



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 Agency¹ and the United States of America² 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 -

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

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

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- 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.

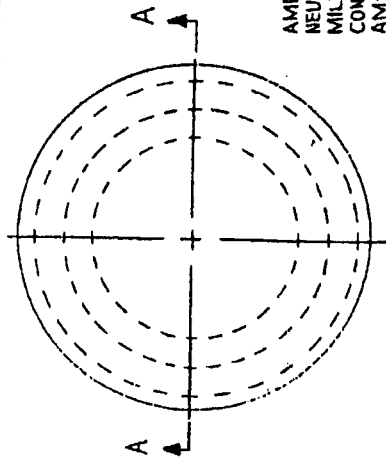
Certified By:



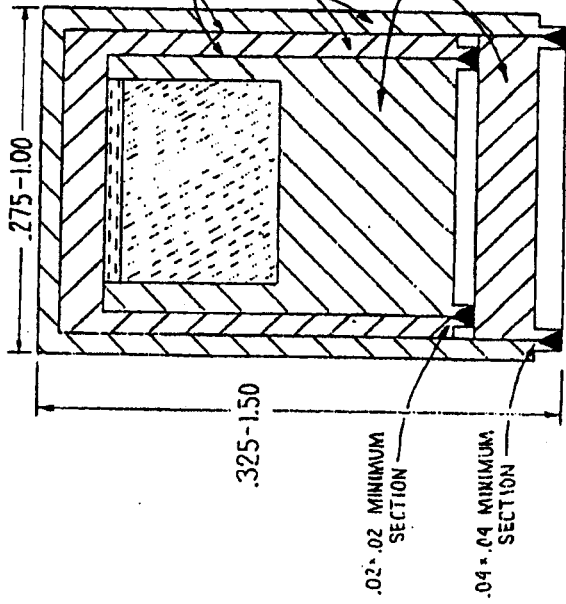
William Schoonover
Associate Administrator for Hazardous
Materials Safety

December 03, 2018
(DATE)

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



PLAN VIEW

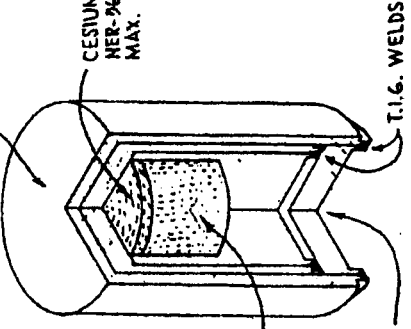


SECTION A-A

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

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

CESIUM-137 SOURCE (MODEL NER-560 ONLY) 200 MILLICURIES 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 SUFFIX (-1 ETC.) FOR EACH CONFIGURATION AND SIZE.

RADIATIONS

2.2-2.5 x 10³ 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 Δ

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 10⁻⁴ CI AM-241 / CS-137.
3. ASSAY SMEARS FOR AM-241 BY ALPHA I.P.C. & CS-137 BY U.S.C.

DATE	REVISION RECORD	AUTH.	DR.	EC.
11/22	REDLAWN			
11/22	ADD SPECIAL TEST NOTE			

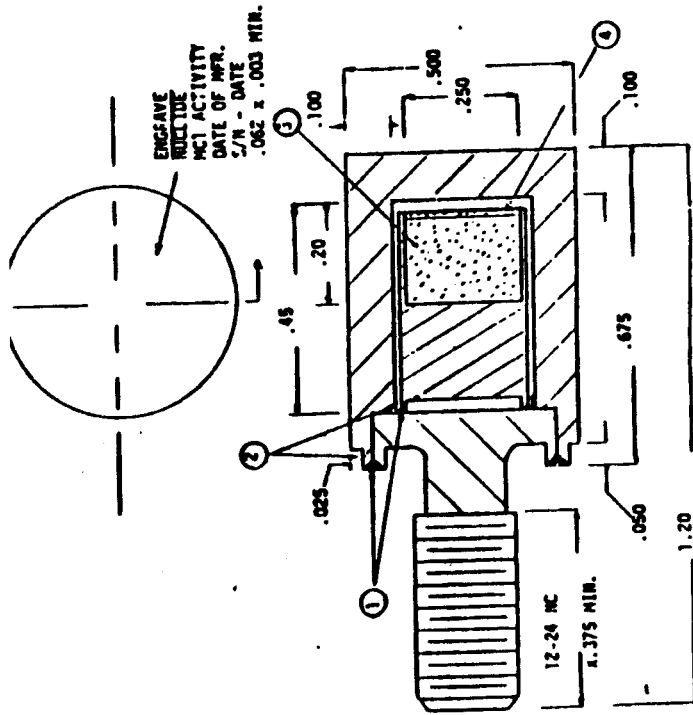
TOLERANCES (EXCEPT AS NOTED)	SCALE	DATE	DRAWING NUMBER
ORIGINAL ± .005	N.T.S.		
FRACTIONAL ± 1/64			
ANGULAR ± 30'		12-3-71	313-26

NEW ENGLAND NUCLEAR CORP.

TITLE: NER-550 NEUTRON SOURCE & NER-560 NEUTRON GAMMA SOURCE

A

MODEL NER-560-A





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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