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July 22, 1991
JAFP-91-0426

U.S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, DC 20555

ATTENTION: DOCUMENT CONTROL DESK

SUBJECT: RESPONSE TO NOTICE OF VIOLATION - INSPECTION 91-12 (DOCKET 50-333)

REFERENCE: 1. USNRC Letter Dated June 21, 1991
Subject: Inspection Report 50-333/91-12

In accordance with the provisions of 10 CFR 2.201, the Authority is submitting our response to Appendix A Notice of Violation transmitted by your letter (Reference 1), dated June 21, 1991. This refers to the inspection conducted by Dr. Sami Sherbini June 3 through 6, 1991 at the James A. FitzPatrick Nuclear Power Plant. It should also be noted that the inspection report stated that the air sample results showed an activity of 9700 times MPC. That value is incorrect. The correct activity was 97 times MPC.

Very truly yours,

R. Converse

RADFORD J. CONVERSE
RESIDENT MANAGER

RJC/JAS/bas

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ENCLOSURE 1

NOTICE OF VIOLATION

As a result of the inspection conducted on June 3-6, 1991, and in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C) the following violation was identified:

10 CFR 20.201(b) requires, in part, that each licensee shall make or cause to be made such surveys as may be necessary and reasonable to ensure compliance with the requirements of 10 CFR Part 20. 10 CFR 20.201(a) defines survey, in part, as evaluation of the radiation hazards incident to the presence of radioactive materials under a specific set of conditions. When appropriate, such an evaluation includes a physical survey of material and equipment and measurements of levels of radiation present.

Contrary to the above, on May 23, 1991, six workers were allowed to work in the Torus Room and the Drywell Entrance area without adequate evaluation of the potential hazards from airborne radioactivity that was generated during conduct of their work, and without provision of adequate protective measures or engineering controls to mitigate the effects of the airborne radioactivity hazard.

This is a Severity Level IV violation (Supplement IV).

The Authority agrees with the violation.

Cause of the Violation:

The cause of this violation was inadequate job planning and implementation of existing procedures and programs. Engineering controls to maintain concentrations of radioactive material in air as low as reasonably achievable (ALARA) were inappropriately downgraded.

On May 22, 1991 radiation protection personnel were requested to support the removal of insulation on RHR piping in the torus room. This request consisted of a marked-up sketch of the piping indicating where the insulation was to be removed. A Radiological Technician (RT) performed a survey of the RHR piping as indicated on the sketch. During the ALARA pre-plan meeting, workers identified that the scope of the insulation removal was larger than indicated on the original sketch. As a result, the survey was incomplete and continuous coverage by a RT was specified.

The ALARA review for the job recommended the use of HEPA ventilation to control airborne radioactivity during insulation removal. The only proper way to provide HEPA ventilation would have been to remove a floor plug to the torus room that was near the work area. Removal of this floor plug would require several hours. Faced with this delay, the use of the HEPA ventilation was viewed by the Chief RT in the radiation protection office as too time consuming to pursue. The Chief RT in the radiation protection office did not attend the ALARA pre-job meeting and based his recommendation on the incomplete survey of the work site. He presented his recommendations to a radiological supervisor for approval. This radiological supervisor had not attended the ALARA pre-job meeting. After they notified the ALARA group, the Chief RT and the radiological supervisor, acting on inadequate survey data, modified the ALARA review to delete this recommendation.

Following this, work was allowed to proceed without further evaluation of the adequacy of the remaining engineering controls and respiratory protection. When the insulation was removed, elevated radiation readings (R/hr) were observed and the area was evacuated. Airborne radioactivity up to 97 times the MPC value was encountered.

Immediate Corrective Actions:

The immediate corrective actions for this event included upgrading respiratory protection equipment requirements, adding HEPA ventilation and conducting an additional ALARA pre-plan meeting before resuming work. Full compliance was achieved on May 22, 1991. Training on this event was provided to all Radiological Technicians and the event and associated problems were discussed in department meetings.

Weaknesses Identified and Corrective Actions that Will be Taken to Prevent Further Violations:

The Human Performance Enhancement System (HPES) developed by the Institute of Nuclear Power Operations (INPO) was used to evaluate this event. The Authority's evaluation of this event revealed three major weaknesses: 1) written/verbal communication; 2) work organization and supervisory methods and 3) work practices. This evaluation also identified areas for improvement in program implementation.

1. **Written and verbal communication problems:**

   Weaknesses:

   - The scope of work was not communicated adequately to radiation protection personnel. The sections of insulation shown on the marked up sketch were surveyed adequately, however, the marked-up drawing did not include all of the insulation that was to be removed.

   - ALARA group personnel discounted information presented by workers as to the possible condition of the insulation. After their concerns were discounted, the workers were reluctant to express further concerns about protective clothing requirements for the insulation removal.

Corrective Actions:

- The practice of accepting incomplete RWP requests is being discontinued. The data needed to support performing adequate surveys and ALARA reviews in advance of the start of work is required to be submitted. The need to question and verify the scope of work has been stressed to radiological protection personnel.

- Personnel in the ALARA group have been counseled as to the importance of taking worker input and suggestions into consideration when developing recommendations and engineering controls.

2. **Work organization and supervisory methods problems:**

Weaknesses:

- The ALARA group perceived their role as a lead organization for work planning and expediting, rather than focusing on adequate radiological controls to minimize worker exposures. This perception resulted from the lack of job planning input from the work groups during the emergent maintenance work encountered in the plant outage.

- The original radiation work permit (RWP) request used to prepare the ALARA review did not adequately describe the scope of work to be performed. As a result, the original radiological survey used to prepare the RWP was inadequate.

- The original (i.e., incomplete) survey data was used by a radiological supervisor and technician, not directly associated with the job, to downgrade the requirement for HEPA ventilation. This inappropriate decision by technician and supervisor resulted from perceived schedule pressures.

Corrective Actions:

- The results of the HPES evaluation used to analyze this event have been presented to radiological protection personnel to ensure their understanding of the problems that resulted in this violation.

- The importance of maintaining their responsibility for radiological protection regardless of schedule or production considerations has been stressed in meetings with radiological protection personnel.

- The practice of accepting incomplete RWP requests is being discontinued. The data needed to support performing adequate surveys and ALARA reviews in advance of the start of work is required to be submitted.

- The Chief RT and radiological supervisor involved in the downgrading of the protective requirements have been counseled as to the need for maintaining a conservative and questioning attitude.

- The policy on ALARA reviews has been clarified to require that revisions to ALARA reviews receive the same level of management approval as the original review.

3. **Work practices problems:**

Weaknesses:

- Work practices in the preparation of the ALARA review for this job indicate a lack of attention to detail and a questioning attitude. The ALARA review did not emphasize concern for insulation removal in areas that potentially were wetted by reactor water.

- The ALARA review failed to consider the potential impact of air currents and drafts to nearby air spaces for possible airborne radioactivity problems.

Corrective Actions:

- The personnel involved in the preparation of the ALARA review have been counseled as to their responsibility for thoroughness.

- The ALARA review checklist will be revised to address the potential for the spread of airborne radioactivity to adjacent rooms and spaces.

4. **Related Issues:**

Weakness:

- The ALARA review is perceived by radiological protection personnel as being subordinate to the RWP rather than the two being given equal weight in achieving good radiological controls.

Corrective Action:

- The Radiological and Environmental Services Superintendent has reemphasized to radiological protection personnel the complimentary roles of the ALARA review and the RWP. The ALARA review is the radiological work planning document that may specify engineering controls and recommend work practices. The RWP is the document used to achieve radiological control on the job. The policy clarification to require full review and re-approval of ALARA review changes will strengthen this relationship. This policy change, however, does not relieve the RT on the job from maintaining a conservative and questioning attitude toward job coverage.

Those corrective actions not already completed will be completed by September 1, 1991.

The inspection report contains one significant error. The airborne radioactivity concentration in the work area following removal of the insulation was 97 times the MPC established in 10 CFR 20 Appendix B, not 9700 as indicated in the inspection report. This error appears to be the result of a missing unit (9700% = 97 times MPC).