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January 23, 1986

Office of Inspection and Enforcement
Attn: Dr. T. E. Murley
Regional Administrator
US Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19406

Dear Dr. Murley:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
Operating License No. DPR-73
Docket No. 50-320
Inspection Report 85-21

Inspection Report 85-21 dated December 24, 1985, identified two (2) items of non-compliance. Attached are the GPU Nuclear responses to those items.

Sincerely,

F. R. Standerfer
Vice President/Director, TMI-2

FRS/JCA/eml

Attachment

cc: Director - TMI-2 Cleanup Project Directorate, Dr. W. D. Travers

STATEMENT OF VIOLATION

The Order for Modification of License, dated July 20, 1979, as amended by the Order dated February 11, 1980, states, in part: " ...Pending further amendment of the Facility Operating License, the licensee shall maintain the facility in accordance with the requirements set forth in Attachment 1..." (Proposed Technical Specifications, Appendix A, to License No. DPR-73). The Proposed Technical Specification 6.8.1.a states in part: Written procedures shall be...implemented covering... the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978..." Specific activities referenced in Regulatory Guide 1.33, include chemical and radiological procedures prescribing the nature of sampling.

Section 2.2.3 of Procedure No. 2104-4.132, Revision 1 dated December 6, 1983, Sampling and Chemical Addition to OTSG "A", requires two valve isolation at the sample sink.

Contrary to the above, after completing Section 4.3.8, which is the final step of the procedure, two valve isolation at the sample sink is not provided.

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

GPU NUCLEAR RESPONSE

As detailed in NRC Inspection Report 50-320/85-21, GPU Nuclear procedure 2104-4.132, Revision 1, dated December 12, 1983, Sampling and Chemical Addition to OTSG "A", required, but did not establish, two (2) valve isolation at the secondary system sample sink. This condition was the result of an oversight on the part of the originator of Revision 1 to this procedure.

Procedure 2104-4.132 was cancelled and reissued under Procedure 4212-OPS-3562.01, Revision 0, dated March 27, 1984, Sampling and Chemical Addition to OTSG "A", as part of a general upgrading and reformatting of procedures. During the NRC review of Revision 1 to this procedure on July 17, 1985, the NRC identified the failure of the procedure to provide two (2) valve isolation at the secondary system sample sink. As a result, Revision 1 was modified to include the steps necessary to establish two (2) valve isolation. Revision 1 to 4212-OPS-3562.01 was issued on August 10, 1985.

It should be noted that the requirement to maintain two (2) valve isolation was procedural in nature and was not motivated by containment integrity concerns. The two (2) valves involved are not containment isolation valves.

To sensitize individuals to this event and to prevent recurrence, a "lessons learned" discussion of this event will be added to the Responsible Technical Reviewer (RTR) and Cognizant Engineer training course. This action will be completed by March 3, 1986, at which time we will be in full compliance.

ATTACHMENT
(4410-86-L-0018)

STATEMENT OF VIOLATION

10 CFR 20.201(b) requires each licensee to make or cause to be made such surveys as (1) may be necessary for the licensee to comply with the regulations in 10 CFR Part 20, and (2) are reasonable under the circumstances to evaluate the extent of the radiation hazards that may be present.

1000-PLN-4010.01, "Radiation Protection Plan - Unit 2," states in part that, "Continuous sampling representative of air the person is breathing shall be performed to supplement periodic measurements during work which has the potential for the generation of significant airborne radioactivity."

9000-ADM-4020.02, "Description and Selection of Respiratory Protection Equipment," states in 4.3.1, in part, "air samples representative of the breathing zone shall be obtained during any of these activities for estimating exposure to worker."

Contrary to the above, on June 13, 1985, the licensee did not evaluate the radiation hazards incident to the presence of radioactive material at the 305' elevation of the annulus area of the Fuel Handling Building prior to and during an entry that required workers to traverse a pathway which had surface contamination; resulting in the unplanned intake of radioactive material and the assignment of 40 MPC-hr to a worker.

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

GPU NUCLEAR RESPONSE

The TMI-2 Radiological Controls (Rad Con) Department has reviewed the inspection findings contained in Inspection Report 85-21 and the Notice of Violation contained in the NRC letter dated December 24, 1985. The review concluded that inadequate communications between Craft and Rad Con personnel resulted in the performance of work without adequate surveys being performed immediately prior to the work. The annulus area was subject to several surveys for direct radiation, surface contamination, and airborne radioactivity; however, these surveys were not in the specific location in which work was performed on June 14, 1985.

Subsequent to the completion of the work in the annulus area, skin contamination was identified on the faces of two (2) workers. The presence of skin contamination resulted in the commencement of an "in vivo" bioassay program to assess the potential for exposure to airborne radioactivity. The bioassay commenced on June 17, 1985. The initial whole body counts performed as part of this bioassay program indicated that there was an exposure of one worker to airborne radioactivity in excess of 2 MPC-hrs. The second worker experienced low level contamination on his moustache with no significant internal uptake. A series of whole body counts were subsequently performed which enabled Radiological Controls personnel to determine individual-specific excretion and retention functions for the radionuclides involved and thereby conservatively assess the extent of the individual's exposure to airborne radioactivity. Fifteen series of whole body counts and a urine sample were made as part of the thorough follow-up to the worker's skin contamination. The fact that these counts commenced on June 17, 1985, did not impede the ability to conservatively evaluate the exposure to airborne radioactivity; whole body counts performed earlier would not have prevented the occurrence nor would they have had any mitigating effects. The bioassay results were reviewed by a board certified health physicist.

A review of this occurrence was conducted by the TMI-2 Safety Review Group (SRG). The SRG report, Incident Event Report (IER) 50-320/85-066, dated June 19, 1985, identified the fact that work in the annulus area was performed in dose rates of 35 mR per hour. This condition was contrary to the requirement of Radiological Review 50024 that work in the area with dose rates greater than 25 mR per hour have an addendum to the Radiological Review. The required addendum was not written.

It should be noted that each item cited in NRC Inspection Report 85-21 had been identified previously and documented by GPU Nuclear. Specifically, the inadequacy of surveys was addressed in memorandum 9240-85-2690, dated June 27, 1985. This memorandum described an investigation conducted by TMI-2 Radiological Engineering. The failure to prepare an addendum to the Radiological Review because dose rates exceeded 25 mR per hour was addressed in the IER, 50-320/85-066, dated June 19, 1985. The statement regarding the "lack of prompt and through follow-up" of the nasal contamination was documented in Rad Con memorandum 9240-85-2960, referenced above. Our investigations identified these items and resulted in corrective and preventive actions being taken.

As a result of this event, the following corrective and preventive actions have been taken:

1. An intensive regime of bioassays as described above was implemented to assess the extent of exposure.

2. An investigation into the event causes was conducted. As part of this investigation, an Incident Event Report (#50-320/85-066) was submitted to the TMI-2 SRG.

3. The prescription for protective clothing and devices for work in the affected area was upgraded to take into account the results of the investigation.

4. The Manager, TMI-2 Radiological Field Operations, conducted counseling sessions with the Group Radiological Controls Supervisors (GRCS's) to review the corrective actions taken and the lessons learned.

The results achieved by these actions were as follows:

1. An exposure to airborne radioactivity of 40 MPC-hrs was calculated and assigned to the worker involved. This is considered to be conservative (i.e., overestimate of the actual exposure). Although this exposure was higher than expected, it represents less than 8% of the allowable federal

quarterly limit of 520 MPC-hrs. The details of this calculation are fully documented, and are available for inspection upon request.

2. The TMI-2 Safety Review Group concluded that three corrective actions were appropriate. These were: 1) improvement in technician training and worker briefing, 2) a provision for updating the radiological review, and 3) a procedural requirement for immediate notification of TMI-2 Rad Con management to allow for determination of the need for bioassay following indications of radioactivity intake. The first two recommendations were adopted. The third was considered inappropriate to be added to procedures inasmuch as existing requirements are considered to be adequate. The TMI-2 Safety Review Group agreed with this determination.

3. Subsequent to the changes in protective clothing prescriptions and supervisor briefings, no further unanticipated exposure to airborne radioactivity have occurred in this area.

Actions currently underway to avoid future non-compliance items of this type are identified below:

1. During cyclic training with TMI-2 Rad Con technicians, the TMI-2 Rad Con Director and TMI-2 Rad Con Field Operation management discussed several problems (including that reported in NRC Inspection Report 85-21) in which poor communications caused problems in the field. TMI-2 Rad Con Management will continue to stress the importance of both verbal and written communications in future cyclic training sessions.

2. During cyclic training, TMI-2 Rad Con Management has discussed with Rad Con Technicians and GRCS's the requirement that all surveys are to be documented and reviewed by a GRCS.

3. At GRCS meetings, the need for high quality surveys and reviews has been discussed. This practice will be continued periodically.

4. GRCS's have been counselled and directed to ensure that whole body counts are performed promptly following potential exposures as dictated by the nature and magnitude of the exposure.

5. The Rad Con Training Department will develop a seminar describing this occurrence which will be presented during a 1986 training cycle. This action will be completed by May 1, 1986.

GPU Nuclear considers that the above corrective actions are responsive to the item of non-compliance and should preclude recurrence of similar problems in the future. We will be in full compliance with the completion of the development of the seminar noted above.