



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
631 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

Docket Nos. 50-277  
50-278

June 12, 1980

Philadelphia Electric Company  
ATTN: Mr. S. L. Daltroff  
Vice President  
Electric Production  
2301 Market Street  
Philadelphia, Pennsylvania 19101

Gentlemen:

The enclosed IE Bulletin No. 80-14, "Degradation of Scram Discharge Volume Capability," is forwarded to you for action. A written response is required.

In order to assist the NRC in evaluating the value/impact of each Bulletin on licensees, it would be helpful if you would provide an estimate of the manpower expended in conduct of the review and preparation of the report(s) required by the Bulletin. Please estimate separately the manpower associated with corrective actions necessary following identification of problems through the Bulletin.

If you desire additional information regarding this matter, please contact this office.

Sincerely,

Boyce H. Grier  
Director

Enclosures:

1. IE Bulletin No. 80-14
2. List of Recently Issued IE Bulletins

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ENCLOSURE 1

SSINS No.: 6820  
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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT  
WASHINGTON, D.C. 20555

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June 12, 1980

IE Bulletin No. 80-14  
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DEGRADATION OF BWR SCRAM DISCHARGE VOLUME CAPABILITY

During our review of BWR operating experience, two events have raised concern on operations related to the control rod drive system scram discharge volume (SDV).

Description of Circumstances:

At Hatch Unit 1, on June 13, 1979, while performing surveillance to functionally test SDV high level switches, two switches (C11-N013A, B) were found to be inoperable. Redundant switches (C11-N013 C, D) were operable. The reactor was in the refuel mode and these switches had been modified prior to this occurrence. Inspection of the inoperable level switches revealed that the float rod was bent and binding against the side of the float chamber on both switches. The licensee believes that the float rods were bent during or prior to initial installation and that metal particles from the modification caused binding of the float. (LER 79-038)

Brunswick Unit 1 reported that slow closure of the SDV drain valve during a reactor scram on October 19, 1979 apparently caused a water hammer event which damaged several pipe supports on the SDV drain line. Drain valve closure time was approximately five minutes due to a faulty solenoid controlling air supply to the valve. The damaged pipe supports were repaired but repair parts for the faulty solenoid were not available. To prevent possible damage from a scram, the unit started up with the SDV vent and drain valves closed except for periodic draining. During this mode of operation the reactor scrammed from high level in the SDV, without prior actuation of either the high level alarm or rod block switch. Subsequent inspection revealed that the float ball on the rod block switch was crushed and the float ball stem on the high level alarm switch was bent such that the switches would not operate. The water hammer event discussed above was the reported cause of failure of these two switch assemblies. (LER 79-74)

As a result of these events and related anticipated transients without scram (ATWS) studies, concern arises that the SDV function may be degraded by the undetected presence of fluid in the SDV. The second event is significant in that it indicates the potential for a common cause failure (faulty solenoid) to result in operation of the SDV in a manner which could defeat both the level switch function and the SDV draining function. The ATWS generic studies (NUREG 0460) have led the staff to propose, among other requirements, improvements in the SDV designs to reduce susceptibility to common cause failures. By separate correspondence, the staff will provide example Technical Specifications related to the action items discussed below.

A. GE BWR's With an Operating License

The following actions are to be taken by licensees of GE designed BWR facilities with an operating license:

1. Review plant records for instances of degradation of any SDV level switch which was or may have been caused by a damaged or bent float assembly. Identify the cause and corrective action for each instance.
2. Review plant records for instances of degradation of SDV vent and drain valve operability. Provide the closure times required and typically observed for these valves and the basis for the required closing times. Identify the cause and corrective action for each instance of degradation.
3. By procedures, require that the SDV vent and drain valves be normally operable, open and periodically tested. If these valves are not operable or are closed for more than 1 hour in any 24 hour period during operation, the reason shall be logged and the NRC notified within 24 hours (Prompt Notification).
4. Review instances in which water hammer or damage which may have been caused by water hammer has occurred in SDV related piping. Identify the cause and corrective action for each instance.
5. Review surveillance procedures to ensure that degradation of any SDV level switch due to a damaged float or other cause would be detected and that inoperability from any cause would be reported to the NRC.
6. If no functional test or inspection which would detect degradation of each SDV level switch has been performed during the past 3 months, make provisions to perform an inspection and functional test of all SDV level switch assemblies at the next reactor shutdown of greater than 48 hours duration.

B. Reporting Requirements

The action taken in response to the items in Part A shall be completed and a written report on the results submitted to the NRC within 45 days from the date of this Bulletin.

This report should be submitted to the Director of the appropriate NRC Regional Office and a copy should be forwarded to the NRC Office of Inspection and Enforcement, Division of Reactor Operations Inspection, Washington, D.C. 20555.

Approved by GAO, B180225 (R0072); clearance expires 7-31-80. Approval was given under a blanket clearance specifically for identified generic problems.

RECENTLY ISSUED  
IE BULLETINS

| Bulletin | Subject                                                                                                             | Date Issued | Issued To No.                                                                            |
|----------|---------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------|
| 80-13    | Cracking In Core Spray Spargers                                                                                     | 5/12/80     | All BWR's with an OL                                                                     |
| 80-12    | Decay Heat Removal System Operability                                                                               | 5/9/80      | Each PWR with an OL                                                                      |
| 80-11    | Masonry Wall Design                                                                                                 | 5/8/80      | All power reactor facilities with an OL, except Trojan                                   |
| 80-10    | Contamination of Nonradioactive System and Resulting Potential for Unmonitored, Uncontrolled Release to Environment | 5/6/80      | All power reactor facilities with an OL or CP                                            |
| 80-09    | Hydramotor Actuator Deficiencies                                                                                    | 4/17/80     | All power reactor operating facilities and holders of power reactor construction permits |
| 80-08    | Examination of Containment Liner Penetration Welds                                                                  | 4/7/80      | All power reactors with a CP and/or OL no later than April 7, 1980                       |
| 80-07    | BWR Jet Pump Assembly Failure                                                                                       | 4/4/80      | All GE BWR-3 and BWR-4 facilities with an OL                                             |
| 79-03A   | Longitudinal Weld Defects in ASME SA-312, Type 304 Stainless Steel Pipe                                             | 4/4/80      | All Power Reactor Facilities with an OL or CP                                            |
| 80-06    | Engineered Safety Feature (ESF) Reset Controls                                                                      | 3/13/80     | All power reactor facilities with an OL                                                  |
| 80-05    | Vacuum Condition Resulting In Damage To Chemical Volume Control System (CVCS) Holdup Tanks                          | 3/10/80     | All PWR power reactor facilities OLs and to those with a CP                              |
| 79-01B   | Environmental Qualification of Class IE Equipment                                                                   | 2/29/80     | All power reactor facilities with an OL                                                  |