



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION SUPPORTING

AMENDMENT NOS. 129 AND 132 TO FACILITY OPERATING

LICENSE NOS. DPR-44 and DPR-56

PHILADELPHIA ELECTRIC COMPANY
PUBLIC SERVICE ELECTRIC AND GAS COMPANY
DELMARVA POWER AND LIGHT COMPANY
ATLANTIC CITY ELECTRIC COMPANY

PEACH BOTTOM ATOMIC POWER STATION, UNIT NOS. 2 AND 3

DOCKET NOS. 50-277 AND 50-278

1.0 INTRODUCTION

By letter dated February 12, 1987 as supplemented on October 20, 1987, Philadelphia Electric Company requested an amendment to Facility Operating License Nos. DPR-44 and DPR-56 for Peach Bottom Atomic Power Station, Unit Nos. 2 and 3. The October 20, 1987 letter transmitted additional requested information and did not change the original application. These amendments would revise the Technical Specifications with changes related to implementation of a Hydrogen Water Chemistry (HWC) program to improve reactor water chemistry and thus to reduce the potential for intergranular stress corrosion cracking. The requested change involves changing the setpoints of the Main Steam Line Radiation Monitors (MSLRMs) from three times normal full power background (NFPB) to 15 times NFPB to support the implementation of hydrogen water chemistry. The MSLRM setpoint change is necessary since the injection of hydrogen into the feedwater radiolytically increases the N-16 volatility, thus, increasing the N-16 activity in the main steam line.

By letters dated May 27 and August 24, 1987, the licensee submitted the safety evaluation for the storage of liquid hydrogen and oxygen and additional information relating to the implementation of hydrogen water chemistry for review and approval. By separate correspondence dated September 22, 1987 the staff provided its evaluation which found the permanent hydrogen water chemistry installation to be acceptable.

2.0 EVALUATION

The main steam line radiation monitors (MSLRMs) provide reactor scram and reactor vessel and primary containment isolation signals when high-activity levels are detected in the main steam lines and serve to limit radioactivity release in the event of fuel failures. Technical Specification (TS) changes are needed to accommodate the expected increase in main steam activity levels (from increased N-16 levels in the steam phase) as a result of hydrogen injection into the primary system.

The licensee has requested Technical Specification changes involving increasing the MSLRM setpoint from three times normal full power background (NFPB) to fifteen times NFPB to support the hydrogen water chemistry program. The Technical Specification changes for Peach Bottom Atomic Power Station Units 2 and 3 are attached and are as follows:

- ° Technical Specification (TS) pages 38, 48, 61, and 90 indicate the proposed change in trip setpoint of the MSLRMs from three times NFPB to 15 times NFPB.
- ° Note 8 of Table 3.2.A, TS page 63 is changed to delete the MSLRM alarm setpoint of 1.5 times NFPB. This permits the alarm setpoint to be adjusted based on operating experience. At the present setpoint of 1.5 times NFPB, the alarm would be on continuously during hydrogen water chemistry operation.
- ° On page 48 of the Technical Specifications, a change has been proposed to correct a discrepancy concerning isolation of the main condenser off-gas line by the air ejector off-gas monitor trip feature. The air ejection off-gas monitors isolation trip features were deleted by Amendment Nos. 102 and 104 for Units 2 and 3 respectively. The proposed change establishes consistency in the Technical Specifications.
- ° For Unit 3, Technical Specification pages 38, 40 and 61 involve proposed change for the deletion of an obsolete note that was used during the now completed Unit 3 hydrogen injection test.
- ° Other Technical Specification proposed changes on pages 37, 38, 61 and 62 are administrative in nature and involve the addition of item numbers to Tables for ease of referencing.

In the event of a Control Rod Drop Accident (CRDA), the MSLRMs detect high radiation levels in the main steam lines and provide signals for reactor scram and Main Steam Isolation Valve (MSIV) closure to reduce the release of fission products to the environment. The proposed MSLRM trip setpoint change from three times NFPB to 15 times NFPB will not affect the radiological consequences of a CRDA. For the proposed setpoint of 15 times NFPB the calculated dose rate at the MSLRM is about 1/4 of that resulting from a CRDA. Therefore, at the proposed setpoint, the radiation levels caused by a CRDA will still isolate the MSIVs and scram the reactor. Although the MSLRMs isolate the MSIVs and scram the reactor, the time required to reach the proposed MSLRM trip setpoint will be increased. However, this delay time in reaching the proposed MSLRM setpoint of 15 times NFPB remains within the 0.5 seconds assumed for the instrument loop response time in the UFSAR as also discussed in further detail in the licensee's letter of October 20, 1987.

In the event of an incident causing minor fuel damage such that radiation levels will not exceed the proposed MSLRM setpoint of 15 times NFPB, the downstream steam jet air ejector radiation detectors would be alarmed. These detectors have a greater sensitivity than the MSLRMs for noble gases because of a two-minute holdup period that allows for decay of N-16. The Peach Bottom Technical Specifications have established gaseous radioactivity release limits. Thus, the proposed MSLRM setpoint change will not result in offsite doses in excess of established release limits.

Therefore, the proposed Technical Specification changes are acceptable.

3.0 ENVIRONMENTAL CONSIDERATIONS

These amendments involve a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement nor environmental assessment need be prepared in connection with the issuance of the amendments.

4.0 CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register (52 FR 42368) on November 4, 1987 and consulted with the Commonwealth of Pennsylvania. No public comments were received. The Commonwealth of Pennsylvania had oral comments regarding the licensee's basis for selecting the revised MSLRM setpoint and on whether the alarm addressed on TS page 63 was being retained. The Commonwealth of Pennsylvania representative discussed these concerns with the licensee and the NRC staff and, on being advised of the earlier tests conducted to determine the setpoint (which were the subject of Amendment No. 106 to the Unit 2 license) and that the alarm is being retained, indicated no objection to the proposed amendments.

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: F. Witt

Dated: March 3, 1988