Rec'd 6/15/84
EA 84-32
DCS

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

June 11, 1984

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

Dear Mr. DeYoung:

Enclosed is our response to J. P. O'Reilly's May 11, 1984 letter to H. G. Parris transmitting the Proposed Civil Penalty Action: EA 84-32, Improper Reactivity Control (IE Inspection Report Nos. 50-259/84-02, -260/84-02, -296/84-02) for Browns Ferry Nuclear Plant which appeared to deviate from NRC commitments. We have enclosed our response to the Notice of Violations and Proposed Imposition of Civil Penalty. Fees in the response to the proposed civil penalty of $60,000 are being wired to the NRC, Attention: Office of Inspection and Enforcement.

If you have any questions, please call Jim Domer at FTS 858-2725.

To the best of my knowledge, I declare the statements contained herein are complete and true.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Licensing

Enclosure
cc (Enclosure):
U.S. Nuclear Regulatory Commission
Region II
ATTN: James P. O'Reilly, Regional Administrator
101 Marietta Street, Suite 2900
Atlanta, Georgia 30323

Mr. R. J. Clark
Browns Ferry Project Manager
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Bethesda, Maryland 20814

IE:14

REVISED
RESPONSE - PROPOSED PENALTY ACTION
IMPROPER REACTIVITY CONTROL
(REFERENCE INSPECTION REPORT NOS.
50-259/84-02, 50-260/84-02, AND 50-296/84-02)

Enclosure 1

Item A

Technical Specification 6.3.A requires that detailed written procedures be prepared, approved and adhered to for the startup and shutdown of the reactors.

Contrary to the above, a memorandum was issued to shift engineers on June 9, 1983, authorizing the use of the Rod Out Notch Override (RONOR) switch during controlled shutdowns for all units. These instructions were used on two occasions (September 6, 1983 and January 6, 1984) and were contrary to approved procedures GOI 100-12 and OI-85. The memorandum had not been approved by the Plant Operations Review Committee (PORC) or by the Plant Superintendent.

This is applicable to all three units.

1. Admission or Denial of the Violation

   TVA admits to the violation.

2. Reasons for the Violation if Admitted

   At the time management issued the memorandum it was mistakenly interpreted by management that the letter did not authorize any new mode of operation of the 'emergency-in' switch. The letter was intended to clarify a question regarding existing procedures, not to authorize a new mode of operation other than allowed by GOI-100-12 and OI-85.

3. Corrective Steps Which Have Been Taken and Results Achieved

   The memorandum has been withdrawn and the procedure relating to the RONOR switch has been revised.

4. Corrective Steps Which Will Be Taken to Avoid Further Violations

   Other outstanding memorandums have been reviewed and there are none which authorize a different mode of operation than expressly permitted by the PORC-reviewed and Plant Superintendent-approved procedures.

   Discussions have been held with those managers involved in issuing the letter to emphasize that procedures shall not be clarified by memorandum, but shall be formally revised.

5. Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Item B

10 CFR 50.59(a)(1) permits the holder of a license for a reactor facility to make changes in the procedures as described in the Safety Analysis Report without prior Commission approval unless the change involves a change in the Technical Specifications incorporated in the license or an unreviewed safety question.

10 CFR 50.59(b) requires the licensee to maintain records of changes in procedures as described in the Final Safety Analysis Report (FSAR) and include a written safety evaluation which provides the basis for the determination that the change does not involve an unreviewed safety question.

Contrary to the above, the licensee issued a memorandum on June 9, 1983, instituting use of the RONOR switch which rendered the Rod Sequence Control System (RSCS) inoperable below 20 percent rated power contrary to Technical Specification 3.3.B.3.a. Section 7.7 of the FSAR does not include in its shutdown procedure description the use of the RONOR switch above 50 percent rod density and below 20 percent power. The modification to procedures by issuance of the June 9th memorandum was made without seeking prior Commission approval and without conducting an evaluation of the safety significance of the change in order to determine whether a change to Technical Specifications or an unreviewed safety question was involved.

This is applicable to all three units.

1. Admission or Denial of the Alleged Violation

TVA admits the violation.

2. Reasons for the Violations

Since the memorandum was incorrectly interpreted as not authorizing any new mode of operation a written safety evaluation was not performed nor was Commission approval sought.

3. Corrective Steps Which Have Been Taken and Results Achieved

OI-85 has been revised defining the use of the RONOR switch. The subject memorandum has been withdrawn.

4. Corrective Steps Which Will Be Taken to Avoid Further Violations

Existing procedures require a written safety evaluation on issue of new procedures or revision to procedures authorizing a new mode of operation so no further corrective action is required.

5. Date When Full Compliance Was Achieved

Full compliance has been achieved.

Item C.1

Technical Specification 3.3.B.3.a requires that, whenever the reactor is in the startup or run modes below 20 percent rated power, the RSCS shall be operable.

1. Contrary to the above, on January 6, 1984, when Unit 1 reactor power was being reduced from 12 percent power, the RSCS was rendered inoperable by moving control rods with the RONOR switch. The following improper rod moves were performed.

   a. Control Rod 30-59 was moved out from notch 22 to 24 with the remaining group rods at notches 30, 24, 30, 26 and 26.

   b. Control Rods 30-03, 06-27, 54-27, and 06-35 were individually and continuously inserted from notch 24 to notch 0.

1. Admission or Denial of the Violation

TVA admits to the violation as stated.

2. Reasons for the Violation if Admitted

The unit 1 event on January 6, 1984 was clearly outside the RSCS requirements of Technical Specifications and the FSAR and outside the limitations of the administrative memorandum covering use of the 'emergency-in' switch during controlled shutdowns. At the time of the event, the unit had a half-scram and the reactor operator and the nuclear engineer were under the mistaken impression that an emergency existed. The reactor operator asked the nuclear engineer if the 'emergency-in' switch could be used; and the nuclear engineer erroneously agreed to rod moves that would not normally have been performed.

3. Corrective Steps Which Have Been Taken and Results Achieved

After the half-scram was reset, the nuclear engineer reconsidered rod movements in light of experience reviews of other similar incidents. He recognized that Technical Specifications had been violated without the existence of a true emergency and recommended a manual scram.

An administrative memorandum was issued January 12, 1984 that: (1) restricted the use of the 'emergency-in' switch to the correction of RSCS notch logic errors only; (2) prohibited the bypassing of RWM if it is operable, and (3) clearly identified reactor scrams as a possible and necessary action to rapidly reduce power. OI-85 was later revised to incorporate these restrictions. All of the reactor operators and nuclear engineers were sent through supplemental training on February 28, 1984 concerning this event and other problems and events at similar facilities.

4. Corrective Steps Which Will Be Taken to Avoid Further Violations

Specific use of the 'emergency-in' switch will be covered in the operator requalification program and conjunction with OI-85.

5. Date When Full Compliance Will Be Achieved

The Hot License Lesson Plan revisions and operator requalification training will be completed by December 14, 1984.

Item C,2

2. Contrary to the above, on September 6, 1983 during a Unit 3 controlled shutdown below 20 percent reactor power, the RSCS was rendered inoperable by moving control rods with the RONOR switch. The following improper rod moves were performed:

   a. Control Rod 34-31 was moved out from notch 26 to 28 with the other group rods at notch 24.

   b. Control Rod 10-31 was moved in from notch 2 to 0 with group rod 26-47 at notch 4, and then rod 10-31 was moved to notch 2.

   c. Control Rod 02-31 was moved from notch 8 to 4 with the other group rods at notch 8.

   d. Control Rod 34-07 was moved from notch 6 to 2 with the other group rods at notch 6 and 4.

1. Admission or Denial of the Violation

TVA admits to the violation.

2. Reasons for the Violation if Admitted

At the time of the Unit 3 shutdown on September 6, 1983, the use of the 'emergency-in' switch to insert control rods had been evaluated and mistakenly found to NOT render RSCS inoperable.

3. Corrective Steps Which Have Been Taken and Results Achieved

The memorandum has been withdrawn and OI-85 has been revised to limit the use of the 'emergency-in' switch in accordance with existing technical specifications.

4. Corrective Steps Which Will Be Taken to Avoid Further Violations

TVA will seek approval of a more flexible definition of RSCS operability. Until Technical Specification changes are approved, TVA will continue using the existing technical specification operability definitions.

5. Date When Full Compliance Will Be Achieved

TVA is in full compliance with the present definition of RSCS operability.

Item D

Technical Specification 3.3.b.3.c requires that, when the reactor is in the startup or run modes below 20 percent rated power, the RWM shall be operable. When the RWM is inoperable, a second licensed operator shall be assigned the specific task of assuring adherence to the control rod program.

Contrary to the above, on January 6, 1984, when Unit 1 power was being reduced from 12 percent power, the RWM was bypassed and rendered inoperable, and a second licensed operator did not assure adherence to the control rod program. Specifically, rod 30-59 was positioned at notch 22 versus required notch 24.

1. Admission or Denial of the Violation

TVA admits the violation as stated.

2. Reasons for the Violation if Admitted

The second licensed operator failed to verify the conformance to the RWM control rod program by allowing rods 30-59, 30-03, 06-27, 54-27, and 06-35, to be manipulated as described in item C.1. At the time of the event, the unit had a half-scram and the reactor operator and the nuclear engineer were under the mistaken impression that an emergency existed. The reactor operator asked the nuclear engineer if the 'emergency-in' switch could be used; and the nuclear engineer erroneously agreed to rod moves that would not normally have been performed.

3. Corrective Steps Which Have Been Taken and Results Achieved

After the half-scram was reset, the nuclear engineer reconsidered rod movements in light of experience reviews of other similar incidents. He recognized that Technical Specifications had been violated without the existence of a true emergency and recommended a manual scram. The shift engineer directed the unit to be scrammed.

An administrative memorandum was issued January 12, 1984 that: (1) restricted the use of the 'emergency-in' switch to the correction of RSCS notch logic errors only; (2) prohibited the bypassing of RWM if it is operable, and (3) clearly identified reactor scrams as a possible and necessary action to rapidly reduce power. OI-85 was later revised to incorporate these restrictions. All of the reactor operators and nuclear engineers were sent through supplemental training on February 28, 1984 concerning this event and other problems and events at similar facilities.

4. Corrective Steps Which Will Be Taken to Avoid Further Violations

Specific use of the 'emergency-in' switch will be covered in the operator requalification program in conjunction with OI-85.

5. Date When Full Compliance Will Be Achieved

The Hot License Lesson Plan revisions and operator requalification training will be completed by December 14, 1984.

Additional Information

In the cover letter for these specific violations you requested that our response specifically address six areas of corrective action as follows:

1. Training of licensed operators includes adequate reviews of current operational events and problems identified at other, similar facilities.

2. Procedures required for the operation of the facility are adequate to achieve the intended result and that operators understand the need for proper procedural adherence.

3. The operator training program at Browns Ferry facility instills the proper attitude toward reactor safety.

4. Proper administrative control is maintained for operating procedures.

5. The flow of communication, i.e., IE Notices and IE Bulletins, both from the plant and the corporate level, is prompt.

6. TVA, both at the corporate and plant management level, identifies root causes for problems and takes comprehensive action to prevent their recurrence.

A number of these areas have already been addressed in the responses to the violations. In addition we are providing the following supplemental information.

Items 2 and 4, are addressed in response to items A and B. Our training program now instills the proper attitude toward reactor safety and procedural adherence. In our review of these events any attitude to the contrary was not exhibited. Upper management discussions with selected operators have confirmed that the proper attitude exists.

The operating experience review is generally adequate, but as evidence by this event, improvement is warranted. Through our Regulatory Performance Improvement Program, we have provided for faster dissemination of very important events through live-time training. We are also pursuing, through our present reorganization, providing for more timely review of operating events.

We believe that the sum total of the tasks included in the Regulatory Performance Improvement Program and the proposed reorganizational changes will not only enhance identification of root causes and appropriate corrective action, but will allow TVA to head off and prevent problems before they occur.