

Mr. Michael P. Gallagher
Director-Licensing
Exelon Corporation
200 Exelon Way
Kennett Square, PA 19348

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3

Dear Mr. Gallagher:

By letter dated July 2, 2001, Exelon Generation Company, LLC (Exelon), submitted for Nuclear Regulatory Commission (NRC) review an application, pursuant to 10 CFR Part 54, to renew the operating licenses for the Peach Bottom Atomic Power Station, Units 2 and 3. The NRC staff is reviewing the information contained in this license renewal application and has identified, in the enclosure, areas where additional information is needed to complete its review. Specifically, the enclosed request for additional information (RAI) is from Scoping and Screening Results Section 2.3.1, "Reactor Coolant System," Section 2.3.2, "Engineered Safety Features Systems," and Section 2.3.3, "Auxiliary System."

Please provide a schedule by letter, or electronic mail for the submittal of your response within 30 days of the receipt of this letter. Additionally, the staff would be willing to meet with Exelon prior to the submittal of the response to provide clarification of the staff's request for additional information.

Sincerely,

Raj K. Anand, Project Manager
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos. 50-277 and 50-278

Enclosure: As stated

cc w/encl: See next page

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Document Name: C:\MYFILES\Copies\Final RAI for Sec 2_3_1, 2_3_2, 2_3_3.wpd

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Division of Regulatory Improvement Programs
COVER PAGE

DATE: January 28, 2002

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3

ORIGINATOR: R. Anand

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3.	R. Caruso/M. Razzaque	/ /02
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5.	C. Grimes	/ /02

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ADAMS ACCESSION NUMBER: **ML**

DATE ENTERED: / /01

FORM 665 ATTACHED and filled out: **YES NO**

COMMITMENT FORM ATTACHED: **YES NO**

Peach Bottom Atomic Power Station, Units 2 and 3

cc:

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REQUEST FOR ADDITIONAL INFORMATION PEACH BOTTOM UNITS 2 AND 3

2.3 Scoping and Screening Results

2.3.1 REACTOR COOLANT SYSTEM

RAI 2.3.1-1

In Table 3.1-1 of the LRA, “spraying” of the fuel assemblies following a LOCA was not identified as an intended function for the core spray spargers. The table also identified “cracking” as the only aging effect for the subject components. The staff requests the applicant to address the following staff concerns:

a) The staff believes that adequate long-term core cooling following a LOCA can only be assured by retaining the original spray distribution over the core which was assumed for the CLB. In the safety evaluation report (SER) for the BWRVIP-18 report, the staff had concluded that when performing inspection of core spray spargers, all BWR plants need to be treated as “geometry-critical” plants. In addition, it is staff’s understanding that the previous BWRVIP designations of “geometry-tolerant” plants have been rescinded and all plants are now considered to be “geometry-critical.” Consequently, in order to assure adequate cooling of the uncovered upper third of the core, the core spray system must provide adequate spray distribution to all bundles in the core. It is also staff’s understanding that leakage through sparger and piping cracks and repairs and potential blockage of spray nozzles must be considered in assessing the core spray distribution. As a result, the staff believe that it is essential that spraying water on the fuel assemblies in a pattern that was originally designed for the core be acknowledged as one of the license renewal intended functions for the spargers, and that the applicant’s aging management activities be designed to provide a reasonable assurance that the original spray distribution will be preserved during the period of extended operation. The staff, therefore, requests the applicant to identify the spray distribution function as an intended function of the spargers to be within the scope of license renewal so that this function will be maintained during the license renewal period, and the applicant affirm that when performing inspection of core spray spargers, the Peach Bottom plants are inspected in accordance to the requirements for the geometry-critical plants, as required by the staff SER for BWRVIP-18 report.

b) The staff believes that “cracking” of the core spray spargers is not the only aging mechanism which can degrade the spray distribution over the core following a LOCA, as Table 3.1-1 has suggested. Blockage, partially or fully, of the spray holes due to repairs to reactor internals, by foreign objects (loose parts), and/or due to corrosion can also influence the core spray pattern. The staff understands that the applicant’s ISI program (B.2.7) for the vessel internals is geared towards detecting cracking of the internals. The staff, therefore, requests the applicant to explain how they plan to detect other means of degradation of the spray pattern, as discussed above, when the B.2.7 program is used for managing the aging effects due only to cracking and loss of material, as stated in page B-64 of the LRA.

RAI 2.3.1 - 2

The staff requests the applicant to verify whether the plant is equipped with a thermal shield, whose intended function is to provide shielding for the safety-related SCs, such as the reactor vessel and the internals, from gammas and neutrons, and thereby, it may be relied upon to minimize irradiation induced embrittlement of the vessel and/or the internals. If the component exists at Peach Bottom, please justify its exclusion from aging management; otherwise, submit an AMR for the subject component.

RAI 2.3.1 - 3

The staff requests the applicant to verify whether the pumps at Peach Bottom, such as the recirculation pumps, are designed with lube motor-oil collection systems, as required under 10 CFR 50, App. R, III O. If they are, then the components should be in scope requiring aging management. It appears that the subject components were not identified in the LRA, and therefore, it is requested that the exclusion be justified.

RAI 2.3.1 - 4

The staff SER for the BWRVIP-41 listed the jet pump sub-components that should be subjected to an AMR. The following sub-components of the jet pump were listed in the BWRVIP-41 SER, and were also described in the Peach Bottom UFSAR, Section, "Jet Pump Assemblies;" but the sub-components were not identified in the LRA:

Nozzle thermal sleeve, riser pipe, and diffuser.

Please explain, why.

2.3.2 ENGINEERED SAFETY FEATURES (ESF) SYSTEMS

RAI 2.3.2 - 1

One of the intended functions of the main steam line flow restrictors is to limit steam line flow during a steam line rupture outside of primary containment until the MSIVs can close, thereby limiting potential radioactive release. Over the extended life of the plant, it is therefore, essential to maintain the flow area of the flow restrictors used in the CLB to calculate the amount of steam released. The staff believes that erosion/corrosion due to high energy steam flow can eventually increase this flow area beyond the value used in the CLB. It appears from the Table 3.4-1 of the LRA that the applicant's aging management program for flow-accelerated corrosion (FAC), which was implemented as required by NRC Generic Letter 89-08, "Erosion/Corrosion-Induced Pipe Wall Thinning" has not been applied to the flow restrictor component groups; however for some of the flow restrictors, the In service Inspection (ISI) program is applied in addition to RCS chemistry control. The staff requests the applicant to provide the following information:

- a) Are the main steam line flow restrictors, and their flow restriction function within scope? If not, why?
- b) If in scope, how will the applicant determine that the flow area does not exceed more than the value used in the CLB, so that the intended functions will be maintained consistent with the CLB for the period of extended operation?

RAI 2.3.2 - 2

The low pressure coolant injection (LPCI) coupling was identified in the BWRVIP-06 report as a safety-related component. It appears, however, that the component was not identified in the LRA requiring an AMR. If the component exists at Peach Bottom, then the staff requests the applicant to justify its exclusion from aging management; otherwise, submit an AMR for the subject component.

2.3.3 AUXILIARY (AUX) SYSTEMS

RAI 2.3.3 - 1

The staff understands that the control rod drop accident is a design-basis event for Peach Bottom, and that in the CLB it is assumed that the control rod drive is fully withdrawn before the stuck rod falls out of the core at a maximum velocity of 5 ft/sec. According to Section 1.6.2.13 of the UFSAR, the control rod velocity limiter, an engineered safeguard, limits the rod drop velocity to less than this value, and the velocity limiters contain no moving parts. Furthermore, the staff understands that the limiter is relied upon to keep the resultant doses due to radioactive material release below the guideline values of 10 CFR 100. One of the required functions designated in the rule for safety-related SSCs, as delineated in 10 CFR 54.4(a)(1)(iii), is the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure comparable to the 10 CFR 100 guidelines. It appears that the subject components were not identified in the LRA, and therefore, the staff requests the applicant to either include the subject components within the scope of license renewal requiring an AMR, or submit a basis for concluding that the components are not in scope.

RAI 2.3.3 - 2

Section 1.6.2.14 of the UFSAR states that the CRD Housing Supports (CRDHS) limit the travel of a control rod in the event that a control rod housing is ruptured. The supports prevent a nuclear excursion as a result of a housing failure, thus protecting the fuel barrier, and limiting radioactive releases. In addition, Section 3.4.6.4 of the UFSAR states that following a postulated failure of the drive housing at the attachment weld at the same time the control rod is withdrawn, and if the collet were to stay unlatched, the housing would separate from the vessel, and the drive and housing would be blown downward against the CRDHS. Since credit is taken for the CRDHS, and the CRDHS are passive and long-lived, the staff believes that the subject components should be within the scope of license renewal requiring aging management. It appears, however, that the subject components and their intended function of limiting travel of the control rod following control rod housing rupture have not been identified in the LRA. Therefore, the staff requests the applicant to provide an explanation.