Gamma Safe. Secure. Vital.

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GIPA
Gamma Industry Processing Alliance

SAFE AND SECURE GAMMA IRRADIATOR FACILITIES

GIPA FACT SHEET

INTRODUCTION

Gamma irradiator facilities use radioactive cobalt-60 sources for purposes such as sterilizing many different types of single-use medical products, including gloves, gowns, surgical drapes, and processing a vast array of consumer products, spices and foods for microbial reduction and pest control.

Approximately 160 gamma irradiation facilities are currently in operation in about 50 countries, containing approximately 240 million curies of cobalt-60. Over 50% of the installed base is in use in 18 States of the USA.

In fact approximately 80% of the installed industrial cobalt-60 base in North America is being used to gamma sterilize single-use medical devices amounting to over 200 million cubic feet per year.

COBALT-60 SECURITY CONCERNS

Following the terrorist attacks in the United States on September 11, 2001, gamma irradiator facilities were placed in a heightened alert for potential security breaches. In response to the attacks and intelligence information subsequently obtained, the United States Nuclear Regulatory Commission (NRC) issued a number of Safeguards and Threat Advisories to its licensees in order to strengthen Licensees' capabilities and readiness to respond to a potential attack on a nuclear facility. Specific Compensatory Measures for gamma irradiator facilities were issued in the summer of 2003.[i]

SECURITY PRECAUTIONS

During normal operations, gamma irradiator facilities operate a number of access controls and interlock systems designed to preclude inadvertent access to the irradiation chamber[ii]. These controls, as well as the high radiation dose rates from the cobalt-60 sources during operations, provide an excellent level of security against access to the sources. In the United States and elsewhere, these same systems have been enhanced and supplemented to detect unauthorized intrusions with notification to the pertinent authorities.

In addition, actions taken since 2001 in conjunction with the NRC have established a "life-cycle" series of security enhancements that include, from the NRC, verification of the legitimacy of applicants for licenses to use radioactive material; controls on access to radioactive sources to prevent diversion by an insider; tracking and inventory mechanisms for high-risk sources to ensure they haven't been lost or stolen; export and import controls on high-risk sources; and more frequent inspections to verify the adequacy of regulatory controls and measures to ensure safe disposal. Gamma irradiator facilities have implemented enhancements that include establishing one or more physical security perimeters around the radioactive material, establishing controlled access and monitoring through the perimeter layers, verifying that Authorized Users are trustworthy and reliable, and protecting critical information regarding the facility security plan and detection systems.

The NRC and gamma irradiator facility licensees have also expanded involvement with law enforcement agencies, the Department of Homeland Security, and other involved agencies. Heightened awareness through these agencies serves to increase the level of security at gamma irradiator facilities.

Most of the specific physical security enhancements at gamma irradiator facilities fall under the provisions of Safeguards Information - Modified Handling as discussed in the June 2003 Federal Register Notice. As such, detailed information on these items cannot be disclosed to the general public.

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or visit www.gipalliance.net for other GIPA fact sheets

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[i] "In the Matter of All Panoramic and Underwater Irradiators Authorized to Possess Greater than 370 TerraBecquerels (10,000 Curies) of Byproduct Material in the Form of Sealed Sources; Order Imposing Compensatory Measures (Effective Immediately)," Federal Register, Vol. 68, No. 114, Friday, June 13, 2003

[ii] "Safe Design and Use of Panoramic, Wet Source Storage Gamma Irradiators (Category IV) and Dry Source Storage Gamma Irradiators (Category II)," ANSI/HPS N43.10-2001, American National Standards Institute, Inc., January 2001