

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES  
SAFETY EVALUATION OF SEALED SOURCES

Rec'd  
A.B.  
2/7/88

NO : TX333S102S

DATE: February 08, 1988

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SEALED SOURCE TYPE : Well Logging or Neutron Source

MODEL

(b)(2)

MANUFACTURER/DISTRIBUTOR: Gulf Nuclear, Inc.  
202 Medical Center Boulevard  
Webster, Texas 77598

MANUFACTURER/DISTRIBUTOR:

ISOTOPE: Am-241

MAXIMUM ACTIVITY

(b)(2)

LEAK TEST FREQUENCY 6 months

PRINCIPAL USE: Oil Well Logging

CUSTOM SOURCE: \_\_\_\_\_ YES X NO

CUSTOM USER:

B/17

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DESCRIPTION: The source is cylindrical in shape and varies from 0.75 to 1.25 inches in diameter and from 1.5 to 3.125 inches in length. The americium oxide is doubly encapsulated in stainless steel. The inner capsule has a minimum wall thickness of 0.015 inches and the outer capsule has a thickness of 0.060 inches. the capsule is sealed by TIG welding.

LABELING:

DIAGRAM:

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CONDITIONS OF NORMAL USE : The Gulf Nuclear Model (b)(2) sealed source is designed as a source of neutrons for neutron well logging. As such, this source will be exposed to pressures approaching 20,000 lbs./in.<sup>5</sup> and temperatures up to 1000 degrees fahrenheit. Because the source is designed to exceed these specifications, it may be installed either inside the logging tool or on the outside of the tool.

PROTOTYPE TESTING : No records were available which describe prototype testing.

EXTERNAL RADIATION LEVELS: The radiation levels for 1 curie of americium-241(Be) in this source are typically 42 mRem/hr at 1 foot for neutrons and 6.4 mRem/hr and 1 foot. The highest neutron output for this source is  $1 \times 10^7$  n-cm<sup>2</sup>/sec with a loading of (b)(2)

QUALITY ASSURANCE AND CONTROL : Each source is tested to ANSI standards and will meet the classification of ANSI 77-56522.

SAFETY ANALYSIS SUMMARY: Users of this source must be qualified logging professionals. Because this source must be installed into a logging tool before each use and removed from that tool after use, some risk of exposure is present. However, if used by a trained professional, exposures will remain within acceptable limits.

REFERENCES : This summary was prepared with the aid of Gulf Nuclear letters dated November 3, 1971, November 24, 1971, December 2, 1971 and August 8, 1972 and all associated drawings, documents and procedures.

DATE: February 08 1988

REVIEWED BY: EH&

DATE: February 08, 1988

REVIEWED BY: Joseph W. Klunger

ISSUING AGENCY: Texas Department of Health  
Bureau of Radiation Control

\*NOTE\* This device sheet has been rewritten to document the change in activity from (b)(2) and to document the proper model number.