

BOSTON EDISON COMPANY
800 BOYLSTON STREET
BOSTON, MASSACHUSETTS 02199

WILLIAM D. HARRINGTON
SENIOR VICE PRESIDENT
NUCLEAR

February 27, 1986
BECO 86-020
Proposed Change 86-03

Mr. John A. Zwolinski, Director
BWR Project Directorate #1
Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

License DPR-35
Docket 50-293

Proposed Technical Specification Change
Analog Trip System

Dear Sir:

Pursuant to 10CFR50.90, Boston Edison Company hereby proposes the attached modification to Appendix A of Operating License No. DPR-35. This change incorporates new minimum calibration and test frequencies for instrument channels being upgraded by installation of an Analog Trip System. In accordance with 10CFR170.22, a check in the amount of one hundred and fifty dollars (\$150.00), for an amendment initiation fee, is enclosed with this letter.

Please contact us if any further information is required.

Very truly yours,

W.D. Harrington

GGW/ns

Attachments
3 signed originals and 37 copies

cc: See next page

Commonwealth of Massachusetts)
County of Suffolk)

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PDR ADOCK 05000293
P PDR

Then personally appeared before me W. D. Harrington, who, being duly sworn, did state that he is Senior Vice President - Nuclear of the Boston Edison Company, the applicant herein, and that he is duly authorized to execute and file the submittal contained herein in the name and on behalf of the Boston Edison Company and that the statements in said submittal are true to the best of his knowledge and belief.

My Commission expires: *April 3, 1992*

Paul S. Whitty
Notary Public

100/990 w/check \$150 #905901

BOSTON EDISON COMPANY

Mr. John A. Zwolinski, Director

Page 2

cc: Mr. Robert M. Hallisey, Director
Radiation Control Program
Massachusetts Dept. of Public Health
150 Tremont Street F-7
Boston, MA 02111

Attachment A

Proposed Technical Specification Change Analog Trip System (ATS)

Reason for Change

An analog trip system (ATS) is currently being installed at Pilgrim Nuclear Power Station (PNPS). This system will be completed during Refuel Outage 7 (RFO #7) in time for use during fuel reload. For this reason, the attached proposed technical specification changes will be required to coincide with the fuel reload.

The modifications will replace mechanically operated pressure and level instruments currently used for the initiation of the Reactor Protection System (RPS) and Emergency Core Cooling System (ECCS). Industry operating experience has shown that due to age and wear, mechanical sensors inherently drift out of tolerance and require frequent maintenance, testing, calibration and repair.

The ATS is an all solid state electronic trip system designed to provide stable and accurate monitoring of certain RPS and ECCS parameters. Changing to this analog system will improve overall sensor accuracy and reliability; i.e., it will reduce the time for the RPS to be in half-scam due to surveillance testing, decreasing the probability of inadvertent plant scrams; reduce the functional test calibration frequencies; and, most important, reduce the radiation exposure to plant personnel.

The ATS only affects the RPS and ECCS at the sensor level and does not affect the existing logic, therefore, the replacement of the mechanical sensors does not alter the requirements for instrument initiation, function, and operability that existed prior to the modification.

The analog trip system is based on a General Electric Licensing Topical Report (NEDO-21617-A) dated December 1978. Justification for relaxation of the calibration frequencies is also provided by this document. However, system design and qualification of components is not dependent solely on NEDO-21617-A. The plant design change (PDC) written to implement this modification lists the following as design governing documents: 10CFR50, Appendix B; 10CFR50, Appendix R; 10CFR50.49; 10CFR50.59; 10CFR21; Reg. Guides 1.29 and 1.75; IEEE 279-1971; 308-1980; 323-1974; 344-1975; 379-1977; 383-1974; and 384-1981.

Proposed Change

The proposed technical specification changes would relax surveillance requirements without reducing system availability, accuracy, and reliability below levels which existed before the ATS modification. As detailed in NEDO-21617-A, this is attributed to lower failure rates and higher accuracy associated with the electronic ATS components, as compared to the mechanical sensors being replaced.

The changes proposed would revise test and calibration frequencies by requiring analog transmitter calibration once per cycle during refuel outages, which reduces "high risk" testing and the possibility of inadvertent reactor scrams.

Calibration of analog trip units will be performed concurrent with functional testing. As stated above, NEDO-21617-A provides justification for the proposed frequencies. It also provides a failure mode and effect analysis and a mean time between failure analysis to determine test/calibration intervals for the ATS instrumentation. Test/calibration intervals are also maintained and can be adjusted by monitoring the observed failure rate history per Figure 4.1.1 currently in Pilgrim Technical Specifications.

A daily instrument check is also requested with this change. This visual comparison of the associated outputs will provide a degree of confidence of system operability that was not provided by the mechanical switches and sensors, in addition a gross failure alarm is provided with the Analog Trip System which annunciates sensor failure.

Attachment B provides the amended pages of the PNPS Technical Specifications.

Safety Considerations

This change does not involve an unresolved safety question as defined in 10CFR50.59. It has been reviewed and approved by the PNPS Operations Review Committee and reviewed by the Nuclear Safety Review and Audit Committee.

Significant Hazards Considerations

It has been determined that this amendment request involves no significant hazards consideration.

Under the Commission's regulations in 10CFR50.92, this means that operation of the facility in accordance with the proposed amendment would not: (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The proposed technical specification changes submitted in support of ATS installation would not involve a significant increase in the probability or consequences of an accident previously evaluated because, as noted above, system reliability and availability would not be reduced below those levels existing prior to ATS installation. Furthermore, the ATS installation does not alter the requirements for instrument initiation, function, and operability which currently apply. For similar reasons, the proposed technical specification changes would not create the possibility of a new or different kind of accident from any accident previously evaluated. The proposed technical specification changes also would not involve a significant reduction in the margin of safety since the reduced surveillance frequencies and a new daily cross check of channels, performed to assure system operability, are consistent with the improved reliability and accuracy of the new ATS components, and again, instrument initiation function and operability requirements are not changed as a result of ATS installation.

On this basis, Boston Edison determined that the proposed amendment does not involve significant hazards considerations.

Schedule of Change

We request that these changes become effective 30 days after receipt of NRC approval. This is to allow adequate time to modify affected procedures and provide training, thereby ensuring proper implementation. We should inform you that these changes will be required prior to fuel reload during RFO #7, which is tentatively scheduled to start September 13, 1986.