



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NOS. 68 AND 67 TO FACILITY LICENSE NOS. DPR-33 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 UNITS NOS. 2 AND 3

DOCKETS NOS. 50-277 AND 50-278

1.0 Introduction

By letter dated August 27, 1979, and supplemented by letters dated November 5, 1979, January 30, 1980, February 13, 1980, and March 27, 1980, Philadelphia Electric Company (the licensee) requested amendments to Operating License Nos. DPR-44 and DFR-56 for the Peach Bottom Atomic Power Station, Unit Nos. 2 and 3. The proposed amendments would revise the Technical Specifications to authorize the licensee to:

- A. Replace existing pressure switches that sense drywell and reactor pressures with analog loops and
- B. Modify two reactor water level indication loops to improve the reliability, accuracy, and response time of this instrumentation.

2.0 Discussion

2.1 Analog Loop Installation

The requested revision of the Technical Specification Tables 4.1.1, 4.1.2, 3.2.B, and 4.2.B reflects the planned replacement of existing pressure switches that sense reactor and drywell pressures with analog loops. Each loop will consist of a transmitter, indicator, and trip unit.

A detailed description of the proposed replacement is set forth in a document titled "Modification Description, Replacement of Pressure Switches with Analog Transmitters and Electronic Trip Units at Peach Bottom Atomic Power Station Units 2 and 3" which was attached to the licensee's application and incorporated therein by reference. The modification involves removing one device and substituting other devices to perform the same function. Changes in design bases, protective function, redundancy, trip point, and logic are not involved.

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2.2 The proposed instrument modifications are designed to:

1. Reduce undetected primary sensor element drift due to the utilization of a meter in each primary sensor signal loop;
2. Reduce the frequency of setpoint drift occurrences;
3. Provide indication for each primary sensor which will prove operability of the sensor;
4. Reduce the time Reactor Protection System logic must be in a half-scrum condition to functionally test or calibrate a safety trip;
5. Reduce the functional test and calibration frequency for the primary sensor and to allow calibration of the primary sensor to be performed when the reactor is shut down for refueling.
6. Reduce likelihood of instrument valving errors;
7. Reduce the potential for instrument testing related scrams.

2.2 Modification of Reactor Level Indication Loops

The amendment to the Technical Specifications for Table 4.2.F is being requested to reflect the planned removal of existing reactor water level indication transmitters LITS 2-3-59A and B. They provide analog reactor water level signals to LI 2-3-85A and B and to LI 2-3-85AX and BX through a selector switch. The level transmitters will be removed and their function will be performed by existing channels of level transmitters LT 2-3-72A and B and the auxiliary analog output of trip units LISH 2-3-72A and B. Existing indicators will be replaced with new indicators that are compatible with the auxiliary analog output of the electronic trip units. The modification involves removing two level transmitters and substituting existing instruments to perform the same function. Changes in design basis, function, and redundancy are not involved.

The proposed instrument modifications are designed to:

1. Provide reliability, accuracy, and response time which are better than that of the existing instrumentation;
2. Provide the control room operators with reactor water level position indication from the same level transmitter that initiates the trip function;
3. Reduce likelihood of instrument valving errors.

3.0 Evaluation

The staff has reviewed previously the use of this type of equipment and found that, provided certain interface requirements were satisfied, this equipment is acceptable. Our letter of approval, dated June 27, 1978, is a part of General Electric Topical Report NEDO-21617-A dated December, 1978.

Although the licensee did not reference the General Electric Topical Report, the staff review did not result in the identification of any significant design differences between the equipment offered by General Electric and that used by the licensee. Furthermore, the staff noted that additional qualification testing, beyond that described in NEDO-21617-A, has been performed on the trip relays.

In order to satisfy some concerns about the validity of the reactor building accident response models (that would have to be resolved in order to demonstrate that the power supplies and inverters are qualified for the accident environment), the licensee is moving these units to the cable spreading room where the environment is known to be acceptable.

Based upon our review of the documentation, we conclude that the modifications proposed satisfy the constraints of our prior approval and are, therefore, acceptable. Based on the data submitted, we also concluded that:

1. The reliability, accuracy, and response time of the replacement instrumentation are better than that of the existing instrumentation.
2. Separation Criteria - the separation criteria of the original plant is unchanged. Separation is provided by locating equipment on separate racks and panels and by running cable in separated cable tray or conduit. The power supply used for an instrument channel is dependent on that channel's divisional assignment.
3. Single Failure Criterion - no new single failure events have been created, therefore, no single failure will result in any action not previously evaluated in the FSAR.
4. Qualification - all new equipment has been tested or analyzed to assure that the design environmental conditions and the design basis seismic requirements are met.
5. Testability - means are provided to test the trip units periodically by injecting a signal and observing the trip output. Operability of the analog loop is verified by periodic instrument checks.

4.0 Environmental Consideration

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of the amendments.

5.0 Conclusion

We have concluded based on the considerations discussed above:

1. Because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration;
2. There is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; and
3. Such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: May 5, 1980