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SUBJECT: Responds to NRC 891027 ltr re violations noted in Insp Rept 50-263/89-28.Corrective actions:changes made to procedures.

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November 22, 1989

Mr. C. E. Norelius, Director
Division of Radiation Safety and Safeguards
U S Nuclear Regulatory Commission Region III
799 Roosevelt Road
Glen Ellyn, Il 60137

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

Response to Notice of Violation
Radiation Overexposure
Inspection Report No. 50-263/89028

In response to your letter of October 27, 1989, which transmitted Inspection Report No. 50-263/89028, the following information is offered.

Violation

10 CFR 20.201 requires each licensee to make such surveys as (1) may be necessary for the licensee to comply with the regulations in Part 20, and (2) are reasonable under the circumstances to evaluate the extent of radiation hazards incident to the production, use, release, disposal, or presence of radioactive materials or other sources of radiation under a specific set of conditions.

Contrary to the above, on September 10, 1989, the licensee did not adequately evaluate the extent of the radiation hazard to a worker prior to his welding adjacent to a reactor water cleanup system pipe. This evaluation was necessary for the licensee to show that the dose rate from the pipe (7 R/hr on contact) would not result in doses to the worker in excess of the quarterly dose limits in 10 CFR 20.101.

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Explanation

We agree with the violation as stated and concur with the inadequacies described in the transmittal letter.

The radiological protection pre-job planning process for this welding job was not adequate. The process did not properly evaluate the welder's position when working on the reactor water cleanup pipe. Measures should have been established to: 1) directly observe the welder as he positioned himself to make the welds and 2) use multiple dosimetry with periodic checks by the radiation protection technicians.

The Radiation Work Permit for welding the reactor water cleanup pipe was inadequate because it did not instruct the welder to avoid contact with the highly radioactive portion of the pipe.

The radiation protection job coverage for welding the reactor water cleanup pipe was inadequate because the radiation protection technicians performing the coverage were not thoroughly briefed on the expected conditions and consequently were not fully equipped to recognize unexpected conditions. Additionally, the radiation protection technicians did not take sufficient self-initiated actions to observe and control the worker's position.

This violation identified a number of concerns with the radiation exposure control program. A variable affecting exposure control (welder position) and measures required to compensate for unanticipated changes in variables affecting exposure control were not identified during pre-job planning. Also, the radiation work permit did not establish requirements to ensure that parameters identified (assumptions made) in pre-job planning would remain valid. Finally, the radiation protection technician did not take necessary self-initiated compensatory actions. Corrective actions taken and planned address these concerns.

Corrective Actions Taken and Results Achieved

Immediately following the event, radiation protection technicians and supervisors were briefed regarding the apparent causes of the event and required remedial measures.

Changes to procedures have been made to improve pre-job planning, Radiation Work Permit preparation and job coverage. The specific changes are discussed below.

A. Radiation Protection Pre-Job Planning

Procedures were revised to ensure that all factors affecting exposure control are identified and quantified, and that preventive measures are established and backed up with measures to compensate for unanticipated changes.

Procedure R.2.1, Dose Rate Surveys, was revised to improve the quality and quantity of survey data which is collected for a given job site survey. Guidance was added to help ensure that the major radiation source, and any other significant sources in the work area, are identified on the survey. The term "dose rate gradient" was also introduced and defined.

Procedure R.13.1, Job Coverage, which had existed as a guide for the radiation protection technician assigned to cover a job, was revised to include a pre-job planning section which is completed by the Radiation Protection Coordinator. The Radiation Protection Coordinator specifies the monitoring scheme, and the type of job coverage (i.e., direct surveillance with visual contact, attendance at the job site but not necessarily in the exact work area, or job responsibility without being required to be at the job site).

Procedure R.1.1, Radiation Work Permit Preparation and Issuance, was revised to require the initiation of procedure R.13.1, Job Coverage, for jobs involving high dose rate gradients and all jobs requiring special dosimetry.

B. Radiation Work Permit Preparation

Procedure R.1.1, Radiation Work Permit Preparation and Issuance, was revised to assure that local radiological hot spots, which are critical to exposure control, are required to be listed in the radiation conditions section of the Radiation Work Permit. The procedure was also revised so that clear instructions regarding actions (with consideration for time at the job, positioning of workers on the job, and placement of shielding or barriers for protection of workers) that workers must take, or be aware of, to meet the exposure control requirements established in pre-job planning, are provided. Also, the threshold criteria for instituting special dosimetry (i.e., multiple or repositioned dosimetry) were lowered.

C. Radiation Protection Job Coverage

Radiological protection job coverage procedures were upgraded to ensure that a radiation protection technician providing coverage is thoroughly briefed on the expected conditions so that unexpected conditions can be recognized. The planning portion of procedure R.13.1, Job Coverage, ensures that written, as well as oral, instructions for covering the job are provided. The job performance section requires the radiation protection technician to be aware of any changes in job working conditions. It also requires the radiation protection technician providing coverage to use a written log to ensure that such changes are passed on to relief personnel for jobs lasting long enough to necessitate two or more groups of radiation protection technicians to cover the work.

Corrective Actions to be Taken to Avoid Further Violations

We believe that the corrective measures taken will prevent further violations. A comprehensive review of the radiation protection program has identified additional improvements which will strengthen radiological control at Monticello:

Job planning instructions will be enhanced by: 1) establishing guidelines for the use of mock-ups for the purpose of exposure control; 2) identifying critical exposure control parameters; 3) specifying preventive and back up measures; and 4) performing a second level review of the completed planning. This action will be completed by December 31, 1989.

Also by December 31, 1989, the procedure for doing pre-job briefings will be formalized. The standardized checklists will be improved and the use of visual aids (i.e., detailed floor plans and photo documentation system) will be increased.

An advanced general employee training course, which will focus on radiologically challenging jobs, will be developed by March 15, 1990. All NSP plant and construction supervisors will attend this course prior to the next refueling outage. The objective of the course is to upgrade the knowledge and skills that are needed to provide an extra barrier to unplanned exposures and to contribute more effectively to pre-job planning. A case study of this event will be included in the advanced general employee training course and continuing training for Radiation Protection Specialists. The Radiation Protection Specialist training program will emphasize the need for a healthy sense of skepticism and the need for inquisitiveness in order to be effective at providing job coverage.

In addition, management will conduct an in-depth self assessment of the Radiation Protection Program focusing on exposure control. This will be completed by September, 1990.

Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Please contact us if you have any questions relating to our response to this violation.

C. E. Larson
Vice President Nuclear Generation

c: Regional Administrator-III, NRC
NRR Project Manager, NRC
Resident Inspector, NRC
G. Charnoff