



**BOSTON EDISON**

Pilgrim Nuclear Power Station  
Rocky Hill Road  
Plymouth, Massachusetts 02360

10 CFR 50.90

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Senior Vice President -- Nuclear

June 7, 1993  
BECO 93- 072

U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

License DPR-35  
Docket 50-293

Subject: Proposed Change to Technical Specifications:  
Request for Changes Supporting a 24 Month Fuel Cycle

Boston Edison Company (BECO) proposes the attached Technical Specification Change Request to Operating License No. DPR-35 in accordance with 10CFR 50.90.

This request increases the surveillance interval applied to once-per-cycle by substituting 24 months for 18 months in Technical Specification Definition 1.0.V, "Surveillance Interval". This change reflects Pilgrim's adoption of a 24 month refueling cycle in place of its current 18 month cycle, resulting in a maximum interval of up to 30 months when employing the allowable 25% grace period. These changes were evaluated in accordance with the guidance provided in NRC Generic Letter 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle", dated April 2, 1991.

This submittal also results in changes to certain Technical Specification instrumentation surveillance intervals and related instrument calibration frequencies and setpoints. Those instruments currently surveilled once per "operating cycle" or "refueling outage" were analyzed. In some cases no change is required, and these items will be subject to a 24 month interval by Definition 1.0.V without textual change. In some cases, justification of an extended surveillance interval was not obtained and "once/cycle" is changed to the currently-allowed 18 months. In other cases, the 24 month interval required setpoint changes to ensure the extended interval would not result in exceeding an instrument's acceptable setpoint tolerance.

This submittal also changes the frequency of the calibration/functional test for the analog trip system from 1 month to 3 months. This is consistent with the setpoint calculations and Note 1 to Pilgrim's Technical Specification Tables 4.2.A through 4.2.G.

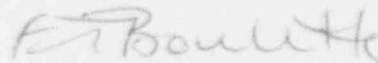
This is the first of three planned change requests supporting the adoption of a 24 month refueling cycle at Pilgrim. Therefore, we request the NRC review this proposed change but withhold issuing the approved changes until the NRC has reviewed and approved all of the change submittals associated with the adoption of a 24 month refueling cycle. To maximize the benefits of this proposed change, Boston Edison requests NRC approval of this amendment by December 31, 1993 or earlier to support closure of the

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planning window for Mid-Cycle Outage #10 (scheduled to commence in the Spring of 1994).

Information supporting this change request is contained in Attachment A to this letter, the proposed replacement pages are contained in Attachment B, marked-up pages are contained in Attachment C and a sample calculation is contained in Attachment D.



E.T. Boulette  
Senior Vice President - Nuclear

Commonwealth of Massachusetts)  
County of Plymouth )

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

My commission expires: October 5, 1995  
DATE

  
NOTARY PUBLIC

Attachments: (A) Description of Proposed Change  
(B) Amended Technical Specification Pages  
(C) Marked-up Pages from Current Technical Specifications  
(D) Sample Calculation

1 signed original and 37 copies

ETB/PMK/nas/24MONTH

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Attachment A to BECo Letter 93-072

DESCRIPTION OF PROPOSED CHANGES

A. Description of Change

This 24 Month Technical Specification Change will allow BECo to change existing plant surveillance intervals and in some cases setpoints to accommodate a 24-month fuel cycle. The proposed change to surveillance intervals and system setpoints have been analyzed in accordance with the guidance provided in NRC Letter 91-04.

This change requires that Technical Specifications specifying 18-month surveillance intervals be changed to reflect that these surveillances are now to be performed once per refueling interval. The frequency for the interval would then be changed from 18 months to "at least once every 24 months." This would extend the time limit for completing these surveillances from 22.5 months ( $18 \times 1.25$ ) to 30 months ( $24 \times 1.25$ ).

Also, the frequency of the calibration/functional test for the analog trip system will be changed from 1 month to 3 months. This is consistent with the setpoint calculations and Note 1 of the PNPS Technical Specification Tables 4.1.1 and 4.2.A through 4.2.G.

This proposed change affects Definitions 1.0.P and 1.0.V; Technical Specification Sections 3.1, 4.1, 3.2, 4.2; Tables 3.1.1, 4.1.1, 4.1.2, 3.2.A, 3.2.B, 3.2.G, and notes to the subject Tables.

In conjunction with the setpoint evaluations, BECo has reviewed the effects of increased calibration intervals on instrument drift. Based on that review BECo has developed setpoint calculations that provide a basis and justification for the proposed changes.

Proposed changes to the technical specification are identified by vertical bars in the margin of the page.

B. Reason for Proposed Change

The proposed changes are requested to support changing the fuel cycle at Pilgrim from 18 to 24 months. This is reflected in the change to Definition 1.0.V, "Surveillance Interval". Specific changes are also made to support the Definition change.

These specific changes result from analyses performed in accordance with Generic Letter 91-04. In some cases the analyses demonstrated that instruments currently surveilled once/cycle or at refueling can remain at those intervals without a change in the Technical Specification text. Some instrument surveillance intervals will be maintained at the current 18 months. Others will require a setpoint change to ensure they perform their function over the extended interval.

C. Safety Discussion

The adjustment of specific setpoints within the RPS and PCIS systems and the changing of certain system setpoints has no influence or impact on a Design Basis Accident occurrence. Each Design Basis Transient and Accident analysis was examined via the evaluation of the cycle dependent parameters of these systems. These evaluations are reflected in the setpoint calculations.

The increase in the BECo fuel cycle will not involve an increase in the probability or consequences of an accident previously evaluated. The plant will continue to operate within the limits specified in the Core Operating Limits Report (COLR) and to take the same actions if setpoint limits are exceeded. Any setpoints altered as part of this modification are done so in accordance with the guidance provided in NRC Generic Letter 91-04.

The proposed changes to the PNPS technical specifications will have no affect on plant safety since they only serve to extend surveillance intervals while in no way affecting the intended function or performance of any safety systems.

This is an administrative change in that it requires no active components to be added and no existing components to be removed. As such, no new modes of safety-related equipment failure are introduced that could result in a type of failure different from those previously evaluated. The setpoint calculations demonstrate the recalibration of the applicable instruments does not effect the intended safety function of the systems.

The setpoint calculations provide a reliable basis for RPS and PCIS setpoint changes to accommodate a 24-month fuel cycle. Several calculations demonstrated sufficient margin between the calculated and the implemented values. In these cases, a setpoint change is not necessary. Other calculations resulted in reduced margin, that is, calculated values were more conservative than actual values. In these cases, a change in the setpoint value is proposed to support a 24 month fuel cycle.

The process and methodology for determining setpoint values is briefly described below and a detailed technical approach is provided in the setpoint calculations. Note that in all cases, plant margin of safety is either increased or unchanged as a result of these evaluations.

The calculations utilized existing analytical limits as bounding values for the setpoint analyses. As found/as-left historical instrument calibration data were statistically analyzed to calculate 95/95% probability and confidence level values. These values were then used in the setpoint calculations. The value determined in this process was considered to include the effects of measurement and test equipment (M&TE), reference or basic component accuracy and other parameters as well as component drift. The rack and sensor setting tolerances (St and Ret) were retained. This approach is consistent with the proposed Instrument Society of America (ISA) Recommended Practice.

The 95/95% probability and confidence level values were statistically analyzed to determine if the data sets were normal or bounded by a normal curve. Histograms, scatter plots and Systat printouts were included as a graphical representation of the analysis.

Many calculations covered redundant loops. Where individual loop values differed, the values were compared and the worst case value was used for conservatism. If a loop was required to function during one or more accident scenarios, the uncertainty effects due to each postulated accident were calculated and compared and the single worst accident effects were used in calculating total loop uncertainty. The individual switch safety function determined if the loop must function during an accident scenario.

All uncertainties identified in the calculations were individually evaluated to determine whether they were random or biases. In the context of instrument uncertainty, it is accepted within the industry that random uncertainties are those uncertainties that a manufacturer specifies as having a  $\pm$  magnitude. Random uncertainties were combined using the root sum of the squares (RSS) technique. Biases were expressed with either a + or a - sign and were added together separately according to sign. Individual component error terms which contained both a bias and a random value (for example,  $-0.95 \pm 0.5$  inches) were split up so that the random part ( $\pm 0.5$ ) was combined with other component error terms by the RSS method and the biases ( $-0.95$ ) were added to other component bias terms of the same sign. Both random and bias terms were added together to determine Total Loop Uncertainty (TLU). A random or bias term can also be further classified as being dependent or independent. Two error terms are classified as dependent if they possess a significant correlation, for whatever cause, known or unknown. Instrument proximity or physical connections alone do not cause dependency because the sign of the error term is determined solely by that instrument's measured response to the stimulus (temperature, pressure, etc.) Dependent errors were summed algebraically to form independent errors.

#### Safety Evaluation and Determination of No Significant Hazard Considerations

The Code of Federal Regulations (10CFR50.91) requires licensees requesting an amendment to provide an analysis, using the standards in 10CFR50.92, to determine whether a significant hazards consideration exists. The following analysis is provided in accordance with 10CFR50.91 and 10CFR50.92 for the proposed amendment to allow extending Pilgrim's fuel cycle from 18 months to 24 months.

1. The operation of Pilgrim Station in accordance with the proposed amendment will not involve a significant increase in the probability or consequences of an accident previously identified.

The proposed modifications involve a change in the surveillance testing intervals to facilitate the change in Pilgrim's refueling interval from 18 months to 24 months. The proposed changes do not impact design or functional requirements of the associated systems. That is, the proposed changes do not degrade the performance or increase the challenges of any associated safety systems assumed to function in the accident analyses. The proposed changes do not impact the surveillance requirements themselves nor the way the surveillances are performed. Additionally, the proposed Technical Specification changes do not introduce any new accident initiators since no accidents previously evaluated have, as their initiators, anything related to the change in the frequency of surveillance testing. Also, the proposed Technical Specification changes do not affect the availability of equipment or systems required to mitigate the consequences of an accident or the availability of redundant systems or equipment. The review of surveillance testing conducted in accordance with guidance provided in Generic Letter 91-04 indicates there is no evidence that would invalidate the above conclusions. Therefore, the proposed change does not significantly increase the probability or consequences of an accident previously evaluated.

2. The operation of Pilgrim Station in accordance with the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously analyzed.

The proposed Technical Specification changes involve a change in the surveillance testing intervals to facilitate the change in Pilgrim's refueling cycle from 18 months to 24 months. The proposed Technical Specification changes do not introduce any failure mechanisms of a different type than those previously evaluated since there are no physical changes being made to the facility except setpoint changes that have been evaluated and will be performed using approved procedures under the control of our Quality Assurance program. In addition, the surveillance test requirements and the way surveillance tests are performed will remain unchanged. Since the intended operation and function of the analyzed systems do not change as a result of the setpoint analysis, no new initiators were introduced which are capable of initiating an accident that would render these systems unable to provide their required protection. Furthermore, a review of surveillance test results conducted in accordance with guidance provided in Generic Letter 91-04 indicates there is no evidence that would invalidate the above conclusions. Therefore, the proposed Technical Specification changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The operation of Pilgrim Station in accordance with the proposed amendment will not involve a significant reduction in the margin of safety.

Although the proposed Technical Specification changes will result in an increase in the interval between surveillance tests, the impact on Pilgrim's equipment is small. The proposed changes will either increase the plant safety margin or retain the existing margin. There is no evidence this change would significantly impact the availability of the affected systems. Therefore, the assumptions in the licensing basis are not impacted, and the proposed Technical Specification changes do not significantly reduce a margin of safety.

This proposed change has been reviewed and recommended for approval by the Operations Review Committee and reviewed by the Nuclear Safety Review and Audit Committee.

#### Schedule of Change

This is the first of three planned change requests supporting the adoption of a 24 month refueling cycle at Pilgrim. Therefore, we request the NRC review this proposed change but withhold issuing the approved changes until the NRC has reviewed and approved all the changes associated with the adoption of a 24 month refueling cycle.