

**From:** Roberto Torres  
**To:** Steve.Wong@faa.gov  
**Date:** Thu, Sep 8, 2005 2:39 PM  
**Subject:** Re: Message from U.S. Nuclear Regulatory Commission

Mr. Wong:

I've read your six questions. Below are the action items and answers to some of your questions.

Q.1. Applicant needs to file FAA Form 7460-1 for an aeronautical review.  
Action: Forward request to Pa'ina.

Q.2. Does the facility emit radio, microwave frequencies? Not from the radioactive material, Cobalt-60.  
Action: Forward request to Pa'ina in case they have any other devices (example: communication equipment) that might emit radio/microwave frequencies that could interfere with air traffic control.

Q.3. What are the emergency procedures for nuclear contamination?

Answer: The applicant will be required to have emergency procedures for a variety of contingencies including, leaking sources (i.e. contamination), and low water or leakage from the storage pool before becoming fully operational. The individual sources, the storage arrangement, and the pool will have to be designed and constructed to minimize the likelihood and consequences of these emergencies.

There will be multiple systems at this facility to prevent contamination of the pool water and leakage of the pool liner. These include the two stainless steel capsules which surround each of the sources, the stainless steel housing which contains the source holders and the multiple barriers of the walls of the irradiator pool. In addition, the licensee will have continuous monitoring systems in place to detect radioactivity in the pool water and to detect loss of water from the pool.

Q.4. What are the percentages for nuclear incidents [involving irradiators]?

Answer: Over the past 30 years, there have been a few major accidents at industrial irradiation facilities, located outside the United States, that caused injury or death to workers because of accidental exposure to a lethal dose of radiation. All of the accidents happened because safety systems had been deliberately bypassed by the operator and proper control procedures had not been followed. None of these accidents endangered public health and environmental safety. In most cases, reports of "accidents" have actually turned out to be operational incidents. Such incidents have caused the irradiator to be shut down but they did not harm anyone or pose a risk to the environment.

The radiation processing industry is considered to have a very good safety record. Today there are about 170 industrial gamma irradiation facilities operating worldwide, a number of which process food in addition to other types of products. Facilities are constructed to standard designs with multiple safeguards to protect worker health and safeguard the community should a natural disaster such as an earthquake or tornado occur. [Source: International Atomic Energy Agency]

Generally speaking, the design of Pa'ina's facility does not involve the constant movement of the radioactive sources. Therefore, the likelihood of accidents involving exposure of workers to lethal doses of radiation is expected to be less than in facilities with a different design than the one proposed in this license application.

Q.5. Effects from hurricanes, flooding, earthquakes?

Answer: As part of the license application review process NRC inspectors will conduct an evaluation of the applicant's engineering analysis of different potential scenarios, including structural stability of the facility during an earthquake, and the consequence of potential loss of all the water in the pool.

## Q.6. Security procedures (TSA, HAZMAT, terrorist potential)?

Answer: As a result of the September 11, 2001, events NRC embarked on an extensive review of its security program and has taken a number of steps to enhance security at licensed facilities. These have included Threat Advisories which called on licensees to take certain prudent steps to enhance their security posture as well as Orders imposing requirements on certain classes of licensees. The NRC has also developed additional security measures which irradiator facilities will be required to implement. These measures are designed to either discourage terrorist attacks or minimize the potential for damage from such an attack. This facility will be designed with many of those measures in mind. The measures will be developed taking into consideration the threats as we know them and the potential vulnerabilities of these facilities. NRC will issue an Order to Pa'ina that will impose those additional security measures on the facility, after the license is issued. In addition, the NRC requires criminal background checks for irradiator operators. This requirement was imposed by an NRC Order issued in 2003. There are also additional security measures required for transportation of the sources.

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>>> <Steve.Wong@faa.gov> 09/08/05 2:11 PM >>>

Aloha Mr. Torres,

I enjoyed attending the public meeting for the irradiator on Aug. 30, 2005.  
I had left several questions on the questionnaire and look forward to hearing from your office.

Thanks,

Steve Wong  
HNL-623  
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"Roberto Torres"  
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09/07/2005 05:14  
AM

To  
"Roberto Torres" <[RJT@nrc.gov](mailto:RJT@nrc.gov)>  
cc

Subject  
Message from U.S. Nuclear  
Regulatory Commission

Your email address has been added to NRC's mailing list to keep you informed of Pa'ina's license application process for the possession of radioactive material for use in an irradiator.

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