JMB 0940

File - Ni-63 Loss

HEWLETT hp PACKARD

AVONDALE DIVISION · Route 41, Avondale, Pennsylvania 19311, Telephone 215-268-2281

May 4, 1970

Mr. James C. Malero
Isotopes Branch
Division of Materials Licensing
Atomic Energy Commission
Washington, D.C. 20545

Dear Mr. Malero:

Please excuse the delay of this communication. I have been holding the letter pending the release of the NRD report on nickel-63 loss at elevated temperature. The attached provides information on our ni-63 foil (model N-1002) requested by your office according to the outline of AEC evaluation requirements.

With reference to the NRD report, nickel loss is very minimal; even at temperatures significantly higher than the maximum use temperature of 360°c. In view of this finding, I propose for your consideration that wipe tests of nickel detectors no longer be required either by our customers or by ourselves as a routine production test. In the entire history of these products neither Mr. Taylor of NRD nor myself have knowledge of any wipe test producing a positive result.

We view this test as an unnessary expense that has now exceeded the precautionary measures that we once justified when less was known about nickel-63 loss. We look forward to your considered opinion on this proposal.

Sincerely,

M. B. Whittier

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Radiation Safety Officer

MW/jb

A. Source Model: N-1002

B. Proposed Use:

Radiation source for electron capture detectors on gas chromatographs.
Temperature up to 355 ± 5°C
Atmosphere - mixtures of helium, argon and methane in normal use.
Potential - 28 pulsed VDC above earth ground.

C. Radioisotope:

Nickel 63, 2 millicuries (approx), metal, plated deposition

D. Construction:

Source foil: see drawing A-05750-80120-1 attached. Method of sealing source is by gold flash.

Source holder: see drawing B-05750-61000-1, attached.

E. Prototype Test:

See attached report of tests prepared by Nuclear Radiation Developments, Inc.

F. Quality Control:

Foils are preloaded into the source holders by Nuclear Radiation Developments, Inc. Therefore, the supplier provides the quality control measures to assure that each source meets the required specifications and does not have construction defects. Prior to final testing, the cells are wipe tested for leakage and the data recorded with foil serial number.

G. Labeling:

See attached drawing A-7120-1581-1. The label is attached with rivets to the outside enclosure of the source holder heat sink.