



# UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES

ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE  
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September 12, 2022

U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001  
Attention: Document Control Desk

Dear Ms. Cindy Montgomery,

The Armed Forces Radiobiology Research Institute (AFRRI) is notifying the Nuclear Regulatory Commission (NRC) that the fission chamber (Reuter-Stokes RS-P6-0805-134, 14K024C5) that was previously reported missing on October 24, 2019 (refer to Event Report No. 54349) has been located within the controlled access area at AFRRI. All indications are that the fission chamber has been within the controlled access area at all times.

On the morning of Monday, August 1, 2022, the Pulse Uncompensated Ion Chamber (UIC) detector drywell installed on the core periphery was removed from the reactor pool for troubleshooting and inspection due to the detector not responding as expected. Upon opening the drywell it was discovered that the missing fission chamber was installed in the drywell and not the Pulse UIC. The fission chamber has been relocated to a proper special nuclear material (SNM) storage cabinet.

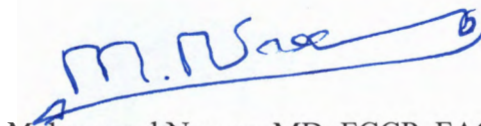
Prior to locating the missing fission chamber, AFRRI had already executed numerous corrective actions and steps to prevent a recurrence. These include both physical and administrative changes, such as the use of tamper seals, increased SNM inventory periodicities, and the implementation of a SNM storage cabinet logbook. The following is a summary of the sequence of events

- October 1, 2019: Annual inventory of special nuclear material (SNM) identifies that a fission chamber (Reuter-Stokes RS-P6-0805-134, 14K024C5) cannot be located.
- October 24, 2019: AFRRI notifies the NRC Operations Center (Event No. 54349) that the fission chamber detailed above cannot be located.
- November 1, 2019: AFRRI submits a follow up report to the NRC providing more detail regarding the missing fission chamber and actions that have been or will be taken. (Withheld from Public Disclosure under 10 CFR 2.390).
- November 14, 2019: The NRC conducts a reactive inspection.

- November 22, 2019: AFFRI submits a report detailing the facts and circumstances surrounding the missing fission chamber. (Withheld from Public Disclosure under 10 CFR 2.390).
- December 30, 2019: NRC issues reactive inspection report (ML19353C985). The NRC agrees to track the event as an unresolved item until January 22, 2020 to allow AFFRI time to conduct an exhaustive search for the fission chamber.
- February 3, 2020: AFFRI submits a follow up report to NRC that the fission chamber cannot be located. (Withheld from Public Disclosure under 10 CFR 2.390).
- March 3, 2020: NRC issues a Notice of Violation (NOV) Severity Level IV on March 3, 2020 (ML20023C341).
- March 30, 2020: AFFRI submits response to NOV.
- July 1, 2020: New AFFRI Leadership and Radiation Sciences Department (RSD) leadership arrives onsite.
- August 1, 2022: AFFRI locates missing fission chamber while troubleshooting the Pulse UIC.

This letter is in reply to the event Report No. 54349. I declare under penalty of perjury that the foregoing is true and correct. Should you need any further technical information, please contact Mr. Andrew Cook at (301) 295-3922.

Sincerely,

A handwritten signature in blue ink that reads "M. Naem". The signature is written in a cursive style and is enclosed within a blue ink scribble that forms a horizontal line with a small loop at the end.

Mohammad Naem, MD, FCCP, FACR  
Colonel, Medical Corps, US Army  
Director AFFRI