

**Boston Edison**

Pilgrim Nuclear Power Station  
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**L. J. Olivier**

Vice President Nuclear Operations  
and Station Director

BECo Ltr. #94- 102

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

SEP 9 1994

Docket No. 50-293  
License No. DPR-35

**Boston Edison Company Response to  
Generic Letter 94-02: "Long Term Solutions and  
Upgrade of Interim Operating Recommendations for  
Thermal-Hydraulic Instabilities in Boiling Water Reactors"**

- References:
- 1) Letter, L.A. England to M.J. Virgilio, "BWR Owners' Group Guidelines for Stability Interim Corrective Action," June 6, 1994
  - 2) Letter, A.Thadani (NRC) to L.A. England (BWROG), "Acceptance for Referencing of Topical Reports NEDO-31960 and NEDO-31960, Supplement 1, "BWR Owners' Group Long-Term Stability Solutions Licensing Methodology" dated July 12, 1993

Action Item 1 of Generic Letter 94-02 requested Boston Edison Company (BECo) to review operating procedures and operator training programs and to modify them, as appropriate, to strengthen administrative provisions intended to avoid power oscillations or to detect and suppress them if they occur.

BECo has implemented the Interim Corrective Actions (ICAs) specified in NRC Bulletin 88-07, Supplement 1, and, in addition, has supported the Boiling Water Reactor Owners Group (BWROG) effort to develop improved guidelines for the ICAs to better address startup and low power maneuvering conditions. It is our understanding, based on a review of these guidelines (Reference 1), the NRC will accept the improved BWR Owners' Group guidelines as sufficient and appropriate response to requested actions 1.a and 1.b of Generic Letter 94-02.

It should be noted the BWR Owners' Group Guidelines (Reference 1) are consistent with, but more restrictive than, the ICAs which were previously implemented at Pilgrim Nuclear Power Station (PNPS) as a result of the NRC Bulletin 88-07, Supplement 1 requirements. The original regions defined in the 1988 BWROG ICAs and included in the NRC Bulletin 88-07, Supplement 1, were based on stability test and events known at the time. Subsequent work identified a sensitivity to reactor power shape and/or feedwater temperature conditions.

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Because of this, the Reference 1 guidelines incorporates an expanded stability region and power distribution control definition to strengthen the oscillation prevention feature. This, in conjunction with the detection and suppression provisions of the guidelines, provides a higher degree of protection against unacceptable power oscillations.

Within the design and license constraints of PNPS, BECo plans to modify, where necessary, operating procedures and operator training such that they are consistent with, or more conservative than, the BWROG guidelines in Reference 1. The proposed procedure changes and training will be implemented coincident with startup from RFO #10. RFO 10 is currently scheduled to start April 1, 1995.

Because the guidelines are intended for use until replaced by a stability long-term solution, modifications to the PNPS Technical Specifications are not appropriate. The Reference 1 guidelines and resulting plant operating procedure and operator training modifications are intended for use only until the stability long-term solution is implemented. Beyond this, all appropriate procedures and training will be specified by the long-term solution implemented at PNPS.

Pursuant to requested action number 2 of NRC Generic Letter 94-02, BECo plans for implementing a long-term solution to the reactor coupled neutronic/thermal-hydraulic stability issue are provided below.

The NRC requirement for stability long-term solutions to ensure compliance with General Design Criteria 10 and 12 of 10CFR50 was presented in NRC Bulletin 88-07 Supplement 1 (December 30, 1988). The Bulletin acknowledged that the NRC was working with the BWR Owners' Group (BWROG) to develop generic approaches to resolve the reactor stability issue. The resulting BWROG efforts have lead to the solution concepts and supporting methodology described in NEDO-31960 "BWR Owners' Group Long-Term Stability Solutions Licensing Methodology" (Reference 2.), and NEDO-32339 "Reactor Stability Long-Term Solution: Enhanced Option I-A".

BECo is proceeding with the BWROG long-term solution Enhanced Option I-A, described in NEDO-32339. BECo is participating with other utilities under a BWROG program to conduct initial application activities and has contracted with the General Electric Company (GE) to develop the hardware/software design. Recommendations for Technical Specification changes are provided as part of this BWROG program. A plant specific version of these Technical Specification changes will be incorporated at PNPS as part of the Enhanced Option I-A plant modification. Implementation of the Enhanced Option I-A stability long-term solution plan is contingent upon NRC acceptance of the BWROG methodology submittal (NEDO-32339) and the BECo/GE hardware and software submittals.

The implementation schedule is based on an NRC review of six months for plant specific submittals. Assuming the joint development activities and NRC acceptance is completed as scheduled, it is BECo's present objective to have the Enhanced Option I-A stability solution installed and operational at PNPS by the end of 1997. The initial PNPS specific schedule of milestones is provided in Enclosure 1. Plans and schedules for PNPS implementation will be updated as required by the PNPS facility operating license DPR-35, Section 3.H, "Long Term Program" (LTP).

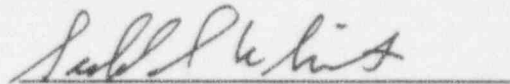
BECO is also following the development of BWROG long-term solution Option 3 described in NEDO 31960 and NEDO 31960 Supplement 1. Option 3 offers significant operational advantages over Option 1A, however, uncertainties associated with Option 3 preclude us from committing to it at this time. Accordingly, we have opted to proceed with Option 1A. If in the future Option 3 proves to be a viable alternative we will update you via the Long Term Program.

  
L. J. Olivier

Commonwealth of Massachusetts)  
Country of Plymouth)

Then personally appeared before me, L. J. Olivier, who being duly sworn, did state that he is Vice President - Nuclear Operations and Station Director 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: MAR 4 - 1999



GERALD G. WHITNEY, Notary Public  
My Commission Expires March 4, 1999

ETB/GGW/Rap94/GL94\_02

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Enclosure 1

BECo Response to GL 94-02

Enhanced Option 1-A Stability Program  
Design & Licensing Activities

Proposed  
PNPS/NRC Milestones

Submit PNPS Specific Power/Flow Map Region Boundaries to NRC for Review and Approval	PNPS Schedule	3rd Qtr /1995
NRC Approval of Submitted Region Boundaries	NRC Schedule	2nd Qtr /1996
Submit PNPS Specific Technical Specification Changes for Option 1-A Modifications	PNPS Schedule	3rd Qtr /1996
NRC Approval of Technical Specifications	NRC Schedule	3rd Qtr /1997
Option 1-A Modifications Implemented at PNPS	PNPS Schedule	4th Qtr /1997