



A PECO Energy/British Energy Company

Michael T. Coyle  
Vice President

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**Clinton Power Station**

P.O. Box 678  
Clinton, IL 61727  
Phone: 217 935-8881 Ext. 4161

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U. S. Nuclear Regulatory Commission  
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Subject: Revision to the Clinton Power Station Implementation  
Schedule for the Resolution to Generic Letter (GL) 94-02, "Long-  
Term Solution and Upgrade of Interim Operating Recommendation  
for Thermal-Hydraulic Instabilities in Boiling Water Reactor"

- References:
1. NRC Generic Letter (GL) 94-02: "Long-Term Solutions and Upgrade of Interim Operating Recommendations for Thermal-Hydraulic Instabilities in Boiling Water Reactors"
  2. Letter U-602337, Illinois Power's (IP's) Response to GL 94-02, "Long-Term Solutions and Upgrade of Interim Operating Recommendations for Thermal-Hydraulic Instabilities in Boiling Water Reactors," dated September 2, 1994
  3. NEDO-31960-A, "BWR Owners' Group Long-Term Stability Solutions Licensing Methodology," dated November 1995
  4. Asea Brown Boveri (ABB) letter LD-99-036, "Report of a Defect Pursuant to 10 CFR 21 Concerning ABB Oscillation Power Range Monitor for BWRs," to the NRC dated June 29, 1999

Dear Madam or Sir:

This letter provides a revised response to NRC Generic Letter (GL) 94-02 (Reference 1) for Clinton Power Station (CPS) with regard to the CPS plan for placing into operation a long-term corrective action for thermal-hydraulic instabilities. Due to equipment problems that have been experienced with the system installed for this purpose, the scheduled date

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for placing the reactor scram capability associated with the system into service is being deferred. Under the revised implementation plan, as further explained below, the reactor scram function of the system will be placed into operation for restart after the eighth refueling outage (RF-8), rather than during the current operating cycle.

Specifically, CPS submitted a plan in its original response to GL 94-02 (Reference 2) to install an Oscillation Power Range Monitoring (OPRM) system as its long-term solution for thermal-hydraulic instabilities. Asea Brown Boveri (ABB) in cooperation with the Boiling Water Reactor Owner's Group (BWROG) developed the OPRM system that is based on Option III requirements in Reference 3. The OPRM system was to be installed during the sixth refueling outage (RF-6) at CPS. Upon restart from RF-6, the plan called for the OPRM system to be operated in a disabled or unarmed state for a period of time such that it would have alarm capability but not be able to effect a reactor scram. Operating the system without its automatic protection enabled would allow for system performance and the potential for spurious trips to be evaluated, as well as gaining familiarization with system operation. A period of at least six months was to be allowed for such operation, consistent with the recommendations of the BWROG.

In accordance with the plan, the OPRM system was installed during RF-6, and testing of the system was begun during the early part of the current operating cycle (Cycle 7). The testing at CPS and at other reactors, however, has identified various equipment problems that require hardware and software changes. In addition, on June 29, 1999, ABB notified the NRC of a design defect in the OPRM system pursuant to 10 CFR 21, "Reporting of Defects and Noncompliance," (Reference 4). The defect will require additional software changes to be made to the installed equipment. The means for resolving all of these equipment problems has thus been identified, but the required modifications will require additional time to complete. The completion date for the modifications is estimated to be about September 2000.

After completion of the modifications, functional testing of the OPRM system (in its final configuration without the trip enabled) can be resumed. This includes monitoring OPRM system operation for at least six months for the previously noted reasons. Additional software changes may then be required based on the test results. Because the next refueling outage (RF-7) is scheduled to begin in Fall 2000 (i.e. at about the same time as the completion of the OPRM modifications), OPRM functional testing (and the ensuing six-month minimum monitoring period) will not begin until after restart from RF-7.

In addition to the above activities and concerns, the cycle-specific reload analysis for the reactor core will use final OPRM design data (based on a completely tested OPRM system). Typically, each reload licensing analysis, i.e., Supplemental Reload Licensing Report, is prepared prior to the forthcoming refueling outage but issued near the end of the preceding operating cycle. Because a late cycle analysis to support full operation of the OPRM system during the latter part of Cycle 8 would be difficult to

complete before the end of Cycle 8, implementation of the OPRM system is planned for RF-8 such that its operation will support Cycle 9 operation via the reload analysis for Cycle 9. On this basis, the most appropriate time to fully implement the OPRM system is during RF-8 which is planned for Spring 2002.

Based on the above, CPS has rescheduled the implementation of the long-term corrective action regarding GL 94-02 for RF-8 such that the OPRM system will be fully operational during Cycle 9 plant operation. This will allow sufficient time to fully resolve the identified equipment problems and monitor performance of the unarmed OPRM system to ensure reliable operation when the reactor trip function is enabled, i.e., to ensure that it will effect a scram in response to unacceptable core thermal-hydraulic oscillations, and yet have minimal potential for inadvertent scrams. In the interim, continued use of the CPS Interim Corrective Actions specified in NRC Bulletin 88-07, Supplement 1, "Power Oscillations in Boiling Water Reactors (BWRs)," and in "BWR Owners' Group Guidelines for Stability Interim Corrective Action," dated June 6, 1994, will ensure that appropriate action is taken to prevent or mitigate any potential core instability event, thus ensuring continued safe plant operation.

Sincerely yours,

  
Michael T. Coyle  
Vice President

RWC/mlh

Enclosure

cc: NRC Clinton Licensing Project Manager  
NRC Resident Office, V-690  
Regional Administration, Region III, USNRC  
Illinois Department of Nuclear Safety