

Questions from Sidney A. Hayakawa, Federal Security Director, Honolulu International Airport, in preparation for The Department of Transportation - Airports Division scheduled briefing, on Friday, November 18, 2005, of Pa`ina's plans for an Irradiator facility.

Question 1: With airports being a target area for terrorist activities, how can the NRC ensure the public and persons employed in and around the airport are protected from a targeted explosion.

Answer: The NRC regulates the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, to promote the common defense and security, and to protect the environment. The goal of NRC's regulatory program is to provide for the safe and secure use of nuclear materials in a manner that prevents radiation-related deaths and illnesses. Following the Terrorist attacks of September 11, 2001, the Commission has been conducting a review of its safeguards and security programs and requirements. As a result of its consideration of current safeguards and license requirements, as well as a review of information provided by the intelligence community, the Commission determined that licensees needed to implement certain security and control enhancements to supplement the current regulatory requirements to address the current threat environment. The radiation safety regulatory requirements, as well as the security and control enhancements implemented by licensees, are designed to prevent unintended radiation exposure and to prevent and mitigate deliberate malicious acts that have the potential to result in significant injuries from radiological exposure.

Also, the Aviation and Transportation Security Act of 2001 provides for additional protection against air attacks on all industrial facilities, both nuclear and non-nuclear. The NRC has been in regular communication with other federal agencies, such as the Federal Aviation Administration (FAA) and the Department of Defense (DOD) to enhance protection against airborne threats.

While the NRC regulates the safety and security of irradiator sites, other Federal agencies have regulatory jurisdiction for airport security to assure that public and persons employed in and around airports are protected from a targeted explosion from terrorist activities.

Question 2: What type of perimeter security would you have for the operation?

Answer: Currently there is a chain link fence surrounding the property, typical of standard industrial practice. The back fence abuts the airport runway and would have to meet airport security requirements. Whether the other portions of the fencing will be maintained, will be a decision for Pa`ina Hawaii, LLC. NRC will not license the facility unless the safety and security requirements are met. NRC does not have prescriptive "perimeter security" requirements for this type of facility. Rather, "perimeter security" is one aspect of the security program this applicant will address in response to the Order to implement compensatory measures (CMs). The CMs are designed to aid in the prevention and mitigation of adverse consequences. The type of "perimeter security" or the outer most

protective layer, needs to be consistent with the design of the physical protection system to monitor and immediately detect, assess, and respond to unauthorized access. Specific aspects of the Pa`ina Hawaii, LLC irradiator operation's physical protections system are sensitive unclassified information that is protected as Safeguard Information under Section 147 of the Atomic Energy Act or 1954 as amended.

Question 3: Will there be any type of security/alarm system(s) for the facility itself?

Answer: Yes, the application states that there will be a "security/alarm system" for the Pa`ina Hawaii, LLC irradiator facility. NRC regulations, for an underwater irradiator, §36.23(i), require an intrusion alarm to detect unauthorized entry when the personnel access barrier, around the pool, is locked and the irradiator is unattended. A security/alarm system is one aspect of any security program designed to aid in the prevention and mitigation of adverse consequences. The type of "security/alarm system," needs to be consistent with the design of the physical protection system to monitor and immediately detect, assess, and respond to unauthorized access. Specific aspects of the Pa`ina Hawaii, LLC irradiator operation's physical protection system are sensitive unclassified information that is protected as Safeguard Information under Section 147 of the Atomic Energy Act or 1954 as amended.

Question 4: Will there be any sort of access control for workers, visitors and the public?

Answer: Yes, as far as radiation safety is concerned, NRC regulations require access controls for workers, visitors, and the public to ensure that radiation doses to these groups are within the limits prescribed by regulation and are as low as reasonably achievable. These controls consist of specialized training, radiation monitoring, personnel monitoring (e.g., film badges), audit programs, access barriers, and other engineering controls that may reduce radiation doses.

In response to the terrorist attacks of September 11, 2001, the Commission, issued Orders, to large panoramic and underwater irradiator licensees, requiring them to implement compensatory measures for enhanced security. These compensatory measures include access controls for workers, visitors and the public. The access controls for workers include background checks by the employer. The specifics of the compensatory measures are protected as Safeguard Information under Section 147 of the Atomic Energy Act or 1954 as amended (68 FR 35460 or see: [www.nrc.gov/reading-rm/doc-collections/enforcement/security/](http://www.nrc.gov/reading-rm/doc-collections/enforcement/security/))

Section 652 of the recently enacted Energy Policy Act of 2005 expanded the scope of NRC's authority to conduct Federal fingerprinting and criminal history records checks. Since NRC is in the early stages of implementing the provisions of the Energy Policy Act, a determination has not yet been made whether underwater irradiator facilities will be required to have Federal fingerprinting and criminal history records checks.

Question 5: Can stored/spent Cobalt 60 be used to manufacture a "dirty bomb"?

Answer: A Radiological Dispersal Device (RDD), or “dirty bomb,” combines a conventional explosive, such as dynamite, with radioactive material, including Co-60. In most instances, the conventional explosive itself would have more immediate lethality than the radioactive material. At the levels created by most probable sources, not enough radiation would be present in a dirty bomb to kill people or cause severe illness.

The radiation safety regulatory requirements, as well as the security and control enhancements implemented by licensees in response to Orders, are designed to prevent unintended radiation exposure and to prevent and mitigate deliberate malicious acts, that have the potential to result in significant injuries from radiological exposure.

In the unlikely event that stored or spent radioactive material was taken from an irradiator facility, it could potentially be used to make an RDD. The NRC has evaluated the potential consequences from such an unlikely event and concluded that no significant injuries from radiological exposure would result. The NRC has also studied the land contamination that would result from exploding a Co-60 irradiator source-based RDD and determined that the area impacted would be limited. Further, because of the nature of the irradiator source, any area that was affected could be cleaned and decontaminated.

Question 6: Are there any type of controls to shut down the operation and secure the entire facility?

Answer: The type of irradiator that is planned is an underwater pool-type irradiator. The sealed sources for this type of irradiator remain in the water at all times during operations. The product to be irradiated is placed in a water-tight container and lowered into the water. Therefore, the sealed sources are always in an inherently safe position, as far as radiation safety is concerned, and there would be no need to have a control mechanism to automatically shut down operations. The security of the facility would be as discussed above.