GPU Nuclear

GPU Nuclear Corporation
Post Office Box 480
Route 441 South
Middletown, Pennsylvania 17057-0191
717 944-7621
TELEX 84-2386
Writer's Direct Dial Number:

5211-84-2081
March 30, 1984

Mr. R. C. DeYoung
Director, Office of Inspector and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. DeYoung:

Three Mile Island Nuclear Station, Unit I (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
Response to Notice of Violation and Proposed Civil Penalty,
Regarding Inspections 83-25 and 83-26 and Enforcement Conference 83-33.

Attached are the responses to the individual violations that were requested by your February 29, 1983 Notice of Violation and Proposed Civil Penalty. Based on our review of these violations we do not believe a civil penalty is warranted or required.

We agree that errors did occur. We are concerned that they occurred. However, with two exceptions, these errors were discovered by GPUN and in all instances appropriate corrective action was promptly taken without NRC urging. While the number of errors that occurred is larger than we desire, they were not individually significant. Moreover, they occurred over a two-month period during which several non-routine, complex operations were accomplished, and should be judged in the light of the many challenging operations that were performed correctly. The individual human errors that did occur were dealt with using our progressive disciplinary program. We believe this program combined with rewards for good performance and the corrective actions taken for the specific events will continue to reduce the number of errors.

There have been two developments since the proposed fine was issued which we believe warrant your attention in assessing this response. First, a revised General Statement of Policy and Procedure for Enforcement Actions was promulgated by the Commission on March 8, 1984. Although it was not effective when the fine was proposed, it clearly is now. The second is that you and Dr. Murley have conducted personal interviews of TMI-1 site personnel.

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We have reviewed the Notice of Violation against the revised enforcement action policy statement. The revised statement explicity allows aggregation of violations for the assignment of a severity level as has been done in this instance. However, in providing the flexibility to aggregate certain violations, the Commission had in mind focusing attention on an "underlying problem or programmatic deficiencies when appropriate." 49 Fed. Reg. 8584 (1984). We do not believe that test is met here and thus question whether aggregation in this instance is appropriate. In fact, we agree with the statement in Mr. Starostecki's December 23, 1983 letter that "these problems are considered to be isolated cases and not indicative of a programmatic problem". Further, review of the items in the Notice of Violation, taken individually or even collectively, do not rise to the severity of problems enumerated as illustrative of Category III severity items in the revised statement -- viewed either as operational matters (Supplement I) or as health pyhsics concerns (Supplement IV). Thus, we question the appropriateness of categorizing our violation as Category III at all. Finally, viewed even as a Category III violation, we note that the Commission has changed its policy with regard to this category from "usually imposing fines to simply considering" fines. Surely, when compared with the illustrative examples within the range of Category III severity, the items noted in our proposed violation notice cannot be viewed as severe.

The second development since the civil penalty was proposed is your's and Dr. Murley's visit to TMI-1 on March 5, 1984. During the visit you met individually with management, supervisory personnel, and first level employees. We can understand that prior to this visit you may have believed that it was necessary to invoke a civil penalty to promote proper attention and reaction within the TMI-1 organization as a whole. Based on our prompt and comprehensive corrective actions, which from the enforcement conference and your inspection at the site we understand you accept, and based on the positive attitudes which you observed during your visit, we believe that a civil penalty is unnecessary to further NRC's enforcement objectives.

Other positive indications of this organization's approach are:

1. Unannounced Off-Shift Tours by Management.

2. On-Shift QA Monitors.

3. Site Managers meetings periodically where problems such as these violations and other significant matters are discussed for general understanding and multidisciplinary feedback.

4. The Establishment of the Nuclear Safety and Compliance Committee.

5. Frequent discussions between management and the operators.

6. Discussions between the shift workers and the Unit Vice President (2 conducted in 1983).

7. Plant Event Reports and followup discussions for a complete and broad understanding (including those which are not reportable).

8. The existence and enforcement of a Conduct of Operations Procedure.

9. The Annual QA Effectiveness Review.

These efforts are not representative of an organization which must be penalized to take effective action. We believe that a civil penalty in this case would serve no legitimate regulatory purpose and is unnecessary to improve professionalism in all areas of our operation. We believe that a civil penalty in this regard would be punitive in nature rather than encouraging good performance.

Based on the above we request that the proposed $40,000 civil penalty be rescinded in its entirety. In the event, however, that after assessing this response and taking into account particularly the revised Statement of Policy and the results of your judgement of our corrective actions and your discussions with personnel at TMI-1 you still believe that the civil penalty is warranted, we will promptly provide payment.

Sincerely,

H. D. Hukill,
Director, TMI-1

HDH:mle
Attachments

cc: Dr. Thomas E. Murley
R. Conte

Sworn and subscribed to before
me this 30th day of
March, 1984.

Notary Public

DARLA JEAN BERRY, NOTARY PUBLIC
MIDDLETOWN BORO, DAUPHIN COUNTY
MY COMMISSION EXPIRES JUNE 17, 1985
Member, Pennsylvania Association of Notaries

Violations Related to Containment Integrity

Violations 1a and 1b

1. Technical Specification 3.6.1 requires that containment integrity be maintained when reactor coolant (RC) pressure is 300 psig or greater, RC temperature is 200°F or greater, and nuclear fuel is in the core. Technical Specification 1.7 defines containment integrity and specifies as one of its conditions that all nonautomatic containment isolation valves are closed as required by the "Containment Integrity Checklist" attached to the operating procedure "Containment Integrity and Access Limits."

   Operating Procedure (OP) 1101-3 Revision 27, August 18, 1983, (Temporary Change Notice No. 1-83-0158, dated August 24, 1983) Containment Integrity and Access Limits, Enclosure 1, Reactor Building (Containment) Integrity Checklist, requires for containment integrity, in part, that nonautomatic containment isolation valve IA-V20, Instrument Air Isolation Valve, be closed (paragraph 18.2) and nonautomatic containment isolation valve FS-V405, Fire Service Test Connection/Drain Isolation Valve, be closed and capped (paragraph 17.1).

   Contrary to the above, with RC pressure greater than 300 psig, with RC temperature greater than 200°F, and with nuclear fuel in the core:

   a. Nonautomatic containment isolation valve IA-V20 was not closed between August 27, 1983 and September 20, 1983; and,

   b. Nonautomatic containment isolation valve FS-V405 was neither closed nor capped between August 27, 1983 and September 16, 1983.

Response to Violation 1a

(1) Admission or Denial

This violation was identified by GPUN and reported as LER 83-28 on September 20, 1983.

(2) Reason for Violation

This violation was personnel related in that the operators who checked IA-V20 closed on 8/18/83 and 9/15/83 did not recognize that the valve stem bushing nut was backed out and therefore the valve was not closed. In addition, the engineer inspecting containment on 8/31/83 recognized that the valve stem bushing nut was improper but did not realize that the valve was not closed. As a result a job ticket to correct this problem was not prepared until 9/6/83 and was not elevated to Management's attention until 9/20/83.

Contributing factors were that the valve stem was not so significantly out of position that the valve's position could unambigously be determined. In fact four supervisors were consulted and could not conclusively establish the valve's position until leakage testing and valve disassembly was accomplished at the direction of the Operations & Maintenance Director.

(3) Corrective Action Taken

As discussed in LER 83-28 IA-V20 was repaired, closed, and tested.

(4) Steps Taken to Prevent Recurrence

As discussed in LER 83-28 the importance of timely followup on Containment isolation related items has been emphasized. The Containment Integrity Checklist (OP 1101-3) has been changed to include checking for valve damage or obstructions which may prevent full closure. Other manual containment valves are being inspected to confirm that the stem bushings are adequately retained.

(5) Date of Full Compliance

Full compliance has been achieved and steps to prevent recurrence will be completed by May 1, 1984.

Response to Violation 1b

(1) Admission or Denial

This violation was identified by GPUN during a reverification of containment integrity that was being conducted at GPUN's initiative and was reported as LER 83-25 on September 16, 1983.

(2) Reason for Violation

The reason for this violation was personnel error in that the operator did not properly reclose FS-V405 and install its cap subsequent to performing local leakrate testing.

(3) Corrective Action Taken

FS-V405 was closed and capped to correct this violation. The remainder of the containment re-verification did not identify any further problems.

(4) Steps Taken to Prevent Recurrence

A complete review of this event was conducted and as a result disciplinary action was taken with the operators involved. In addition, the event was discussed with all Operations personnel to emphasize the cause and consequences of the event. A management verification of the containment integrity checklist will be conducted after containment integrity is set for the next heatup.

(5) Date of Full Compliance

Full compliance was achieved on 9/15/83 when FS-V405 was closed and capped. Steps to prevent recurrence will be completed the next time containment integrity is set.

General Discussion of Violations 1.a and 1.b

The fact that these violations were identified by GPUN is to GPUN's credit. The containment inspection was very thorough and Management's followup to potential problems once identified was aggressive and appropriate. We would have preferred a more timely follow up to the problem identified for IA-V20 by the engineer performing the inspection (he has been counselled in this regard). However, once identified to Management the status of IA-V20 was quickly determined, resolved, and actions to prevent recurrence were taken. Based on this, these events were discovered and corrected as a result of the efforts of a Management striving for excellence.

Violations Related to Procedural Implementation

Violation 2a

2. Technical Specification 6.8.1 requires, in part, that written procedures important to safety shall be established, implemented, and maintained.

Contrary to the above, on four occasions, written procedures important to safety were not properly implemented, as evidenced by the following:

a. Operating Procedure (OP) 1104-43, Revision 19, February 11, 1983, Nuclear Plant Sampling, paragraph 3.2.2.12.c and Enclosure 1, require, in part, that the Makeup Tank Liquid Sample Flush Valve, (CA-V95), be closed after a makeup tank liquid sample is collected.

However, between August 20 and 29, 1983, CA-V95 was open with no makeup tank liquid sample being collected.

Response to Violation 2a

(1) Admission or Denial

This violation is admitted and was identified by GPUN in the process of determining why an unplanned release of Kr-85 tracer gas had occurred on August 29, 1983.

(2) Reason for Violation

This violation was caused by failure of the chemistry technician to properly follow the procedure and close CA-V95 as required following completion of sampling.

(3) Corrective Action Taken

A plant incident report was prepared, CA-V95 was closed, and a complete valve line-up of the nuclear sample room was conducted. All chemistry technicians were counselled concerning this event.

(4) Steps Taken to Prevent Recurrence

Disciplinary measures taken for non adherence to procedures associated with other events and the resultant internal publicity should prevent recurrence.

(5) Date of Full Compliance

Full compliance was achieved on August 29, 1983 when CA-V95 was closed.

Violation 2b

b. Operating Procedure 1104-43, Revision 19, dated February 11, 1983, Nuclear Plant Sampling, paragraph 3.2.2.15.g and Enclosure 1, require, in part, that Makeup Tank Gas Sample Return Isolation Valve (CA-V47) and Makeup Tank Gas Sample Bomb Bypass Valve, (CA-V48) be closed after a makeup tank gas space sample is collected.

However, on August 27, 1983, Valves CA-V47 and CA-V48 were open with no makeup tank gas space sample being collected.

Response to Violation 2b

(1) Admission or Denial

This violation is admitted and was identified by GPUN while attempting to establish a hydrogen overpressure on the Makeup Tank. The event was reported as LER 83-022 due to exceeding the Technical Specification hydrogen limits for the Waste Gas Holdup System (TS 3.22.2.5).

(2) Reason for Violation

This violation occurred due to personnel error in that the chemistry technician did not restore the proper valve lineup following sampling of the Makeup Tank.

(3) Corrective Action Taken

CA-V47 and 48 were closed and the chemistry technician was counselled under our progressive discipline program.

(4) Steps Taken to Prevent Recurrence

A plant incident report was prepared and was discussed with Chemistry Department Personnel.

(5) Date of Full Compliance

Full compliance was achieved on August 28, 1983 when CA-V47 & 48 were closed.

Violation 2c

c. Emergency Plan Implementing Procedure (EPIP) 1004.15, Temporary Change Notice No. 1-83-0201, dated September 30, 1983, Post Accident In-Plant Sampling, paragraph 5.1.7 and Attachment 4, require that Reactor Coolant Letdown Sample Valve (CA-V16) be closed prior to implementing the procedure for obtaining a Reactor Coolant System (RCS) sample.

However, on September 30, 1983, the procedure for obtaining an RCS sample was implemented, but valve CA-V16 was not closed.

Response to Violation 2c

(1) Admission or Denial

This violation is admitted and was identified by GPUN during the process of determining why a "demonstration" post accident RCS sample could not be drawn.

(2) Reason for Violation

This event occurred as a result of two evolutions being conducted simultaneously using the same equipment. Both evolutions were being conducted using approved procedures but without awareness that the other was in progress and without proper coordination.

The first evolution was a demonstration post accident sample for NRC observers. The required valve lineup was completed and the technician went to get the NRC observers. During the technician's absence a second technician entered the lab and performed the valve lineup for a normal RCS sample. The normal RCS sample was interrupted by plant testing which caused CA-V13 to close. The technician left the sample room until the testing was completed and normal sampling could resume. In the meantime, the first technician returned with the NRC observers and continued with the post accident sample demonstration but was unable to establish sample flow due to CA-V16 being opened for a normal RCS sample.

(3) Corrective Action Taken

CA-V16 was closed and the post accident sample demonstration was completed.

(4) Steps Taken to Prevent Recurrence

A plant incident report was prepared and discussed with Chemistry Department supervisors and technicians. It was emphasized to the Foremen that their primary responsibility is coordination of activities and control of the technicians and activities.

(5) Date of Full Compliance

Full compliance was achieved on Sept. 30, 1983 when CA-V16 was closed.

Violation 2d

d. Administrative Procedure (AP) 1002, Revision 27, dated August 1, 1983, Rules for the Protection of Employees Working on Electrical and Mechanical Apparatus, paragraph D.1.1 and Enclosure 1, requires, in part, that for apparatus to be taken out of service, an application form operations personnel must be completed to assure technical specification operability requirements are met.

However, on August 23, 1983, the Condenser Off Gas System Radiation Effluent Monitor, RM-A5, a monitor required by the technical specifications to be operable, was taken out of service for approximately 30 - 40 minutes by closing the sample pump inlet isolation valve VA-V17 without the required application from operations personnel being completed.

Response to Violation 2d

(1) Admission or Denial

This violation is admitted and was identified by GPUN and reported as LER 83-019.

(2) Reason for Violation

This violation was a result of personnel error. Technicians trouble shooting for a vacuum leak in newly installed monitoring equipment shut VA-V17 without realizing that shutting this valve also isolated the condenser offgas monitor (RM-A5) which was required to be operable with a condenser vacuum established.

(3) Corrective Action Taken

Valve VA-V17 was opened reestablishing flow to RM-A5 within 40 minutes of its initial closure.

(4) Steps Taken to Prevent Recurrence

I&C and Startup & Test personnel were instructed to coordinate their testing and trouble shooting activities with the Shift Supervisor/Foreman and obtain any necessary permission to take equipment out of service.

(5) Date of Full Compliance

Full compliance was achieved on August 23, 1983 when VA-V17 was opened restoring flow to RM-A5.

General Discussion of Violations 2a through 2d

All of the above violations were discovered by GPUN, corrected in a timely manner, and reported to the NRC. The violations are considered to be of minor safety significance. The events were caused by random unrelated individual human errors rather than a lack of respect for procedural compliance. In fact we believe we have reached a point where we can expect procedural compliance because of the procedure quality we have achieved. In addition, personnel know that they can not hide behind poor procedures to cover up inadequate personal performance.

Our procedures can always be improved. However, the quality of our procedures is in part responsible for the high level of respect we believe our people have for them. We are concerned at the number of human errors which occurred but we do not believe that they are indicative of a single underlying cause. Management expressed its concern and the need for improved performance to the TMI-1 staff well before any NRC action was taken. We believe our personnel disciplinary policy and actions, and continued emphasis on procedural compliance will be successful in preventing recurrence of these types of problems.

Violations Related to Procedural Intrepretation

Violation 3

10 CFR 50.54(q) requires the licensee to follow and maintain in effect emergency plans which meet the standards of 10 CFR 50.47(b) and the requirements of 10 CFR Part 50, Appendix E.

Technical Specification 6.8.1 requires written procedures be established, implemented and maintained covering, among other things, emergency plan implementation.

Emergency Plan Implementing Procedure 1004.1, Revision 9, August 22, 1983, Unusual Event, paragraphs 1.0 and 3.4.1b define a condition that shall be regarded as an Unusual Event at TMI-1 with respect to exceeding the technical specification primary system leakrate. Paragraph 3.4.1b lists the indications of this initiating condition, in part, as confirmed (procedurally indicated)

unidentified reactor coolant leakrate greater than 1 gallon per minute (gpm). Further, paragraph 3.3.1 considers plant conditions which may indicate a potential degradation of the level of safety of the plant to be regarded as an Unusual Event.

Contrary to the above, on September 22, 1983, as of 6:00 PM, a plant condition of a confirmed (procedurally indicated) unidentified primary system leakrate in excess of 1.0 gpm (calculated as 1.2 gpm) was not classified as an Unusual Event.

Response to Violation 3

(1) Admission or Denial

GPUN considers that this violation arises from a reasonable disagreement concerning the interpretation of EPIP 1004.1. Based on the above statement of violation, we understand the NRC's interpretation to be essentially that, regardless of the applicability of the Technical Specifications (TS) on leakrate, when RCS unidentified leakage is greater than 1 gpm but less than 50 gpm an Unusual Event must be declared. This interpretation essentially renders inoperative the words Technical Specification in the procedure's initiating condition, which reads "Exceeding primary system leak rate technical specification". The NRC interpretation is not consistent with the fact that leak rate measurements are not made or required when the plant is below 525°F and that the 1 gpm limit is inoperative when at or below hot shutdown.

(2) Reason for Violations

GPUN did not interpret EPIP 1004.1 the way the NRC staff did and therefore did not declare an Unusual Event.

(3) Corrective Action Taken

Section 3.4.1 of EPIP 1004.1 will be modified to clearly indicate that an Unusual Event should be declared when leakage exceeds the stated limits (eg; unidentified leakage exceeds 1 gpm) and the reactor is critical.

(4) Steps Taken to Prevent Recurrence

The above change will be explained to the operators to assure a full understanding and prevent recurrence of this type of event. In addition, a revision to the RCS leakrate procedure (SP 1303-1.1) will be issued that clearly defines how to calculate, how to confirm, and the time allotted for confirmation of unidentified leakage. It should be noted that at the time of this event, management was convinced that the leakage was into a closed system which directed it to a collecting tank and was therefore "identified leakage" as defined in Regulatory Guide 1.45. All operators will be thoroughly trained on the procedure revision.

(5) Date of Full Compliance

Full compliance will be achieved by June 1, 1984 when EPIP 1004.1 and SP 1303-1.1 will be revised.

Violation 4

Technical Specification 6.8.1 requires, in part, that procedures important to safety shall be implemented covering Emergency Plan Implementation and Administrative Procedures.

Administrative Procedure (AP) 1001A, Revision 4, dated June 14, 1983, Procedure Review and Approval, paragraphs 3.3 and 3.4 require, in part, that the control and approval process for revision/changes to procedures is by use of a Procedure Change Request (PCR) form (Figure 1001A-1) or a Temporary Change Notice (TCN) form (Figure 1001A-2). Administrative Procedure 1001G, Revision 4, dated October 13, 1982, Procedure Utilization, paragraph 3.3.10, states, in part, that Special Temporary Procedures (STP) are subject to the same level of control and approval as their permanent counterparts.

Contrary to the above, on August 29, 1983, STP No. 83-115, dated August 27, 1983, Injection of Radioactive Tracer Gas into the RCS, was revised/changed in that certain valves to be checked in a prerequisite valve lineup were added to this list and this revision was made without the use of a PCR or TCN. The revision/change consisted of adding certain flow path isolation or boundary isolation valves to prevent inadvertent release of radioactive material.

Response to Violation 4

(1) Admission or Denial

This violation is admitted. We note that the procedure in question was cancelled prior to its use in the revised form. Therefore no operations were performed using the improperly revised procedure.

(2) Reasons for Violation

The TMI-1 Administrative Procedures did not clearly address how changes to Special Temporary Procedures (STP) are to be made. The nature of an STP is for one time use. We had little experience with changes to them. This resulted in an oversight in properly processing the changes.

(3) Corrective Action Taken

The STP was cancelled and explicit guidance has been included in administrative procedures concerning revisions/changes to STP's.

(4) Steps Taken to Prevent Recurrence

All PRG members have been made aware of this event. This combined with the above changes in the administrative procedures should prevent recurrence.

(5) Date of Full Compliance

Full compliance has been achieved by cancelling the STP.

Violation 5

10 CFR 50.54(q) requires the licensee to follow and maintain in effect emergency plans which meet the standards of 10 CFR 50.47(b) and the requirements of 10 CFR Part 50, Appendix E.

Technical Specification 6.8.1 requires written procedures be established, implemented and maintained covering, among other things, emergency plan implementation.

Emergency Procedure 1202-12, Revision 14, dated May 18, 1983, Excessive Radiation Levels, paragraph 2.3.a.1.e and Enclosure II, require that a Planned/Unplanned Release Report be initiated by the shift supervisor when an atmospheric monitor reaches the alert setpoint.

Administrative Procedure 1044, Revision 12, June 30, 1983, Event Review and Reporting Requirements, paragraph 3.2.2.a.8, and 10 CFR 50.72, require notification of the NRC within one hour upon occurrence of any accidental, unplanned or uncontrolled radioactive release.

Contrary to the above, a Planned/Unplanned Release Report for an uncontrolled release of krypton-85 was not initiated by the shift supervisor after the fuel handling building atmosphere monitor RM-A4 reached the high alarm setpoint (higher than Alert) and plant effluent atmospheric monitor RM-A8 reached the Alert setpoint between 4:45 PM and 4:55 PM on August 29, 1983. In addition, the NRC was not notified until approximately 8:56 PM, August 29, 1983 of the release.

Response to Violation 5

(1) Admission or Denial

This violation is admitted and was, at least in part, discovered and corrected by GPUN within about 4 hours of the event. (The failure to complete the planned/unplanned release forms was identified by the NRC.)

(2) Reasons for Violation

Prior to the addition of Kr-85 to the RCS GPUN had performed calculations to determine the consequences of release of all 20 curies. These calculations indicated that such a release would result in insignificant offsite dose consequences. During the first attempted addition of Kr-85 to the RCS (8 curie container) some of the activity was released (Violation 2a). At the time of the release it was known, based on the above calculations, that the consequences were trivial.

The operators did not immediately recognize that the event had triggered the then existing prompt notification requirements. As a result, the event was not reported to the NRC until greater than 1 hour had elapsed and no release report was completed.

(3) Corrective Action Taken

The unplanned release was reported to the NRC, albeit late, on August 29, 1984. The release forms have not been completed after the fact since the evaluation of a release that the forms were supposed to trigger was completed and completing the forms at this time would serve no useful purpose.

(4) Steps Taken to Prevent Recurrence

AP-1044 has been revised to reflect changes to 10 CFR 50.72 which went into effect on January 1, 1984. The reporting requirements under the new rule would not have required reporting of this event (not withstanding a news release). In addition, all Shift Supervisors have been reminded of the reporting obligations under 10 CFR 50.72 and of the administrative requirements of EP 1202-12 regarding documentation of unplanned releases.

(5) Date of Full Compliance

Full compliance has been achieved.

General Discussion of Violations 3, 4, & 5

The above violations are administrative in nature and had no impact on public health or safety. They nevertheless should not have occurred. We believe that we have learned from these mistakes and have used them to reemphasize the need for the attention to detail.