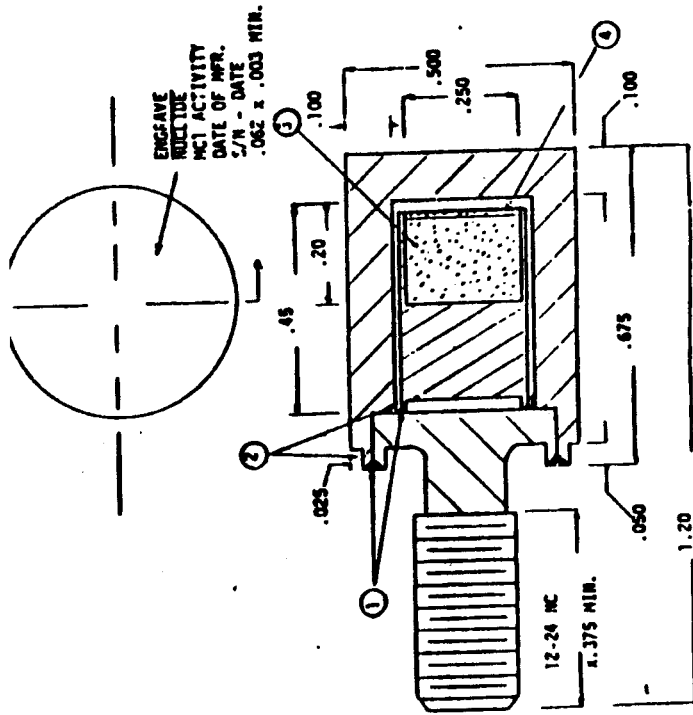
TOLERANCES (EXCEPT AS NOTED)	ORIGINAL	SCALE	DATE	DR. / E.C.
± .005		N.T.S.		
± 1/64				
± 30'			12-3-71	313-26

NEW ENGLAND NUCLEAR CORP.

NER-550 NEUTRON SOURCE  
NEUTRON GAMMA SOURCE

A

# MODEL NER-560-A





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1200 New Jersey Ave, SE  
Washington, D.C. 20590

**CERTIFICATE NUMBER:** USA/0161/S-96

**ORIGINAL REGISTRANT(S) :**

Eckert & Ziegler Isotope Products  
24937 Avenue Tibbitts  
Valencia, CA, 91355  
USA

Department of the Navy  
Naval Sea Systems Command  
1333 Isaac Hull Ave. SE  
Washington Navy Yard, DC, 20376-0001  
USA

**REGISTERED USERS:**

Department of Energy  
U.S. Department of Energy  
1000 Independence Ave, SW  
EM-60  
Washington, DC, 20585  
USA