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Dockets Nos. 50-277
and 50-278

Mr. Edward G. Bauer, Jr.
Vice President and General
Counsel
Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

Dear Mr. Bauer:

In our review of your responses to NUREG-0803, Safety Concerns Associated with Pipe Breaks in BWR Scram Systems, dated December 29, 1981, February 5 and April 12, 1982, for the Peach Bottom Station, Units 2 and 3, we have identified additional information, enclosed, which we will need in order to complete our review.

Each group of questions is prefaced by the originating NRC technical review branch as follows:

ASB - Auxiliary Systems Branch,
AEB - Accident Evaluation Branch,
EQB - Equipment Qualification Branch, and
MTEB - Materials Engineering Branch.

Kindly respond to these requests by October 15, 1982. These requests are unique to the Peach Bottom Station; therefore, no OMB clearance is required.

Sincerely,

*ORIGINAL SIGNED BY
JOHN F. STOLZ*

John F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing

Enclosure:
Request for Additional
Information

cc w/enclosure:
See next page

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ENCLOSURE

ASB 1. Threaded Joint Integrity

In your response[1], you noted that a review of plant specifications revealed that the only threaded joints specified for either Peach Bottom Unit 2 or Unit 3 were those for non-safety related air supply piping (compression fittings) and limited test connections. In addition, you reported that you would conduct a walkdown of the Unit 2 piping during the upcoming refueling outage for Unit 2 to confirm the results of your review and that you would not conduct a similar walkdown of Unit 3 if no threaded joints were revealed in Unit 2.

Provide information showing the location of the limited test connections which are threaded, together with the size of these connections for Unit 2 and 3. In addition, provide a commitment to conduct a similar walkdown of Unit 3 SDV process piping since the walkdown of Unit 2 is apparently intended to ascertain the presence of threaded connections not in accordance with specifications, and the assurance that Unit 2 has been built in accordance with specifications does not provide similar assurance for Unit 3.

Finally, commit to provide us with the results of your walkdown to assure no threaded joints other than those permitted by plant specifications as a result of your walkdown during the February 1982 refueling outage.

ASB 2. HCU-SDV Equipment Procedures Review

In your response[1] you state that the procedures already reviewed "---do not specifically address the maintaining of the scram system boundary integrity as discussed in NUREG-0803[2]. However, it is thought that sufficient steps are taken to assure the postulated problem is avoided." This is a rather vague response to our recommendation that procedures be reviewed in order to eliminate possible errors leading to a defeat of SDV integrity at a time when SDV integrity is required.

Verify that plant procedures for surveillance, maintenance, inspection, and modification which have the potential for defeating SDV integrity at a time when SDV integrity is required have been reviewed to assure that proper procedural controls are maintained in all cases as to prevent a breach of SDV integrity. Provide a list of any procedures which have to be modified to prevent a breach of SDV integrity together with a schedule for such modifications.

ASB 3. Improvement of Procedures

Your response[1] noted that you would support a preliminary study by the BWR Owners Group (BWROG) to determine the best approach to carry out the guidance of NUREG-0803[2] in addressing scram system pipe breaks and that the BWROG will then determine whether to initiate specific actions to modify the Emergency Procedure Guidelines, accordingly. You expected the BWROG study to be completed during the first quarter of 1982. Based upon the current status of this study, provide us with a schedule to provide emergency procedures to address a break in the scram discharge volume piping, together with summaries of the procedures for our review.

ASB 4. Verify that the temperature trip monitors for the high pressure coolant injection (HPCI) and reactor core isolation cooling (RCIC) pump turbines are located sufficiently remote from the scram system and SDV to prevent initiation of turbine trip signals because of high ambient temperature resulting from the postulated scram system pipe break. Your analysis should account for the potential leakage path from the pipe break and air flow within the reactor building with normal ventilation systems in operation in order to determine if the temperature at the location of these monitors increases to the point where trip is initiated. (Refer to NUREG-0803 Section 4.3.1.3).

MEB 5. Seismic Design Verification

In your response to NUREG-0803[1] it was stated that the SDV piping has been reviewed to verify that it has been designed for seismic loadings as part of IE Bulletin 79-14. Because IE Bulletin 79-14 does not provide coverage of small diameter piping (less than 2 1/2 inches nominal pipe size), you are requested to verify that for small diameter piping in the SDV system:

a. the piping and supports have been designed for seismic loadings, and

b. the actual piping and support installation have been verified to assure the validity of the seismic analysis.

AEB 6. Limit of Coolant Iodine Concentration to Standard Technical Specification Valve

The radiological consequences of a scram discharge volume failure are analyzed generically in NUREG-0803 with respect to onsite occupational exposure to workers entering the scram discharge volume area, as well as offsite doses, and were found to be within the relevant guidelines for plants with General Electric Standard Technical Specifications

(GE STS) for reactor coolant iodine concentration; while worker exposure and offsite consequences were found to exceed the guidelines for coolant iodine technical specifications similar to Browns Ferry.

We note that you have neither proposed to adopt the General Electric Standard Technical Specifications (GE STS) for reactor coolant iodine activity and surveillance requirements, nor calculated occupational or offsite dose consequences for the scram discharge volume break, using your technical specifications in the analysis. Also, we find that you have not provided clear evidence to provide that the probability of the reactor coolant iodine concentration exceeding the GE STS is 0.001 per reactor year or less. As noted on p. 5-5 of NUREG-0803, "Generic Safety Evaluation Report Regarding Integrity of BWR Scram System Piping," 1981, a scram discharge volume break which causes a rupture of the blow-out panels may result in excessive offsite doses in addition to causing an exposure problem for workers (for instance, those workers who might enter the scram discharge volume vicinity to manually close valves). Therefore, you should either: 1) propose GE STS for reactor coolant iodine activity, or 2) provide us with an evaluation of radiological dose consequences, using calculative methods described in NUREG-0803, and demonstrate that the doses from this fission product release do not exceed occupational or offsite dose guidelines. The assumptions used should include the proposed or existing technical specifications on reactor coolant iodine concentration and an iodine spike caused by the accident.

EQB 7. Equipment Qualification

a. Identify all systems and equipment that would be used to detect a break and/or leak in the SDV system and state that this equipment is, or provide a commitment that it will be i) included in the environmental qualification program established in response to IE Bulletin (IEB) 79-01B, and ii) qualified for service either in a 212°F and 100% humidity environment, or in a plant specific SDV break environment.

b. Identify all systems and equipment needed for the prompt depressurization function and all emergency systems and equipment, i.e, systems and equipment needed for mitigation of an SDV system pipe break, safe shutdown of the plant, and long-term core cooling.

State that this equipment is, or provide a commitment that it will be i) included in the environmental qualification program established in response to IEB 79-01B, and ii) qualified for service either in a 212°F and 100% humidity environment, or a plant specific SDV break environment.

c. Identify any emergency systems and equipment that could be sprayed with water from dripping or splattering of overflow leakage down open stairwells following a break in the SDV system, and state that this equipment is, or provide a commitment that it will be i) included in the environmental qualification program established in response to IEB 79-01B, and ii) designed to, or qualified to, operated with water impingement.

d. Identify all systems and equipment needed for mitigation of an SDV system pipe break that could be wet down from leakage through equipment hatches following the break, and state that this equipment is, or provide a commitment that it will be i) included in the environmental qualification program established in response to IEB 79-01B, and ii) qualified for wet down by 212°F water.

e. If any equipment needed i) to detect a break and/or leak in the SDV system, ii) for mitigation of an SDV system pipe break, iii) for safe shutdown of the plant and iv) for long-term core cooling is not qualified for service in an environment that could exist following a break in the SDV system, provide justification for interim operation pending qualification of the equipment or replacement with qualified equipment.

MTEB 8. Periodic Inservice Inspection and Surveillance for the SDV System

You made the following statement(1) concerning the periodic inservice inspection and surveillance of the Scram Discharge Volume (SDV) System:

> "The NUREG recommends that the SDV piping should, as a minimum, be subjected to the ASME Section XI Inservice Inspection (ISI)requirements for Class 2 piping. We shall inspect the piping on Unit 3 equivalent to Class 2 piping for ISI purposes. Upon completion of the scheduled modifications on the Unit 2 Scram Discharge System, that piping shall also be treated as equivalent to Class 2."

Later you committed(3) to upgrade the SDV inspection program in accordance with the requirements for Class 1 piping specified in Section XI of the ASME Code.

To evaluate the adequacy of the inservice inspection and surveillance program for the SDV System, the additional information listed below is required.

a. What Code Edition and Addenda of Section XI will be used to perform the required examinations and tests on the SDV System?

b. What are the pipe schedule numbers and diameters and from what materials are the discharge header and instrument volume fabricated?

c. Will any portion of the SDV System subject to exmination be exempted from examination by any of the criteria given in IWB-1220 of Section IX of the ASME Code? If so, please state which portion and the criteria used to establish the exemption.

d. Will any relief from Code recuirements be requested in the inservice inspection program for the SDV System? If so, please state the relief and the basis for requesting it.

References

1. Letter, from S. L. Deltroff (Philadelphia Electric Company) to D. E. Eisenhut (USNRC) dated December 29, 1981 (corrected February 5, 1982).

2. NUREG-0803, "Generic Safety Evaluation Report Regarding Integrity of BWR Scram System Piping," August 1981, USNRC.

3. Letter, from S. L. Deltroff (Philadelphia Electric Company) to D. G. Eisenhut (USNRC), dated April 12, 1982.