

## Sustaining the US Conventional Forensic Examination on RN Contaminated Evidence Capability

On June 3, 2010, the FBI Laboratory opened its newest partner facility dedicated to the examination of evidence contaminated with or containing radioactive and nuclear materials at the Savannah River National Laboratory (SRNL). The FBI facility, known as the Radiological Evidence Examination Facility (REEF), opened with great fanfare, with local, state, and federal politicians giving speeches and even a ceremonial ribbon cutting. Eleven years later, with the opening far in the past, the REEF remains the FBI's premier facility for examining RN (radioactive/nuclear) evidence and evidence contaminated with RN materials. The resilience of the REEF to continue to be operational and withstand regulatory hurdles, budgetary swings, and US policy changes is a result of active sustainment planning by the FBI and SRNL.

Sustainment was built into the REEF's initial plans. When initial funds were being authorized in 2005, decisions, which seemed simple at the time, continue to play significant roles in the operations at the REEF. Questions such as "What kind of RN materials do we expect?", "How much evidence do we think we'll need to process?", "What kind of examinations are needed?", and "How large do we expect the evidence to be?" set forth initial construction requirements which to this day bound what items can be sent to the REEF for examination.

The REEF was built in a phased approach, with the opening of a single RN capable suite in 2007 called the Radioactive Evidence Analysis Laboratory (REALS). This small two (2) room suite was a testbed for what the REEF would eventually become, a 12 room fully capable conventional forensic examination facility within a secure RN facility. The REALS allowed FBI and SRNL facility engineers to work together, learning each other's policies, rules, and regulations, the same ones necessary to create the REEF, but on a much smaller scale. It also allowed the FBI Laboratory's forensic examiners to gather their answers to the above questions using their years of experience processing evidence from crime scenes across the world. All of this was tempered by the underlying thought of "How is this capability going to be maintained in between cases?"

The REEF capability continues to be maintained by a robust exercise and drill program. Yearly, FBI examiners participate in exercises at the REEF where they work mock evidence, using the procedures and practices as if the evidence were contaminated with RN materials. Since 2017, these exercises have incorporated the use of F-18, a short-lived medical isotope. The mock evidence prior to examination is contaminated with the F-18, thereby giving the FBI examiners and the SRNL personnel supporting REEF operations the opportunity to work with real radioactive contamination, test new processes, and become more comfortable working within engineering controls.

Sustainability is and continues to be a key component to the success of the REEF at SRNL.

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