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T2.1-P09. Improving the Realism of Future Exercises and Training of Inspectors

The 2014 IFE was a challenging test. The scenario included a surface release and deposition of relevant radionuclides. From an overall standpoint, the exercise was a good test. However, it lacked in some key areas because of the inability to realistically produce and distribute short-lived fission products on the ground surface surrounding the suspect site. RN signatures and samples were grossly approximated using surrogate radioactive point sources and barcodes. Thus, the scenario lacked some of the physical distribution of radionuclides, and the expected energy and decay characteristics. Lawrence Livermore National Laboratory (LLNL) has developed and demonstrated a prototype system that can produce, in real time, highly realistic RN outputs through actual detectors. Elements of training scenarios such as the spatial distribution, mix, and decay are achieved by directly injecting pulses into the circuitry of detectors, mimicking an actual radiation field and pulse-by-pulse generation of high-resolution spectra. This prototype includes position-keeping and communications capability to enable situational awareness for exercise management. Near-realistic scenarios can be developed and executed while avoiding the use of actual radioactive sources. Other aspects, such as measurement restrictions and "virtual samples", could also be evaluated using the same technology.

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