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RECORD #242

TITLE: Health Physics Position on Posting of High Radiation Areas

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

August 8, 1991

MEMORANDUM FOR: James H. Joyner, Chief, EPRPB, DRSS, Region I
Douglas M. Collins, Chief, EPRPB, DRSS, Region II
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Gregory P. Yuhas, Chief, EPRPB, DRSS, Region V
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FROM: LeMoine J. Cunningham, Chief
Radiation Protection Branch
Division of Radiation Protection
and Emergency Preparedness
Office of Nuclear Reactor Regulation

SUBJECT: HEALTH PHYSICS POSITION

Enclosed, for your information, is the Radiation Protection Branch position on a specific question concerning the posting of high radiation areas.

This position has been coordinated with all NRC Regional offices and NMSS. The Office of the General Counsel has no legal objections.

This memorandum and the enclosed position are being placed in the NRC Public Document Room; therefore, copies can be provided to licensees.

A handwritten signature in cursive script, reading "LeMoine J. Cunningham".

LeMoine J. Cunningham, Chief
Radiation Protection Branch
Division of Radiation Protection
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Office of Nuclear Reactor Regulation

Enclosure:
As stated

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General Topic: Posting of high radiation areas.

Specific Question: An area containing fields that would require classification as a locked high radiation area is completely enclosed in an inaccessible barrier. The barrier is not posted. Is this acceptable practice?

Discussion: A licensee in Region V enclosed an area containing radiation sources in a wire cage that extended from the floor to the ceiling with no gate or access point. The sources of radiation were some valves and associated piping that produced a radiation field of up to 1.5 R/hr at 18" from their surfaces. Such fields would require that the area be controlled as a locked high radiation area. However, instead of locking the whole area, which was a room, the licensee constructed a wire cage around the source. The cage was of such a size that the radiation fields outside the cage were consistent with the postings for the room. No postings were attached to the cage. Such a cage is sometimes referred to as a cocoon.

According to 10 CFR Part 20, Paragraph 20.203(c), "Each high radiation area shall be conspicuously posted with a sign or signs bearing the radiation caution symbol..." The requirement does not indicate whether the posting is designed only for access control purposes, or also to identify the area itself, regardless of immediate intent to enter it.

Paragraph 20.202(b)(3) defines high radiation area as "any area, accessible to personnel, in which there exists radiation..." Therefore, an area that is not accessible would not be classified by staff as a high radiation area requiring posting. Since the cocoon is constructed to be inaccessible, the staff practice has been that it need not be posted. However, the cocoon may be made accessible by breaking the barrier, such as, for example, by cutting a hole in the wire cage. Once opened and "accessible", the area becomes a high radiation area requiring posting.

Although staff practice has been that posting the cocoon does not involve the posting requirements of Paragraph 20.203(c), identification of hazardous areas, such as putting up a sign saying "Contact Health Physics Before Entry," is good safety practice. Records that identify the nature of the hazard in the cocoon may be lost or may not be readily available to persons who may have to enter the area, especially in an emergency. Although a cocoon does not have an access point such as a door, a major leak, fire, or similar contingency may make it necessary to break the cocoon and enter. The absence of postings in such situations could present a hazard to personnel making the entry. In addition, once the cocoon has been broken and the area has been made accessible, the licensee would be in violation unless proper postings had been made before opening the cocoon. Regardless of the policy adopted for areas enclosed in a cocoon, that policy must be included in the radiation worker training material. This is necessary to satisfy the requirement of 10 CFR 19.12, "Instructions to Workers."