



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

PDR  
P-016

OCT 02 1980

Tennessee Valley Authority  
ATTN: H. G. Parris, Manager of Power  
500 A Chestnut Street Tower II  
Chattanooga, Tennessee 37401

Gentlemen:

Enclosed please find Confirmatory Orders for your facilities. These orders confirm your commitments to implement action at your facilities in regard to IE Bulletin No. 80-17.

Sincerely,

A handwritten signature in black ink, appearing to read "Victor Stello, Jr.", written in a cursive style.

Victor Stello, Jr.  
Director  
Office of Inspection  
and Enforcement

Enclosure:  
Confirmatory Order

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED



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OCT 02 1980

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On July 2, 1980, a team of NRC Headquarters representatives went to the Browns Ferry site to gather detailed information on the event and its related considerations. IE Bulletin No. 80-17, "Failure of 76 of 185 Control Rods to Fully Insert During a Scram at a BWR" was issued on July 3, 1980 and requested actions to be taken by all licensees of operating General Electric designed Boiling Water Reactors. Among the actions requested were the following:

- "1. Within 3 days from the date of this Bulletin, perform surveillance tests to verify that there is no significant amount of water in the Scram Discharge Volume (SDV) and associated piping and that the SDV vent valves are operable and vent system is free of obstruction."
  
- "3. At the conclusion of the scram tests and all other scrams, verify that all vent lines in the SDV are functional. Verify that there is no significant amount of water in the SDV and associated piping."
  
- "5. Review and develop surveillance procedures such that scram discharge volume is monitored daily for residue water for 6 days and, if results are acceptable, the interval may be extended to 7 days."

Additional actions applicable to these BWR facilities were requested in Supplement Nos. 1, 2, and 3 to IE Bulletin 80-17; these supplements were issued on July 18, July 22 and August 22, 1980, respectively. Specific actions were requested with regard to the unobstructed venting and draining of the SDV. In particular, Item B.1 of Supplement 1 requested the following:

"B. Actions to be Taken by BWR Licensees and Completed by September 1, 1980:

- 1) Install a system to continuously monitor water levels in all scram discharge volumes. Continuous recording and alarm features must be included in the design. Consideration should be given to use of diverse level sensors in this (these) system(s). The design installed should represent the design with the highest level of reliability compatible with completion of installation by September 1, 1980. Provide a written description of the system design to the NRC Regional Office.

If installation by September 1, 1980 is not possible, by August 15, 1980, submit to the NRC Regional Office:

- 1) Documentation in detail why the installation cannot be completed by September 1, 1980.
- 2) A commitment to a firm schedule for installation.
- 3) A commitment to equipment changes and/or surveillance requirements in addition to those now in effect that will provide adequate assurance of SDV operability in the interim until installation is completed."

The licensee responded to this request in Supplement 1 to the Bulletin by letter dated August 18, 1980. This response was unacceptable on the basis that it did not provide adequate assurance that the licensee could maintain scram capability at all times during current operation. The Bulletin and its Supplements were issued to provide such assurance during an interim period of operation until an ultimate resolution is achieved by changes in system design and operating procedures.

In view of the foregoing considerations the NRC staff has concluded that particular criteria must be satisfied in order to provide adequate justification for continued operation. Criteria applicable to the licensee's facilities are set forth in Section III. These criteria reflect NRC judgement that continuous monitoring of the SDV with appropriate indication and alarm in the control room is to be completed no later than specified. Until the installation is complete and operable, surveillance checks of the SDV shall continue at 30 minute intervals whenever the reactor is critical.

These matters were the subject of the discussions between NRC and licensee representative Mr. J. Calhoun on September 10, 1980. The discussions provided the information on which the licensee made further commitments to satisfy the requests of the Bulletin and its supplements. These commitments were documented by letter dated September 19, 1980 from the licensee. In view of the importance of these commitments to safe operation of the facility, it is appropriate to confirm the licensee's commitments by order.

III

Accordingly, pursuant to the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, IT IS HEREBY ORDERED, EFFECTIVE IMMEDIATELY, THAT:

1. By December 22, 1980, the licensee shall:
  - a) Install and make operable a system to continuously monitor water levels in all scram discharge volumes (SDV).
  - b) The installed system shall provide for level-indication, with an associated alarm, in the control room, for each SDV. This equipment shall provide sufficient information to the reactor operator such that if water accumulates in either SDV the decision about actions to be taken can be made in a timely fashion from the control room.
2. The licensee shall submit a report to the Director, Reactor Operations Inspection, Washington, D.C. 20555 and to the Director of the appropriate Regional Office, confirming installation of the continuous water level monitoring system, with provisions for indication and alarm in the control room, at the time the installation is completed.

IV

Any person who has an interest affected by this Order may request a hearing within twenty-five (25) days of the date of the Order. Any request for a hearing

will not stay the effectiveness of this Order. Any request for a hearing shall be submitted to the Secretary, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555 with a copy to the Executive Legal Director at the same address. A request for a hearing should describe specifically the manner in which the petitioner's interest is affected by this Order and should address the criteria set forth in 10 CFR 2.714(d). If a hearing is requested by a person who has an interest affected by this Order, the Commission will issue an order designating the time and place of any such hearing.

If a hearing is held, the issue to be considered at such a hearing shall be whether the licensee should perform the actions required in Part III of this Order in accordance with the schedule stated therein.

Operation of the facility on terms consistent with this Order is not stayed by the pendency of any proceeding on the Order.

FOR THE NUCLEAR REGULATORY COMMISSION

  
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Victor Stello, Jr.  
Director  
Office of Inspection  
and Enforcement

Effective Date: OCT 2 1980  
Bethesda, Maryland



On July 2, 1980, a team of NRC Headquarters representatives went to the Browns Ferry site to gather detailed information on the event and its related considerations. IE Bulletin No. 80-17, "Failure of 76 of 185 Control Rods to Fully Insert During a Scram at a BWR" was issued on July 3, 1980 and requested actions to be taken by all licensees of operating General Electric designed Boiling Water Reactors. Among the actions requested were the following:

- "1. Within 3 days from the date of this Bulletin, perform surveillance tests to verify that there is no significant amount of water in the Scram Discharge Volume (SDV) and associated piping and that the SDV vent valves are operable and vent system is free of obstruction."
  
- "3. At the conclusion of the scram tests and all other scrams, verify that all vent lines in the SDV are functional. Verify that there is no significant amount of water in the SDV and associated piping."
  
- "5. Review and develop surveillance procedures such that scram discharge volume is monitored daily for residue water for 6 days and, if results are acceptable, the interval may be extended to 7 days."

Additional actions applicable to these BWR facilities were requested in Supplement Nos. 1, 2, and 3 to IE Bulletin 80-17; these supplements were issued on July 18, July 22 and August 22, 1980, respectively. Specific actions were requested with regard to the unobstructed venting and draining of the SDV. In particular, Item B.1 of Supplement 1 requested the following:

"B. Actions to be Taken by BWR Licensees and Completed by September 1, 1980:

- 1) Install a system to continuously monitor water levels in all scram discharge volumes. Continuous recording and alarm features must be included in the design. Consideration should be given to use of diverse level sensors in this (these) system(s). The design installed should represent the design with the highest level of reliability compatible with completion of installation by September 1, 1980. Provide a written description of the system design to the NRC Regional Office.

If installation by September 1, 1980 is not possible, by August 15, 1980, submit to the NRC Regional Office:

- 1) Documentation in detail why the installation cannot be completed by September 1, 1980.
- 2) A commitment to a firm schedule for installation.
- 3) A commitment to equipment changes and/or surveillance requirements in addition to those now in effect that will provide adequate assurance of SDV operability in the interim until installation is completed."

The licensee responded to this request in Supplement 1 to the Bulletin by letter dated August 18, 1980. This response was unacceptable on the basis that it did not provide adequate assurance that the licensee could maintain scram capability at all times during current operation. The Bulletin and its Supplements were issued to provide such assurance during an interim period of operation until an ultimate resolution is achieved by changes in system design and operating procedures.

In view of the foregoing considerations the NRC staff has concluded that particular criteria must be satisfied in order to provide adequate justification for continued operation. Criteria applicable to the licensee's facilities are set forth in Section III. These criteria reflect NRC judgement that continuous monitoring of the SDV with appropriate indication and alarm in the control room is to be completed no later than specified. Until the installation is complete and operable, surveillance checks of the SDV shall continue at 30 minute intervals whenever the reactor is critical.

These matters were the subject of the discussions between NRC and licensee representative Mr. J. Calhoun on September 10, 1980. The discussions provided the information on which the licensee made further commitments to satisfy the requests of the Bulletin and its supplements. These commitments were documented by letter dated September 19, 1980 from the licensee. In view of the importance of these commitments to safe operation of the facility, it is appropriate to confirm the licensee's commitments by order.

III

Accordingly, pursuant to the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, IT IS HEREBY ORDERED, EFFECTIVE IMMEDIATELY, THAT:

1. By December 22, 1980, the licensee shall:
  - a) Install and make operable a system to continuously monitor water levels in all scram discharge volumes (SDV).
  - b) The installed system shall provide for level-indication, with an associated alarm, in the control room, for each SDV. This equipment shall provide sufficient information to the reactor operator such that if water accumulates in either SDV the decision about actions to be taken can be made in a timely fashion from the control room.
2. The licensee shall submit a report to the Director, Reactor Operations Inspection, Washington, D.C. 20555 and to the Director of the appropriate Regional Office, confirming installation of the continuous water level monitoring system, with provisions for indication and alarm in the control room, at the time the installation is completed.

IV

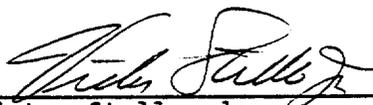
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If a hearing is held, the issue to be considered at such a hearing shall be whether the licensee should perform the actions required in Part III of this Order in accordance with the schedule stated therein.

Operation of the facility on terms consistent with this Order is not stayed by the pendency of any proceeding on the Order.

FOR THE NUCLEAR REGULATORY COMMISSION

  
\_\_\_\_\_  
Victor Stello, Jr.  
Director  
Office of Inspection  
and Enforcement

Effective Date: OCT 9 1980  
Bethesda, Maryland

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of ) Docket No.: 50-296  
 )  
Tennessee Valley Authority )  
(Browns Ferry Unit No. 3) )

CONFIRMATORY ORDER

I

Tennessee Valley Authority (the "licensee") is the holder of Facility Operating License No. DPR-68 (the "license") with an expiration date of July 31, 2007 which authorizes operation of the Browns Ferry Unit No. 3 (the "facility").

II

On June 28, 1980, during a routine shutdown of the Browns Ferry Nuclear Power Station Unit 3 reactor, a manual scram from approximately 35% power failed to insert all of the control rods. Three scrams were initiated over a period of about 14 minutes to achieve full insertion of all of the control rods.

The control rods which failed to insert were all located on the east side of the reactor core. Investigation indicated that this was caused by water unknowingly accumulating in the east side scram discharge volume (SDV). This accumulation reduced the available free volume for scram water discharge and inhibited control rod insertion. It is believed that an obstructed vent and/or drain caused the accumulation of water. This accumulation of water was not detected by the reactor protection system because it stayed within the SDV headers and did not drain to the scram discharge instrumented volume (SDIV).

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- "3. At the conclusion of the scram tests and all other scrams, verify that all vent lines in the SDV are functional. Verify that there is no significant amount of water in the SDV and associated piping."
  
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"B. Actions to be Taken by BWR Licensees and Completed by September 1, 1980:

- 1) Install a system to continuously monitor water levels in all scram discharge volumes. Continuous recording and alarm features must be included in the design. Consideration should be given to use of diverse level sensors in this (these) system(s). The design installed should represent the design with the highest level of reliability compatible with completion of installation by September 1, 1980. Provide a written description of the system design to the NRC Regional Office.

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III

Accordingly, pursuant to the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, IT IS HEREBY ORDERED, EFFECTIVE IMMEDIATELY, THAT:

1. Prior to restart following the refueling outage scheduled for the end of October 1980, the Licensee shall:
  - a) Install and make operable a system to continuously monitor water levels in all SDV's.
  - b) The installed system shall provide for level-indication, with an associated alarm, in the control room, for each SDV. This equipment shall provide sufficient information to the reactor operator such that if water accumulates in either SDV the decision about actions to be taken can be made in a timely fashion from the control room.
2. The licensee shall submit a report to the Director, Reactor Operations Inspection, Washington, D.C. 20555 and to the Director of the appropriate Regional Office, confirming installation of the continuous water level monitoring system, with provisions for indication and alarm in the control room, at the time the installation is completed.

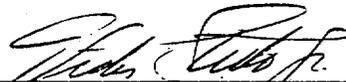
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If a hearing is held, the issue to be considered at such a hearing shall be whether the licensee should perform the actions required in Part III of this Order in accordance with the schedule stated therein.

Operation of the facility on terms consistent with this Order is not stayed by the pendency of any proceeding on the Order.

FOR THE NUCLEAR REGULATORY COMMISSION



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Victor Stello, Jr.  
Director  
Office of Inspection  
and Enforcement

Effective Date: OCT 2 1980  
Bethesda, Maryland