



REPLY TO
THE ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY RESEARCH LABORATORY
2800 POWDER MILL ROAD
ADELPHI, MARYLAND 20783-1145



May 6, 1994

Risk Management
Division

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Dear Director,

This letter is being submitted as a "Reply to a Notice of Violation" dated April 18, 1994, issued following Routine Inspection Number 030-12840/94-001.

As indicated in the enclosure, we are respectfully contesting the issuance of each violation for the reasons detailed. It is our belief that given the following, and under the circumstances described in the enclosure, your office should reconsider the issuance of the violations: the new and sometimes unclear nature of the new Part 36 rule; our past efforts to obtain and implement verbal interpretations of the new rule from the authors; the somewhat limited time between the announcement of the final rule and the effective date; the highly unlikely probability of obtaining and implementing written interpretations by the effective date; our excellent record of compliance in the past; the numerous engineering and procedure modifications that were required and accomplished in the relatively short period provided between final rule announcement and effective date, and; our submission on September 9, 1993, of a license amendment describing engineering and procedural modifications that were made to meet the new 10CFR36, including the three areas currently of concern.

Awaiting your final determination, we have made the modifications described in the enclosure. Even in areas subject to interpretation or extenuating circumstances, we wish to comply fully with the intent and your interpretation of your regulations awaiting final resolution.

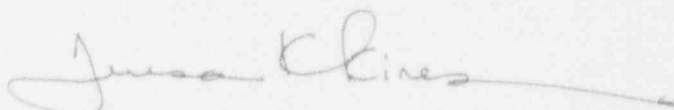
Maintaining our clean record at this Installation is crucial to our relationship with the surrounding community. Given our excellent record and diligent efforts in complying with the new rules, we are hopeful that the final determination does not include violations.

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Your consideration in this matter is greatly appreciated. If you have any further questions please feel free to contact me at (301) 394-1003, or Mr. Michael Borisky, my Radiation Protection Officer, at (301) 394-2218.

Sincerely,



Teresa K Kines
Director
Site Operations

Enclosure

Copies Furnished:

Regional Administrator
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406-1415

U.S. Army Materiel Command Safety Office (Mr. John Manfre)

ENCLOSURE

A. Back-up Access Control and Alarm

(1) Reason for contesting apparent violation. During implementation of the new regulations, there was an apparent conflict between 36.23(b), and 36.65(b), as to whether it is required to have a second individual present during our panoramic irradiations (static). 36.23(b) appeared as a generic requirement, qualified further with respect to attendance during operation by 36.65(b) **("The alarm must also alert at least one other individual who is onsite of the entry. The individual shall be trained on how to respond to the alarm and prepared to promptly summon assistance" versus "at a panoramic irradiator at which static irradiations are occurring, "a" person who has received the training on how to respond to the alarms described in 36.51(g) must be on-site")**. NRC HQ was therefore contacted for a verbal interpretation on 6 Apr 93. As a static irradiation facility, the interpretation we received was that we were not subject to 36.65(a), which requires a second person. This interpretation was also consistent with 36.65 of the Federal Register preamble, which would require a second person on-site only when product movement is involved **("The final rule requires another person onsite in addition to the operator for responding to alarms at a panoramic irradiator when product movement is involved")**. The presence of the in-air operator, trained on how to respond to alarms described in 36.51(g), would therefore satisfy the applicable requirements of 36.65(b). Furthermore, the location of the visual and audible alarm in the entrance maze would be appropriate because this is where the operator would be present if he set off the alarm. Because this interpretation was counter to the last sentence in paragraph 9.2 of the 13 May 93 DRAFT Regulatory Guide, which would have prevented panoramic operations without a second person present to render assistance, HQ NRC was again contacted for interpretation of this DRAFT guidance **("This provision prevents the operation of the panoramic irradiator without a second person being available to render or summon assistance")**. We were advised to follow the interpretation provided on 6 Apr 93, and further advised that the subject sentence in the 13 May 93 DRAFT would be removed from future Regulatory Guides. The sentence was in fact removed by the NRC and does not appear in the Jan 94 DRAFT version of the Reg Guide.

(2) Although the violation is being contested, we have taken steps awaiting final review and determination by the NRC. On 4 Apr 94, panoramic operations without the presence of another individual trained on responding to the back-up alarm were suspended. All panoramic operations are now only conducted with at least 2 trained individuals present. Furthermore, on or before 18 May 94, a second visual and audible alarm activated by the back-up system will be installed in the control room to warn

the trained individual present in the control room of any activation of the back-up access system. If favorable review of this response by the NRC is gained, solitary panoramic operations will resume for the reasons stated in this response and the 6 Sept 93 license amendment submission.

(3) To avoid any further apparent violations, an entry has been added to the panoramic operations checklist to ensure that a second back-up alarm trained individual is present for panoramic operations. These records will be reviewed by the RPO periodically. Upon favorable review of this response by the NRC, this requirement may be removed.

(4) Full remediation of the apparent violation was achieved on 4 Apr 94, and audible and visual back-up alarms will also be installed in the control room by 18 May 94.

B. Radiation Monitor in Exposure Room

(1) Reason for apparent violation. Our facility operates as both a panoramic and underwater irradiator. As such, it appeared to be subject to 36.23(c) requiring a monitor for panoramic operations, and from section 36.29 in the Federal Register preamble, a monitor over the pool during underwater storage ("A radiation monitor must be provided to detect the presence of high radiation levels in the radiation room of a panoramic irradiator before personnel entry. The monitor may be located in the entrance but not in the direct radiation beam", and "This section also requires a monitor over the pool at underwater irradiators"). This appeared as a conflict, and we therefore contacted NRC HQ for a verbal interpretation on 17 Mar 93. We were advised that the concern for direct beam exposure was for facilities where a product conveyor might accidentally carry a source out of the exposure room, the source not being detected upon exit if the monitor is in the direct beam. We were therefore advised that the direct beam concern did not apply to our facility. We have since been informed by the NRC inspector, that NRC HQ concern for direct beam exposure is for detector saturation and degradation.

In the past, we have found that direct beam exposure to the electronics of the poolside monitor resulted in a lengthy return to meter background once the sources were returned to the shielded position. For this reason, the monitor probe electronics have been for many years, and was on the day of the inspection, equipped with a heavy lead shield to protect the probe from direct radiation. The only portion exposed to the direct beam was the detector crystal. We had found from experience that it was exposure to the probe electronics (photomultiplier tube) that created the problem, not exposure to the detector crystal, and therefore provided shielding for the probe electronics. We have also found from experience that

because of the relatively low activity used in air at our facility, and relatively small amount of cumulative time the sources are used in air, radiation damage to meter cabling has not been a problem. Those portions of the monitor found to be sensitive to direct radiation exposure have therefore not been exposed to the direct radiation beam for many years, including on the day of the inspection.

(2) Although the violation is being contested, we have taken steps awaiting final review by the NRC. The probe has been raised in the lead shield to ensure that the crystal is also shielded from direct radiation. This has been interpreted by the NRC inspector as acceptable. In this way, the probe can remain next to the pool where it can provide maximum protection for in-pool operations. This modification has had no significant effect on detector function, since the sensitive portions were already shielded from the direct beam.

(3) The design of the lead shield has been modified to prevent direct beam exposure of the monitor.

(4) The design of the lead shield was modified on or about 5 Apr 94.

C. Source Position Indicator

(1) Reason for apparent violation. The Notice of Violation is apparently based upon the assertion that there is no indicator "on" the "console". 36.31(b) simply states that the console must have a source position indicator, without specifying that the indicator must be "on" the console, and without formally defining what constitutes a "console" ("**The console of a panoramic irradiator must have a source position indicator that indicates when the sources are in the fully shielded position, when they are in transit, and when the sources are exposed**").

As described in the Notice of Violation, as well as the license amendment submitted 9 Sept 93, our facility was at the time of inspection equipped with indicators of source position that we believe meet the intent of the rule. The mandatory video system that monitors source position, and the "Source Off Pool Bottom" light are both integral components of the two component console system. The "Source Off Pool Bottom" light indicates when the sources are fully shielded, and the video monitor indicates when the sources are in transit and exposed. The source elevator counterweight, which was purposely located on the wall behind and near the console so that the operator at the console faces it during elevator operations, also indicates when the source is fully shielded, in transit, and exposed. This counterweight could certainly be considered to be "at" the console, or a part of the console station.

(2) Although the apparent violation is being contested, we have taken steps awaiting final review and determination by the NRC. Three lights are being installed into one of the two console components, that will indicate when the sources are fully shielded, in transit, and exposed. The lights will be activated by the movement of the elevator counterweight, which is connected directly by aircraft cable and a pulley to the bottom of the source elevator. The installation is ongoing, and will be completed by 18 May 94. Upon favorable review of this response by the NRC, the three light system may be removed.

(3) In the event the NRC requires the three-light system, it will be subject to periodic testing, as required by 10CFR36, to ensure proper function.

(4) Full compliance with the apparent violation will be achieved on or before 18 May 94.