

officials told the GAO. Some hospital administrators told the GAO they wanted the NRC to help with background checks.

The GAO found significant security lapses at some of the facilities it visited. At one unidentified hospital, the blood bank, which contained a blood irradiator with about 1500 curies of ^{137}Cs , had the combination to the lock written on the door frame. At another hospital, two ^{137}Cs research irradiators containing 2000 and 6000 curies were housed in a building open to the public. A security camera in the hallway outside the irradiator room was pointed the wrong way, and one of the machines was on wheels. There were no cameras or other security systems inside the room, which was accessed by a swipe card.

The Congressional Research Service report said the “layered defense” approach of the NRC rule reduces the likelihood of a successful terrorist attack: “Vulnerabilities are inevitable: someone deemed [trustworthy and reliable] might not be, security systems could fail, or police might not respond in time. Nonetheless, the ability of one layer to offset weaknesses in others can be expected to improve security, especially as terrorists would not necessarily know where vulnerabilities are or how to exploit them.”

Help with upgrades

In parallel with the NRC’s regulatory process, the Department of Energy’s National Nuclear Security Administration (NNSA) has been funding, installing, and maintaining new security equipment at medical facilities and at other sites using high-risk radiological sources. An NNSA official who requested anonymity says that as of early February the agency has provided physical protection upgrades to more than 500 US civilian facilities that use or store such sources. The official did not provide a breakdown of the number of medical facilities involved in the voluntary program. But the GAO report stated that the NNSA has identified approximately 1500 US medical facilities with high-risk radiological sources as candidates for security upgrades. In total, those facilities contain approximately 28 million curies of radioactive material.

According to the GAO report, the NNSA doesn’t expect to complete the medical facility upgrades until 2025, at a total estimated cost of \$608 million. The average cost so far for upgrades at each hospital has been \$318 000. The

NNSA official said that facilities contribute to the cost of installation “where possible. Otherwise, upgrades are supported by NNSA.” In all cases, the facility management must commit to operate and maintain the upgrades once the warranty period runs out, the official added. The NNSA estimates it will cost participating hospitals around \$10 000 annually to do so. Some hospital administrators have declined to participate in the NNSA program and say that

their security measures are adequate.

A major component of the NNSA program is the installation of in-device security kits on blood and research irradiators and radiosurgery devices called gamma knives. The kits will significantly increase the amount of time it would take intruders to remove the radiological material from hospital equipment and will give law enforcement additional time to apprehend the perpetrators.

David Kramer

news notes

Strength in numbers. The Trento Institute for Fundamental Physics and Applications (TIFPA) opened its virtual doors in January at the University of Trento, in northern Italy. Under the umbrella of Italy’s National Institute for Nuclear Physics (INFN), researchers at three existing local research structures will share equipment and develop joint projects. The physics and engineering departments at the University of Trento, the Trento Provincial Agency for Proton Therapy, and the Bruno Kessler Foundation (FBK)—a multidisciplinary applied research institute—make up the TIFPA team.

The virtual institute’s research palette is wide, from theoretical astrophysics to technology-driven research in sensors, space, supercomputing, and applications of nuclear methods in medicine. “There are several examples

that show the strength of the chain from fundamental research to technology development to technology transfer,” says physicist Roberto Battiston, who moved to the University of Trento for TIFPA and counts himself its first hire. He points to one such example: commercialization of a photon detector that came out of an earlier collaboration between the INFN and FBK.

During tight economic times TIFPA sends a positive message, says Battiston. In fostering collaborations, the virtual institute aims to draw together a “critical mass to improve research capabilities so as to be more internationally competitive in frontier research and applications of economic and social interest,” he says. Excluding permanent salaries, TIFPA’s annual operations budget is expected to be around €1 million (\$1.3 million). TF ■

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