

YANKEE ATOMIC ELECTRIC COMPANY



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June 10, 1994
BYR 94-035

Director, Office of Enforcement
United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

References: (a) License No. DPR-3 (Docket No. 50-29);
(b) Letter, USNRC to YAEC, dated May 13, 1994

Subject: Reply to Inspection Report No. 50-29/94-04

Dear Sir:

The following information responds to a concern identified in Reference (b), Inspection Report No. 50-29/94-04. This information describes the conditions which led to the concern and the actions taken to address the conditions.

During the inspection of April 19 - 22, 1994, the inspector concluded that while Yankee Nuclear Power Station (YNPS) continues to implement an overall effective ALARA program, a lack of documentation for ALARA initiatives and reviews constituted a weakness in the radiological controls program.

At YNPS, pre-job ALARA planning and mid-course plan modifications are based on sound radiation protection principles and, based on the results achieved, the ALARA program is very effective. However, we concur that documentation of ALARA planning, particularly that of mid-course plan adjustments should be more comprehensive.

The specific circumstances upon which this finding was based involved the addition of shielding to the work platform (bridge) above the Shield Tank Cavity (STC) during a particularly long task; one which began in September, 1993, and has only recently been concluded. A detailed review of ALARA decisions with respect to addition of this shielding concluded that the requirements of 10 CFR 20.1101.b were properly supported. 10 CFR 20.1101.b requires that each licensee shall use, to the extent practicable, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonably achievable (ALARA).

Our assessment is based on the following considerations:

- Early in the project, elevated dose rates were anticipated during the lifting of the lower core support barrel. Shielding was applied at that time to the STC bridge, and constituted an appropriate exposure reduction effort.

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- Following completion of this lift, previous radiological conditions were restored and the decision was made to remove the shielding. This decision was based on input from all involved groups and can be summarized as follows;
 - Presence of the shielding created production inefficiencies due to physical interference for the workers (time vs shielding).
 - Presence of the shielding represented a potential tripping hazard (safety concern) due to the uneven surface under foot.

These concerns were determined, on a qualitative basis, to outweigh the potential exposure savings.

- However, higher than anticipated dose rates were encountered when core baffle cuts began. Work was stopped immediately and conditions were reassessed. Among the many actions implemented, including increased demineralization, filtration, and use of low dose areas, it was considered appropriate to again shield the STC bridge. At this point, exposure from the direct dose clearly outweighed the time factors and potential tripping hazard associated with workers contending with an uneven walking surface.
- The postulated dose savings of 0.5 to 1.0 rem that may have been realized through STC bridge shielding between January and March, 1994 represents approximately 1 to 3% of the total project dose. A similar savings was instead achieved by the reduced time and increased safety afforded by not padding the deck plates with shielding materials. Although not possible to exactly quantify, exposure savings through increased work efficiency alone could balance the 1.0 rem that shielding may have saved.

Evaluation of the overall ALARA controls in place over the course of the project clearly shows a proper balance of exposure reduction and production efficiency. The actions taken over the course of the project were appropriate and effective in maintaining exposure ALARA while ensuring production and safe work standards.

The specific decisions made with respect to STC bridge shielding meet the requirement and intent of 10 CFR 20.1101.b. However, these decisions and other mid-course ALARA plan modifications could have been better documented.

Senior management at YNPS encourages ALARA personnel, indeed all plant supervisors, to maximize their time in the field. Having worked out the pre-job planning with all the disciplines involved, ALARA personnel tend to work at the job site where they can identify and act upon meaningful improvements in the actual work activities.

Consequently, documentation of program adjustments has not been particularly emphasized. While the practice of focusing closely on the job in progress regularly achieves real dose reductions, it leaves open the potential for

missing opportunities on the larger scale. Documentation of evaluations and decisions may ensure that all available options have been considered, both in real time and in retrospect for future ALARA planning.

In conclusion, the management philosophy which encourages ALARA personnel to be actively involved in the implementation phases of each project is sound. It is important that we do not adversely impact this very effective program in the course of trying to improve it. Accordingly, the following actions have been completed and are tailored to be simple and practical, to retain the concept of involving all participants in the ALARA process, and to minimize the impact of additional time spent on documentation during work activities.

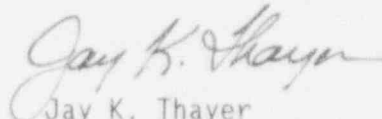
ALARA procedure OP-8020, "Implementation and Documentation of ALARA Reviews" has been revised to:

- a. require responsible personnel to document all mid-course modifications to the ALARA controls imposed either on-the-job or in daily planning meetings,
- b. for jobs which span more than a week of work, require periodic updates to the ALARA documentation package to reflect the collective mid-course adjustments and a supervisory review of the overall objectives, and
- c. for jobs which span more than a week of work, require periodic internal audits of the effectiveness of the ALARA controls.

If you have any questions or desire additional information, please contact us.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY



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- c: Regional Administrator, USNRC, Region 1
NRC Resident Inspector, VYNPS