



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555  
FEBRUARY 23, 1988

TO ALL NON-POWER REACTOR LICENSEES

Gentlemen:

SUBJECT: DISTRIBUTION OF GEMS IRRADIATED IN RESEARCH REACTORS (GENERIC LETTER 88-04; SEE ALSO GENERIC LETTER 86-11, DATED JUNE 25, 1986)

On June 25, 1986, we notified you that research reactor licensees might be irradiating and distributing products containing induced radioactivity to unlicensed persons in violation of NRC regulations. We noted that 10 CFR Section 30.14 prohibits introduction of byproduct material into a product for distribution to an unlicensed person, unless the distributor has a specific license issued pursuant to 10 CFR Section 32.11 which permits such distribution. We also noted that due to a long-standing policy against radioactive toys, novelties, and adornments, the staff has not granted licenses for distribution of irradiated gems or similar materials.

Throughout 1986 and 1987, we have received numerous inquiries from licensees and others, requesting that NRC take a definitive position with respect to neutron-irradiated gems such as topaz. These persons reported that large quantities of irradiated topaz are on the United States retail market from both foreign and domestic sources. They requested that, in the interest of fairness and consistency, as well as protection of the public health, NRC expeditiously resolve the issue.

Applications will now be considered for interim licenses authorizing the distribution of neutron-irradiated gems, particularly topaz, to unlicensed persons pursuant to 10 CFR Section 32.11. The NRC will also develop a policy which recognizes the existence of radiation doses and risks which are too low to justify regulation to protect public health and safety. Based on this policy, specific regulations will be developed for classes of radioactive materials such as irradiated gems. The interim licenses, if granted, will not be subject to the prohibition against distribution of products intended for application to a human being. However, license applications must meet the other requirements of 10 CFR Sections 32.11, 30.14, and 30.70. The radioactivity concentration limit for any single radionuclide is given in Schedule A of 10 CFR Section 30.70. The limit applicable for multiple radionuclides may be calculated using the method specified in Note 2 of 10 CFR Section 30.70.

The interim licenses will authorize distribution of cut, finished gems only, because the potential for occupational radiation exposures associated with cutting and grinding gems is much higher than for normal consumer use. License applications must describe the proposed methods for identification and measurements of the radionuclides in the gems, and the quality control procedures for assuring that all gems released to the public are below the limits specified in 10 CFR Section 30.70.

8802250195

ZA

IDTR-5  
INFO LTR

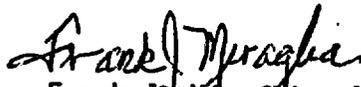
The NRC staff is aware that neutron-irradiated topaz has been imported into the United States which contains radioactivity above the limits specified in 10 CFR Sections 30.14 and 30.70. Accordingly, consistent with the requirements of 10 CFR Section 32.11, the staff plans to control distribution of irradiated gems at the source and, thus, envisions two principal groups of applicants for distribution licenses, i.e., domestic reactors and initial importers. Both groups will be subject to similar regulatory requirements.

Those reactor licensees who are currently distributing, or intend to distribute irradiated gemstones to unlicensed persons must obtain a license which specifically authorizes this activity. Applications for distribution licenses should be submitted with proper fee (see 10 CFR Part 170) to:

U.S. Nuclear Regulatory Commission  
Division of Industrial and Medical Nuclear Safety  
Washington, DC 20555

Persons (such as secondary distributors and individual consumers) who receive gems from an NRC-licensed distributor do not need a license. Only the initial distributor in the United States must be licensed pursuant to 10 CFR Section 32.11.

This letter is for information only and does not require a response. Those persons who are currently irradiating and/or distributing irradiated gemstones should immediately contact the NRC Division of Industrial and Medical Nuclear Safety to discuss current and planned activities so that a determination can be made on the course of action that should be taken. Questions concerning NRC distribution licenses may be directed to Michael Lamastra (301-492-0639). Questions concerning non-power reactor licenses may be directed to Lester Rubenstein (301-492-1118). Questions concerning license fees may be directed to Glenda Jackson (301-492-8740).



Frank J. Miraglia, Associate Director  
for Projects  
Office of Nuclear Reactor Regulation



Richard E. Cunningham, Director  
Division of Industrial and  
Medical Nuclear Safety  
Office of Nuclear Material  
Safety and Safeguards

Multiple Addresses

The NRC staff is aware that neutron-irradiated topaz has been imported into the United States which contains radioactivity above the limits specified in 10 CFR Sections 30.14 and 30.70. Accordingly, consistent with the requirements of 10 CFR Section 32.11, the staff plans to control distribution of irradiated gems at the source and, thus, envisions two principal groups of applicants for distribution licenses, i.e., domestic reactors and initial importers. Both groups will be subject to similar regulatory requirements.

Those reactor licensees who are currently distributing, or intend to distribute irradiated gemstones to unlicensed persons must obtain a license which specifically authorizes this activity. Applications for distribution licenses should be submitted with proper fee (see 10 CFR Part 170) to:

U.S. Nuclear Regulatory Commission  
Division of Industrial and Medical Nuclear Safety  
Washington, DC 20555

Persons (such as secondary distributors and individual consumers) who receive gems from an NRC-licensed distributor do not need a license. Only the initial distributor in the United States must be licensed pursuant to 10 CFR Section 32.11.

This letter is for information only and does not require a response. Those persons who are currently irradiating and/or distributing irradiated gemstones should immediately contact the NRC Division of Industrial and Medical Nuclear Safety to discuss current and planned activities so that a determination can be made on the course of action that should be taken. Questions concerning NRC distribution licenses may be directed to Michael Lamastra (301-492-0639). Questions concerning non-power reactor licenses may be directed to Lester Rubenstein (301-492-1118). Questions concerning license fees may be directed to Glenda Jackson (301-492-8740).

Original signed by  
Frank J. Miraglia

Frank J. Miraglia, Associate Director  
for Projects  
Office of Nuclear Reactor Regulation

Original Signed by  
Richard E. Cunningham  
Richard E. Cunningham, Director  
Division of Industrial and  
Medical Nuclear Safety  
Office of Nuclear Material  
Safety and Safeguards

8802250195

DISTRIBUTION:

Central File  
HSmith (original & 15)  
PDR

AAdams  
LRubenstein  
MLastra

DCrutchfield  
CThomas  
GJackson

FMiraglia  
RCunningham

PDSNP  
AAdams:cw  
02/18/88

PDSNP  
LRubenstein  
02/18/88

DRSP  
DCrutchfield  
02/19/88

C:PTS:PMAS-NRR  
CThomas  
02/18/88

FMiraglia  
02/27/88

DCMAC  
RCunningham  
02/23/88

HS/BD 2/18/88