



**DEPARTMENT OF THE NAVY**  
PEARL HARBOR NAVAL SHIPYARD  
AND INTERMEDIATE MAINTENANCE FACILITY  
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5104  
Ser 105/034  
21 Apr 22

Director, Office of Nuclear Material Safety and Safeguards  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Attention: GLTS

**SUBJECT: REPORT OF LEAKING SEALED RADIOACTIVE SOURCE**

On 30 March 2022, a routine leak test of an electron capture detector sealed Ni-63 source returned a result exceeding the Title 10 Code of Federal Regulations, Part 31.5(c)(5) limit of 0.005 microcuries. The source was secured from use and required notifications were made to the Nuclear Regulatory Commission Operations Center Hotline (Event Notice Number 55813). The enclosure to this letter serves as the written report to the Nuclear Regulatory Commission.

If you have additional questions, please contact Mr. Mark Tamashiro, Radiation Safety Officer, via telephone at (808) 330-4070 or via email at [mark.tamashiro@navy.mil](mailto:mark.tamashiro@navy.mil).

A handwritten signature in black ink, appearing to read "M. L. Thompson".

M. L. THOMPSON

Acting

Commander, Pearl Harbor Naval Shipyard  
and Intermediate Maintenance Facility

Enclosure: Written Report of Leaking Radioactive Source

## Written Report of Leaking Sealed Radioactive Source

### Description of the event.

On 18 March 2022, at approximately 1000 HST, an Assistant Radiation Safety Officer (ARSO) at Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility (PHNSY&IMF) performed a leak test on Gas Chromatograph (GC) containing an Electron Capture Detector (ECD). The ECD is an Agilent Technologies model number G2397A, serial number U-30532, sealed source that contains less than 15 milicuries of generally licensed Nickel-63 (Ni-63). This leak test was conducted as part of normal operations to satisfy the requirement for semi-annual leak tests. The leak test consisted of swipes taken on the entrance (inlet port), ECD housing and exit (outlet port) of the ECD.

On 30 March 2022, at 1502 HST, laboratory analysis of the leak test swipes were received by PHNSY&IMF. The swipe of the entrance of the ECD indicated  $6285 \times 10E-6$  microcuries of Ni-63. This was greater than the leak test limit of  $5000 \times 10E-6$  microcuries. The leak test swipes of the ECD exit and housing were both less than  $13 \times 10E-6$  microcuries.

### Notifications.

NAVSEADET RASO was notified by phone, 30 March 2022 at 1748 HST.

Nuclear Regulatory Commission (NRC) Headquarters Operations Center by phone, 31 March 2022 at 0921 HST. (NRC Event Notice No. 55813)

### Immediate Corrective Actions.

On 30 March 2022, at approximately 1600 HST, the GC containing the ECD was taken out of service and a hold tag was attached to the unit to prevent use.

On 31 March 2022, at 0600 HST, the area surrounding the GC was secured to prevent personnel access. At 1200 HST, additional swipes were taken by the ARSO. Swipe locations included various surfaces near the ECD and GC, the external of the GC, and the internal compartments of the GC where the entrance, housing and exit are accessible. Results indicated all swipes were less than  $18 \times 10E-6$  microcuries. Survey results validate that no radioactivity was spread to surfaces external to the ECD that personnel could have come in contact with. In addition, surveys performed on the internal compartments of the GC validate that there was no contamination spread within the machine.

On 5 April 2022, the controlled area surrounding the GC was reopened for unrestricted access. The GC containing the discrepant ECD remains tagged out of service awaiting disposition instructions from the manufacturer Agilent Technologies.

### Cause.

The cause of the equipment failure is unknown. The GC was operating normally prior to the leak test, and there was no indication that the equipment was being operated in a manner inconsistent with the manufacturer instructions. All pertinent information has been provided to the manufacturer for further analysis. Historically there has never been a failed leak test for this GC.

### Long Term Corrective Actions.

The discrepant ECD will be returned to the specific license holder, Agilent Technologies, for disposition. Agilent Technologies will provide PHNSY&IMF with instructions for the removal and shipment of the discrepant ECD.

### Radiological Significance.

There is no radiological significance as a result of this event as evidenced by:

1. All previous leak tests were less than the  $5000 \times 10E-6$  microcurie limit.
2. Swipes subsequent to the event, validate that no there was no spread of radioactive contamination external to the ECD.
3. The GC was not operated since the failed leak swipe was taken. No personnel were allowed in the immediate area.
4. There was no radiation exposure to personnel. The radioactive source used for the ECD is Ni-63, and is not considered an external radiation dose hazard. Since there is no evidence of spread outside of the ECD, and no external radiation hazard outside of the ECD, PHNSY&IMF concludes that there is no radiological significance to any personnel, surrounding laboratory areas, and environment.