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February 13, 2003

William D. Bechner, Program Director
Operating Reactor Improvements
Division of Regulatory Improvement Programs
Attn: Document Control Desk
Nuclear Regulatory Commission
Washington, DC 20555

SUB: Reply to a Notice of Violation

This letter is the required response to your letter dated January 15, 2003 concerning the Texas A&M Nuclear Science Center (NSC) violation of September 17, 2002 and the resulting Nuclear Regulatory Commission (Commission) inspection of September 18-20, 2002. We appreciate the Commission's measured and deliberate actions with regard to the violation and hope that our prompt and deliberate corrective actions with respect to each item below are acceptable.

Below, please find each item addressed in the Commission's Report Details, which we received with the letter requiring this response. Under each main item, please find the four specific items you required. Specifically, these items are: "(1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved."

1. Inspection Follow-up Item 50-128/2002-201-01: "The Licensee stated that the tag-out procedure will be revised and used when equipment is operated outside its normal parameters."

   1.1. This item was a contributing factor to the violation rather than a violation itself. As a result, there is no reply.

   1.2. We have changed our tag-out procedure to achieve the goals of: (1) making the procedure less onerous and thus make it easier for technicians to hang caution or warning tags and (2) making the tag-out system more flexible so that it will be a useful tool for a variety of abnormal conditions.

   To obtain the first goal, we have reduced the number of people required to hang a tag on a specific piece of equipment. Specifically, the NSC tag-out procedure required approval of a Senior Reactor Operator (SRO) and signatures from two independent technicians.

   The procedure now allows a technician to hang a tag warning of abnormal conditions with no approval.

   To obtain the second goal, we have changed the tag-out procedure to allow hanging tags to perform a variety of functions. Specifically, the tag-out procedure was specific about the uses of caution and warning tags and made no provisions for operating equipment in an abnormal

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configuration. The new procedure combines warning and caution tags and allows the technician to write any helpful or necessary instructions. With the combined tag, technicians can alert operators of any abnormal conditions that exist.

Under the modified tag-out procedure, the danger tags will warn operators not to operate equipment in order to prevent damage to equipment or harm to personnel.

This new tag-out procedure is in the review process and will be available to the Commissions inspector during the next visit.

1.3. To avoid further violations of this type, NSC management will maintain the modified tag-out procedure and encourage its use.

1.4. The NSC will fully implement this procedure no later than March 1, 2003.

2. Inspection Follow-up Item 50-128/2002-201-02 as related to Violation 50-128/2002-201-01: from the Commission's Report Details, "The failure of the licensee to operate its facility in accordance with TS Section 6.3 by not adequately following operating procedures for startup, operations, and shutdown of the reactor... The licensee stated that the shift change log will be used to ensure relevant and useful turnover requirements are communicated."

2.1. NSC Technical Specification 6.3 requires the NSC to maintain approved procedures for normal operation. The Technical Specification states "Procedures shall be adequate to assure the safe operation of the reactor but shall not preclude the use of independent judgment and action should the situation require such."

The specific procedure to which the Commission is referring is the procedure for Shift Change that requires a shift change notebook and states "Entries which should be made in the shift change notebook include, but are not limited to, such items as samples movements, sample run and removal times, maintenance or modification activities in the facility..."

On September 17, technicians made a temporary modification to the Diffuser Pump. As the Commission report stated, the facility made good faith efforts to ensure the evening SRO was aware of the modification. Specifically, both the daytime SRO and the electronics technician performing the work demonstrated the operation of the pump to the evening SRO. However, the NSC failed to record this modification in the shift change notebook. The procedure states that these entries "should" be made. The reason for this omission is an oversight by the staff at the NSC.

Operations at the NSC do not change significantly from one day to the next. As a result, the entries in the shift change notebook are nearly the same everyday. A compounding fact is that much of the information in the shift change log is redundant (i.e. it is also in the Reactor Operations log and individual sample-tracking paperwork).

The NSC has changed the way we use the shift change notebook. Rather than rewriting information from the Reactor Operation log, Reactor Operators (RO's) and SRO's are using the shift change notebook as a means of passing all information of events and occurrences.

2.2. Because of this violation, the NSC has changed the way it uses the shift change log. As a result, this tool is much more effective. This will help prevent similar problems in the future.

2.3. To avoid further violations stemming from this cause, the NSC will continue this reform.

2.4. The NSC is now in full compliance.

3. Inspection Follow-up Item 50-128/2002-201-03 as related to Violation 50-128/2002-201-01: from the Commission's Report Details, "The licensee's failure to follow a procedure and not shut off the diffuser pump is another of example of [item 2 above]....The licensee stated that the facility shutdown checklist will be revised to include a final physical walk through of the facility after reactor shutdowns."

   3.1. Failing to shut off the diffuser pump was a result of an abnormal system lineup. The normal method of operating the diffuser pump (i.e. a switch in the control room) was bypassed. The operator did not notice that the "ON" indication remained lit. Since the operators were not required to tour the facility following shut down, they did not notice that the pump was still running.

   3.2. The NSC has added a line item to the security shutdown checklist that requires the operators to tour the facility after reactor shut down.

   3.3 To avoid further violation stemming from not knowing the exact status of equipment, the NSC will either maintain this item on the checklist or develop an alternate way of verifying the facility is in a normal shut down status.

4. Inspection Follow-up Item 50-128/2002-201-04: This item did not relate to a violation. From the Commission's Report Details, "The licensee stated that the connections on the diffuser pump discharge would be modified to reduce the change of future failure and that other piping connections would also be evaluated."

   4.1. The failure of this fitting was a direct cause of the pool water loss to the Demineralizer Room sump. The fitting was insufficiently locked in place and was of material that would not stand up to excessive vibration.

   4.2. The NSC replaced the discharge fittings for the diffuser pumps in September of 2002. The new fittings are metal with locking devices that prevent the fitting from inadvertently disconnecting.

   NSC management has also evaluated other connections to pool water systems including the skimmer, demineralizer and beam port blow-down systems. None of these systems presents the same of similar risks as the diffuser pump discharge fitting. In addition, other components in the diffuser system do not present a similar risk.

   4.3. To avoid similar future risks, the NSC will maintain this facility change.

   4.4. The NSC is in full compliance.

5. Inspection Follow-up Item 50-128/2002-201-05: This item did not relate to a violation, however was a direct cause for the loss of pool water to the ground. Because the liquid waste tanks at the

NSC were not cross-connected through overflows, exceeding the capacity of the on-line tank sent water out the top vent of the tank. From the Commission's Report Details, "The licensee stated that the waste tanks would be modified to allow them to overflow into each other, reducing the likelihood of an uncontrolled release."

5.1. While this was not a direct violation, it was a cause leading to a violation. The reason for the cause was that each liquid waster tank has only 12,000 gallons of capacity. After exceeding that capacity, the unanalyzed water flowed onto the ground.

5.2. The NSC has installed piping at the top of each tank to allow water to overflow from one tank into another. This makes the effective capacity of the online tank equal to the capacity of the 3 tanks combined or 36,000 gallons.

5.3. To avoid similar future risks, the NSC will maintain this facility change.

5.4. The NSC is in full compliance.

6. Violation 50-128/2002-201-01: The Commission refers to "The licensee's failure to follow procedure and determine the liquid waste concentration prior to release" as another example of this violation. The Standard Operating Procedures for the NSC require this analysis before release.

6.1. The reason for this violation was a combination of the first five items combined with the fact that no personnel were at the facility during this event. No group or individual made a conscious decision to discharge without analysis; rather it was a consequence of other procedural violations.

6.2. The corrective steps listed in the previous five items will prevent unplanned discharges.

6.3. There are not permanent corrective actions associated with this item.

6.4. Full compliance will be achieved when full compliance is achieved for items 1-5.

Sincerely,

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Acting Deputy Director
Texas Engineering Experiment Station

cc: 211/Central File