



UNITED STATES  
**NUCLEAR REGULATORY COMMISSION**  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

September 5, 2003

Lynn R. and Brenda McCardle  
Jack and Linda Sutton  
Michael and Gail Thomas  
1745 Klines Mill Road  
Quakertown, PA 18591

SUBJECT: COBALT 60 IRRADIATOR

Dear Ladies and Gentlemen:

I am responding on behalf of the Nuclear Regulatory Commission (NRC) to your July 29, 2003 letter regarding the CFC Logistics, Inc. cobalt-60 irradiator in Milford Township, Bucks County, Pennsylvania. You expressed concerns on behalf of the Milford Township residents about the safety and security of the underwater irradiator. In particular, you requested that NRC address security and emergency planning needs and ensure that drop tests and seismic and hydrological reviews are conducted for the irradiator facility.

Our Region I staff in King of Prussia, Pennsylvania, received the license application for the irradiator in February 2003. The application has been reviewed against the NRC regulations in 10 CFR Part 36, "Licenses and Radiation Safety Requirements for Irradiators," as well as the guidance contained in NUREG-1556, Volume 6, "Program-Specific Guidance About Licensing Part 36 Irradiators." The regulations in Part 36 were developed in the early 1990's and established specific design, construction and operational requirements for these kinds of facilities. These requirements, along with the Commission's standards for protection against radiation contained in 10 CFR Part 20, provide a substantial and well-defined basis for a licensing decision.

The NRC staff's licensing review of the CFC application was extensive. Our actions included technical reviews and numerous onsite inspections by health physics, electrical engineering and geotechnical engineering experts. An internal panel also performed a peer review that focused on unique engineering aspects of the irradiator's design. In short, we applied substantial staff and management resources to review this application to ensure that the health and safety standards contained in our regulations were met. Based on this review, we issued a materials license to CFC Logistics for the Quakertown irradiator facility on August 27, 2003.

While some aspects of this facility are novel, the concept of an underwater irradiator where the product to be irradiated is placed in containers and lowered into the water to a position near the sources has been used at a number of facilities for many years. The design of the CFC irradiator has some inherent safety features which reduce the risk of radiation exposure during operations. For example, the sources remain in a fixed position inside a closed plenum which is air- and water-tight. To protect groundwater and keep the cobalt-60 from entering the environment, operation and design of the facility involves multiple containment barriers and control features. These include measures such as double encapsulation of the sources and constant monitoring for radioactive contamination in the air around the sources and in the pool water. The physical form of the cobalt itself and the robust pool structure also ensure that the

risk of release of radioactive material to the environment is extremely low. During our licensing reviews, we paid particular attention to the potential risks associated with the overhead trolley and hoist system which carries heavy loads over the pool. We looked at seismic risk to the facility and assured that the pool structure was robust such that, if a heavy load was dropped, it would not damage the sources or result in loss of water for shielding.

With respect to physical security requirements, in June 2003, the NRC staff issued Orders requiring certain compensatory measures to enhance security at irradiator facilities to address the current threat environment. The NRC staff ensured that CFC Logistics, as part of the irradiator community, was kept informed of the compensatory measures under consideration. Consequently, CFC Logistics has already incorporated many of the applicable security enhancements into the design of and operational procedures for the Quakertown facility. After the license was issued, the NRC staff issued an Order to CFC Logistics imposing the same compensatory measures required for other irradiator facilities. That Order requires, among other things, the use of background checks as part of the security measures to protect against malevolent use of the radioactive material.

You also expressed concern about the capability of State and local authorities to respond to emergencies at the irradiator facility. As part of our licensing reviews, we confirmed that CFC has procedures in place to respond to emergencies and that CFC has provided training to local responders. Further, county, State and national organizations are prepared to support local responders in dealing with escalating threats and emergencies. In addition, we continue to work closely with the Department of Homeland Security, the Federal Bureau of Investigation, State and local authorities, and other intelligence and law enforcement agencies in efforts to improve emergency planning and preparedness for NRC licensed facilities.

As you know, in response to concerns about the irradiator, the Milford Township Board of Supervisors held an informational meeting at the Quakertown High School on July 16, 2003 at which Region I management made presentations and answered questions about our licensing review. On August 21, 2003, the NRC staff held a public meeting at the same location to provide the public with an update on the licensing review and to describe how NRC took into account public concerns in that review. During both meetings, NRC managers responded to numerous concerns raised by members of the public; concerns similar to those in your letter. We have carefully considered the issues and concerns raised at these meetings and in your letter and believe they have been addressed in our review of the license application.

Counsel for the Concerned Citizens of Milford Township requested a hearing on this application. In accordance with NRC's procedures regarding the conduct of adjudicatory proceedings for this type of facility, contained in 10 CFR Part 2, Subpart L, the Chairman of the Atomic Safety Licensing Board Panel has appointed a Presiding Officer to determine whether that request should be granted. The Presiding Officer is currently considering the issues raised by the citizens and oral arguments are scheduled for September 10, 2003.

NRC plans to closely oversee the CFC facility through initial stages of testing and subsequent operation consistent with our regulatory program. We have required the licensee to inform us in advance of receiving cobalt 60 sources so that we can inspect the loading and testing of the irradiator and review the results of radiation surveys at the facility prior to operating the irradiator. If our inspection program identifies violations of our requirements, we will take appropriate action under our Enforcement Policy, issuing sanctions if necessary.

I appreciate the opportunity to respond to your concerns and hope this information is helpful. Please feel free to contact me if you have additional questions regarding this matter.

Sincerely,

***Original signed by Hubert J. Miller***

Hubert J. Miller  
Regional Administrator

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