May 31, 2002

Mr. John L. Skolds
President and CNO
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
5th Floor
Warrenville, IL 60555

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION - NRC INSPECTION REPORT 50-277/02-09, 50-278/02-09

Dear Mr. Skolds:

On April 23, 2002, the NRC completed an inspection regarding your application for renewal of the operating licenses for the Peach Bottom Atomic Power Station, Units 2 and 3. The results of the inspection were discussed with members of your staff on April 24, 2002, at an exit meeting held at your office in Kennett Square, Pennsylvania. The enclosed inspection report presents the results of that inspection.

The inspection was conducted in accordance with NRC Manual Chapter 2516, "Policy and Guidance for the License Renewal Inspection Program," using NRC Inspection Procedure 71002, "License Renewal Inspections." The inspection was the first of two scheduled NRC team inspections activities that support your application for a renewed license for the PBAPS facilities. The inspection consisted of a selected examination of procedures and representative records, and interviews with personnel regarding the scoping and screening of systems, structures and components, in accordance with 10 CFR 54, in the license renewal application.

The scoping and screening portion of your license renewal activities were being implemented as described in your license renewal application. The documentation supporting your application is in an auditable and retrievable form. The team identified three items that require further actions by you to ensure correctness and completeness of the license renewal scoping and screening effort: (1) scoping of nonsafety-related components of the residual heat removal, core spray and reactor building closed cooling water systems to conform with the criterion of 10 CFR 54.4(a)(2); (2) reclassification of certain fuse clips identified as active components in your application; and (3) identification of offsite station blackout equipment included in the application. Except for these open items, your scoping and screening processes were successful in identifying those structures and components required to be considered for aging management.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

If you have any questions, please contact David Lew of my staff at (610) 337-5120.

Sincerely,

/RA/

Wayne D. Lanning, Director
Division of Reactor Safety

Docket Nos: 50-277, 50-278
License Nos: DPR-44, DPR-56

Enclosure: Inspection Report Nos. 50-277/02-09 and 50-278/02-09

Attachments: (1) Supplemental Information
(2) Structures/Systems Selected for Inspection

cc w/encl: Senior Vice President, Mid-Atlantic Regional Operating Group
President and CNO, Exelon Nuclear
Vice President, Mid-Atlantic Operations Support
Senior Vice President, Nuclear Services
Site Vice President, Peach Bottom Atomic Power Station
Plant Manager, Peach Bottom Atomic Power Station
Vice President - Licensing and Regulatory Affairs
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REGION I

Docket Nos:	50-277, 50-278
License Nos:	DPR-44, DPR-56
Report Nos:	50-277/02-09, 50-278/02-09
Licensee:	Exelon Generation Company, LLC Correspondence Control Desk 200 Exelon Way, KSA 1-N-1 Kennett Square, PA 19348
Facility:	Peach Bottom Atomic Power Station, Units 2 and 3
Location:	1848 Lay Road Delta, Pennsylvania
Inspection Period:	April 15 - 23, 2002
Inspectors:	Jimi Yerokun, Team Leader, Region I Richard Barkley, Senior Project Engineer, Region I Suresh Chaudhary, Senior Reactor Engineer, Region I Aniello Della Greca, Senior Reactor Engineer, Region I Alfred Lohmeier, Reactor Inspector, Region I Martin Farber, Senior Reactor Engineer, Region III Hai-Boh Wang, Operations Engineer, NRR Raj K. Anand, Project Manager, NRR Sikhindrak (SK) Mitra, Project Manager, NRR
Approved by:	David C. Lew, Chief Performance Evaluation Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000277-02-09, IR 05000278-02-09, on April 15 - 23, 2002; Exelon Generating Company, Peach Bottom Atomic Power Station, Units 2 & 3; License Renewal Application, Scoping and Screening Inspection Report.

This inspection of License Renewal activities was performed by six regional office inspectors and three staff members from the Office of Nuclear Reactor Regulation. The inspection program followed was NRC Manual Chapter 2516 and NRC Inspection Procedure 71002. This inspection did not identify any "findings" as defined in NRC Manual Chapter 0612.

The inspection concluded that the scoping and screening portion of Exelon's license renewal activities were conducted as described in the license renewal application and that documentation supporting the application is in an auditable and retrievable form. The scoping and screening process were successful in identifying those structures and components required to be considered for aging management. However, the following open items were identified:

(1) The residual heat removal and core spray keep fill subsystems and portions of the reactor building closed cooling water system met the criterion of 10 CFR 54.4(a)(2), nonsafety-related components that could impact safety-related components when they failed, and should be scoped in the application but they were not included. Exelon is further reviewing this and expects to include their determination in the response to an NRC request for additional information. **(Open Item 50-277/02-09-01; 50-278/02-09-01)**

(2) Fuse clips (or holders) within the scope of the application were generally classified as active components by the applicant. Classification of some of the clips as active was considered incorrect. Further discussion by the NRC staff and the industry is necessary to resolve this item. **(Open Item 50-277/02-09-02; 50-278/02-09-02)**

(3) In addressing Station Blackout, the applicant did not specify what Conowingo and Susquehanna components are to be included in the application. In a letter dated April 1, 2002, the NRC issued the "Staff Guidance on Scoping of Equipment Relied on to Meet the Requirement of the Station Blackout (SBO) Rule (10 CFR 50.63) for License Renewal (10 CFR 54.4(a)(3))." The applicant expects to address this issue in a response to an NRC request for additional information. **(Open Item 50-277/02-09-03; 50-278/02-09-03)**

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Report Details

I. Inspection Scope

This inspection was conducted to determine if the license renewal application (LRA) submitted by the Exelon Generating Company (Exelon), herein referred to as the applicant, for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3, was in accordance with 10 CFR 54, regarding the scoping and screening of systems, structures and components (SSC). The scoping process involves the evaluation of plant systems and structures against the criteria of 10 CFR 54 (a)(1) through (3) for inclusion into the scope of the LRA. Systems and structures within the scope (in-scope) are those that are: (1) safety-related; or (2) non-safety related, but whose failure could prevent the satisfactory accomplishment of the function of a safety-related system; or (3) relied on in the safety analyses or plant evaluation applicable for any of fire protection (10 CFR 50.48), environmental qualification (10 CFR 50.49), pressurized thermal shock (10 CFR 50.61), anticipated transient without a scram (10 CFR 50.62) and station blackout (10 CFR 50.63). The screening process involves evaluating components of the systems and structures within the scope of the rule to identify those that are passive and long-lived and as such subject to aging management review (AMR) in accordance with 10 CFR 54.21(a). Components and structures subject to AMR are those that: (1) perform their intended function without moving parts or without a change in configuration or properties (passive); and (2) are not subject to replacement based on a qualified life or specific time period (long-lived).

By letter dated July 2, 2001, Exelon submitted the LRA for PBAPS. The LRA states that the scoping process involved identification of systems, structures and components that fall within the scope of the rule when evaluated against the criteria of 10 CFR 54.4(a). Scoping results were documented in individual “License Renewal SS Scoping Forms.” Interfaces between systems were examined and systems realigned as necessary to ensure that interfacing components were associated with the appropriate systems for license renewal. The LRA also states that the screening process involved identification of components (primarily from the plant’s component record list - CRL) of those systems determined to be within the scope of the rule, and the structures determined to be within the scope of the rule subject to an aging management review (AMR) in accordance with 10 CFR 54.21(a)(1). Screening results were documented in individual “License Renewal Component Screening Forms.” License renewal (LR) drawings were developed for each in-scope system, high-lighting the portion of the system within the scope of the LRA. The scoping and screening process were documented in the applicant’s procedure, LR-C-14, “License Renewal Process,” Revision 3.

The NRC inspection team (the team) reviewed the results of the applicant’s scoping of selected plant systems and structures (scoping forms) and the screening of components within those systems (screening forms) to identify the list of components that need evaluation for aging management. The team’s review included the system license renewal drawings in comparison with the PI&D drawings, Updated Final Safety Analysis Report (UFSAR), Design Basis Documents, characterization of the components listed in the screening form, and comparison with the requirements of 10 CFR 54. The inspection involved interviews of applicant personnel, examination of documentation which supports the LRA for Peach Bottom Atomic Power Station, Units 2 and 3, and walkdowns of selected systems, structures and electrical equipment. The team selected a sample of systems, structures and components from the LRA scoping results to verify the adequacy of the applicant’s scoping and screening activities. For the selected systems and structures designated as being within the scope of the LRA, the associated license renewal drawings, and the active/passive and short/long lived determinations of selected

components were reviewed to confirm the accuracy of the applicant's results. In addition to the in-scope systems and structures, the team also selected some systems and structures that the applicant had determined were not within the scope of license renewal (not in-scope) for review. The team reviewed supporting documentation and interviewed applicant personnel to confirm the accuracy of the LRA conclusions. The systems and structures selected for review during this inspection are listed in Attachment 2 to this report.

II. Findings

A. Evaluation of Scoping and Screening of Mechanical Systems

The team evaluated the applicant's implementation of the scoping and screening process for mechanical systems and components by reviewing a number of risk significant plant systems that the applicant determined to be within the scope of license renewal. For screening, a list of the components within the system was extracted from the CRL and evaluated against the criteria of 10 CFR 54 21(a). The team also reviewed some systems that the applicant had determined were not within the scope of license renewal to ascertain that the applicant had made the correct determination. The results of the review in this area are discussed below.

1. Standby Liquid Control System

The applicant included the standby liquid control system (SBLC) within the scope of the license renewal application. The safety function of the SBLC system is to provide an independent backup method to maintain reactor shut-down from full power if control rod insertion is insufficient. This is accomplished by injecting enriched sodium pentaborate in sufficient quantity and concentration to counteract the positive reactivity. The system is located in the reactor building and consists of a tank, a test tank, two 100% capacity positive displacement pumps with associated relief valves, two standby nitrogen accumulators, two explosive valves installed in parallel, connected piping, and associated controls and instrumentation. Instrumentation connection to the control room provides for surveillance and control of the system.

The boundary of the SBLC system within the scope of the LRA was depicted on license renewal drawings, LR-M-358, Sheets 1 and 2. The drawings indicate that the standby liquid control test tank and the standby liquid control tank heater are excluded from the LRA. Since these components are not safety-related, and do not contribute to accomplishing the system function, the team is in agreement with this exclusion. The team examined the results of the applicant's screening of the SBLC system components within the scope of the LRA, for whether they are passive, long lived, and are appropriately designated for aging management review. The team concluded that the applicant had performed the scoping and screening for this system in accordance with the methodology described in the LRA and the rule.

2. High Pressure Service Water System

The applicant included the high pressure service water system (HPSW) within the scope of the license renewal application. The HPSW system is designed to provide cooling water flow to: (1) transfer heat from residual heat removal heat exchangers for the normal and post accident shutdown, hot standby, or refueling modes of operation; (2) provide water to the RHR system for containment flooding beyond design basis post accident conditions; (3) transfer heat from the RHR system during normal plant operations; and (4) maintain the suppression pool temperature below the technical specification limit.

The team reviewed the system description and the licensing basis in the UFSAR, the design basis documents, related drawings and the license renewal scoping and screening forms to determine the validity and appropriateness of the applicant's determinations. The team concluded that the applicant had performed the scoping and screening for this system in accordance with the methodology described in the LRA and the rule.

3. Emergency Service Water System

The applicant included the emergency service water (ESW) within the scope of the license renewal application. The ESW system is designed to provide cooling water flow to transfer heat from designated safety-related equipment during a loss of offsite power (LOOP) event; or the maximum credible accident via either an open loop or a closed loop configuration; and cooling water flow to nonsafety-related equipment in the open loop alignment. Also, the system is required to support the safety functions of the core spray system and the emergency diesel generator systems. The applicant included some safety-related components from other systems in the scope of this system. These components are emergency core cooling system (ECCS) pump room coolers and solenoid valves, SV-0-36B-0241A/B/C/D, based on the Maintenance Rule bases document.

The team performed a walk through inspection of the intake structure, pump house and the associated equipments examining the material condition and any visual signs of deterioration. No adverse condition was noted. The team concluded that the applicant had performed the scoping and screening for this system in accordance with the methodology described in the LRA and the rule.

4. Emergency Diesel Generator System

The applicant included the emergency diesel generator (EDG) within the scope of the license renewal application. The EDG system provides Class 1E electrical power to the station's emergency AC buses in the event of a loss of offsite power. A secondary function of the EDG is to support the transfer of electrical power from one offsite source to the other by providing an onsite AC source that is paralleled to the offsite sources during such transfers. The applicant divided the system into subsystems, each of which is necessary for the initiation and proper operation of the system. The subsystems and their designation are: emergency generators (52); diesel generator engine (52A); diesel generator and controls (52B); diesel generator starting air (52C); diesel generator fuel oil (52D); diesel generator jacket cooling (52E); diesel generator air coolant (52F); and diesel generator lube oil (52G).

Subsystems 52 and 52A comprise the electrical portion of the system and include the circuit breakers required to deliver power to the emergency buses and to isolate the buses from the normal sources, the protective and control relays and the required indication and annunciation functions. Subsystem 52A also includes the diesel engine and necessary mechanical components. The remaining subsystems provide for the starting and correct operation of the diesel generator assembly. Each subsystem is safety-related and was included in the scope of the LRA.

The team reviewed the applicable sections of the UFSAR and the LRA and applicable LR drawings, and scoping and screening reports for the various diesel generator subsystems. The team noted that engine-mounted components and components associated with the starting and operation of the engine and with the protection, control, and monitoring of the EDG system were considered active. The applicant had also identified several components that are subject to aging management review, including instrument and control panel enclosures, strainers, filters, tanks, a variety of manual valves, instrument and piping components, and pump casings and valve bodies performing system pressure boundary functions. The team concluded that the applicant had performed the scoping and screening for the EDG system and support systems in accordance with the methodology described in the LRA and the rule.

5. Diesel Generator Building Ventilation System

The applicant included the EDG building ventilation system within the scope of the license renewal application. The system provides heating, cooling, and ventilation to the diesel generators and associated supporting equipment and to the ESW booster pumps located in the diesel generator building. The system comprises five air supply fans and exhaust dampers, associated controls, air ducts, and louvers. The primary function of the system is to maintain an acceptable environment within the EDG rooms during normal operating conditions and to ensure proper EDG operation following a design basis event.

The team reviewed the applicable sections of the UFSAR and the LRA, and applicable LR drawings, and scoping and screening reports for ventilation system. The team determined that the portion of the system that is subject to aging management review consists of the supply fans, louvers, ducts, fan flexible connections and control panel enclosures and were so designated by the applicant. The team concluded that the applicant had performed the scoping and screening for the EDG building ventilation system in accordance with the methodology described in the LRA and the rule.

6. Reactor Pressure Vessel and Internals

The applicant included the reactor pressure vessel (RPV) and internals within the scope of the license renewal application. The reactor vessel and internals perform multiple critical functions: (1) Provide the primary pressure boundary for the reactor coolant, (2) provide a floodable volume in which the core can be adequately cooled to assure that acceptable fuel damage limits are not exceeded following design basis accidents (DBAs), (3) provide vertical and horizontal support to the fuel assemblies, control rods, and other vessel internal components, and (4) ensure control coolant flow through the core by forming appropriate partitioning within the reactor pressure vessel to allow power operation of the core without fuel damage. The reactor vessel and internals consist primarily of the RPV, the RPV top head and closure assembly, jet pump assemblies, core support plate, core differential pressure and standby liquid

control line, fuel support pieces, control rod guide tubes and housing, core shroud, steam separators, steam dryers, feedwater spargers, and core spray sparger assemblies.

The applicant placed virtually all of the reactor pressure vessel and internals within the scope of the LRA as they form the reactor pressure boundary. The few reactor vessel internals that are not safety-related (e.g., steam dryers and separators, feedwater sparger) were excluded from the scope of the LRA. Since these components do not contribute to accomplishing the safety function of this system and the failure of these components will not impact on the reactor coolant pressure boundary, the team was in agreement with the exclusion of these components.

The team examined the results of the applicant's screening of the reactor vessel and internals component designations within the scope of the LRA, and whether they are passive, long-lived, and appropriately designated for AMR. The team verified that the applicant's selection of components for AMR was appropriately determined. The team concluded that the applicant had performed the scoping and screening for this system in accordance with the methodology described in the LRA and the rule.

7. Reactor Recirculation System

The applicant included portions of the reactor recirculation system within the scope of the license renewal application. The function of the recirculation system is to provide forced coolant flow through the reactor core so that steam can be generated for power production without exceeding safe temperature limits for the nuclear fuel. The recirculation system also provides an alternative method for controlling reactor power by varying coolant rate through the core so that greater versatility is available in making reactor power adjustments without the use of control rods. This is accomplished by two large pumps, each fed from motor generator sets that provide a variable frequency power supply to vary the speed of each pump. Each pump and its associated piping supplies ten jet pumps, internal to the reactor vessel, which pump feedwater from the annulus area outside the reactor core to the lower vessel head using only the driving force of the recirculation flow. The system is located in the reactor building, in the reactor drywell and inside the reactor vessel. The applicant included the portion of the reactor recirculation system that satisfies the function of reactor coolant system integrity and reactivity control within the scope of the license renewal application.

The team concluded that the boundaries of the reactor recirculation system scope depicted in the LR drawings were appropriate. The drawings indicate that the recirculation pump motors, the motor generator sets and select connected instrumentation are excluded from the recirculation system scope, since these components are not safety-related and do not contribute to accomplishing the system function. The team examined the results of the applicant's screening of the recirculation system component designations within the scope of the LRA, and whether they are passive, long-lived, and appropriately designated for aging management review. The team verified that the selection of components for AMR was appropriately determined. The team concluded that the applicant had performed the scoping and screening for this system in accordance with the methodology described in the LRA and the rule.

8. High Pressure Coolant Injection

The applicant included the high pressure coolant injection (HPCI) system within the scope of the license renewal application. The HPCI system consists of a turbine-driven pump, piping, valves and controls which provide for a complete and independent emergency core cooling system. The primary water source is the condensate storage tank, with a backup supply of water available from the suppression pool. The system is equipped with a test line shared with the reactor core isolation cooling system to permit functional testing and a minimum flow bypass line. The HPCI system safety function is to provide sufficient coolant to the reactor vessel to limit fuel clad temperature in the event of a small break in the reactor coolant system and a subsequent loss of coolant which does not result in a depressurization of the reactor vessel. The HPCI system continues to operate until reactor vessel pressure is below the pressure at which LPCI operation or core spray system operation maintains core cooling.

The team reviewed the applicable LRA sections, associated boundary drawings, UFSAR sections, and scoping and screening documents for the system. The team concluded that the applicant has properly performed the scoping and screening for this system in accordance with the methodology described in the LRA and the rule.

9. Primary Containment Isolation System

The applicant included the primary containment isolation system (PCIS) within the scope of the license renewal application. The PCIS provides timely protection against the onset and consequences of accidents involving the gross release of radioactive materials from the fuel and nuclear system process barrier. The system initiates isolation of the reactor pressure vessel, isolation of piping which penetrate primary containment, and isolation of piping in selected balance-of-plant systems that provide potential paths for the release of radioactive materials coming from breaks in the reactor coolant pressure boundary. For example, valves and piping from nonsafety-related systems such as service air, main steam sampling, reactor water sampling, and primary containment leak testing that interface with the PCIS are included in the scope of the LRA.

The team reviewed the system description and the licensing basis in the UFSAR, the scoping and screening forms, and the design basis documents and applicable drawings, to determine the validity and appropriateness of the determinations of the screening process. The team concluded that the applicant had performed the scoping and screening for this system in accordance with the methodology described in the LRA and the rule.

10. Reactor Core Isolation Cooling System

The applicant included the reactor core isolation cooling system (RCIC) within the scope of the license renewal application. The RCIC System is a high pressure coolant makeup system which supports safe shutdown of the reactor whenever the reactor is isolated from its heat sink at elevated temperatures and pressures. The RCIC system intended functions are coolant injection, reactor vessel level control and reactor vessel pressure control. The system will facilitate depressurization of the reactor vessel to the point where the shutdown cooling mode of the residual heat removal system can be placed in operation. The primary water source is the condensate storage tank, with a backup supply of treated water available from the suppression pool. The RCIC system consists of a turbine-driven pump, piping, valves and controls, which provide for delivery of makeup water to the reactor vessel.

The team reviewed the applicable LRA sections, associated boundary drawings, UFSAR sections, and scoping and screening documents for the system. The team concluded that the applicant has properly scoped and screened this system in accordance with the methodology described in the LRA and the rule, and identified the components subject to aging management review.

11. Residual Heat Removal System

The applicant included the residual heat removal (RHR) system within the scope of the license renewal application. The function of the RHR system is to remove decay heat from the reactor coolant system following shutdown and depressurization of the reactor. The RHR system also provides a means to cool the suppression pool water to within design limits. The system also assists the spent fuel pool cooling system when heat loading on the system is high during refueling operations. Following a loss of coolant accident, the RHR system functions to provide core cooling by rapidly reflooding the reactor vessel and removing decay heat from the reactor coolant system, the drywell and the suppression pool via the RHR heat exchangers and containment spray. The system consists of four pumps and four heat exchangers as well as the associated valves and piping necessary to take water to and from the reactor coolant system or the suppression pool. The system is located in the reactor building, in the drywell and in the suppression pool.

The team reviewed the boundaries of the residual heat removal system scope depicted in the license renewal drawings and found them appropriate with one exception. The drawings indicate that the RHR keep fill subsystem is excluded from the LR scope. The keep fill subsystem serves as a means of preventing a “water-hammer” effect in the RHR system piping, thereby minimizing the time delay of water reaching the reactor core after a large break loss of coolant accident. The keep fill subsystem is not safety-related, and its failure would not render the RHR system inoperable since: (1) the RHR system has alarms that indicate when the keep fill subsystem is not maintained full; (2) the applicant procedures require an evaluation of the operability of the RHR system when the keep fill subsystem alarms; and (3) the leakage from the RHR system is small, indicating that a loss of the keep fill system would only result in a very slow loss of water from the RHR system. However, the team determined that, on the basis of criterion 10 CFR 54.4(a)(2), this subsystem would need to be considered in the scope of the license renewal since the subsystem is located in the RHR area and failure of its piping could physically impact the RHR system. At the conclusion of this inspection, the applicant was evaluating the inclusion of those sections of the keep fill system inside the reactor building that if failed could impact safety-related systems. This item was identified as an open item pending completion of the applicant’s determination of the extent to which other systems in the reactor building, such as the RHR and CS keep fill subsystems, should be included in the LRA. The applicant expects to include their determination in the response to an NRC request for additional information. **(Open Item 50-277/02-09-01; 50-278/02-09-01)**

The team examined the results of the applicant’s screening of the RHR system components within the scope of the LRA and whether they are passive, long lived, and appropriately designated for aging management review. The team verified that the selection of components for AMR was appropriately determined.

12. Core Spray System

The applicant included the Core Spray (CS) system within the scope of the license renewal application. The intended function of the system is to provide water to spray onto the top of the fuel assemblies to cool the core and prevent excessive fuel clad temperature following a design basis loss of coolant accident. The CS system consists of two independent loops that include two 50% capacity electric motor driven centrifugal pumps, a spray sparger above the reactor vessel core, piping and valves to covey water from the suppression pool to the sparger, and associated controls and instrumentation. The system includes a minimum flow bypass path to protect the core spray pump when operating with low flow.

Examination of License Renewal Drawings LR-M-362, Sheets 1 and 2, indicate the keep fill subsystem and torus water filter pump systems are excluded from the CS system scope. Since these components are not safety-related, they do not contribute to accomplishing the system function. However, similar to the issue associated with the RHR keep fill sub-system, the applicant needed to consider the CS keep fill subsystem on the basis of the criterion of 10 CFR 54(a)(2). This item was identified as an open item (see open Item 50-277/02-09-01; 50-278/02-09-01) pending completion of the applicant's determination of the extent to which the keep fill subsystem should be included in the LRA. The applicant expects to include their determination in the response to an NRC request for additional information.

The team examined the results of the applicant's screening of the CS system components within the scope of the LRA, and whether they are passive, long lived, and appropriately designated for AMR. The team verified that the applicant's selection of components for AMR was appropriately determined.

13. Feedwater System

The applicant included portions of the feedwater system within the scope of the license renewal application. The intended function of the feedwater system is to provide an injection path into the vessel for both HPCI and RCIC during transient or accident conditions. The feedwater controls and piping system is safety-related from the outermost primary containment isolation valve to the RPV. The portion of the feedwater system required to support HPCI and RCIC injection flow paths to the RPV, the reactor coolant pressure boundary, the primary containment boundary are the only parts of the feedwater system, included in the scope of license renewal.

The team reviewed the applicable LRA sections, associated boundary drawings, UFSAR sections, and scoping and screening documents for the system. The team concluded that the applicant has properly performed the scoping and screening for this system in accordance with the methodology described in the LRA and the rule.

14. Reactor Building Closed Cooling Water System

The applicant determined that the reactor building closed cooling water (RBCCW) system was not within the scope of the LRA. The RBCCW system transfers heat from potentially radioactive systems to the station service water system. The system provides an intermediate cooling loop to minimize the potential spread of contamination from radioactive systems to the environment. The system consists of two pumps and two heat exchangers as well as a head tank and associated piping and valves to permit water to be taken from and returned to the equipment that it cools.

The applicant excluded this system from within the scope of the LRA, since the system is not safety-related and does not perform an accident mitigation function. The piping and components associated with the primary containment boundary are included with PCIS, and as such, appropriately included within the scope of the LRA. However, the applicant had not complete an assessment of portions of the system that are in the area of safety-related systems in the reactor building and could meet the requirement of 10 CFR 54.4(a)(2) criterion. This issue is similar to that affecting the RHR and CS systems regarding treatment of the keep fill subsystems and was identified as an open item. The applicant expects to include their determination in the response to an NRC request for additional information. **(Open Item 50-277/02-09-01; 50-278/02-09-01)**

15. Reactor Water Cleanup System

The applicant determined that the reactor water cleanup (RWCU) system was not within the scope of the LRA. The reactor water cleanup system serves to process reactor coolant system water in order to maintain reactor water quality within specified limits. The system consists of a series of regenerative and non regenerative heat exchangers, two pumps, several filters and demineralizers and associated piping to permit water to be taken from and returned to the reactor coolant system.

The applicant excluded this system from within the scope of the LRA since this system is not safety-related and does not perform an accident mitigation function. However, piping and components inside containment are included with the recirculation system and the containment penetration piping and components are included with the PCIS, and thereby appropriately included within the scope of the LRA. The team verified that the portions of the system that met the criteria of 10 CFR 54.4(a) had been appropriately realigned (included) to other systems within the scope of the LRA. The team concluded that the applicant had performed the scoping for this system in accordance with the methodology described in the LRA and the rule.

16. Instrument Nitrogen System

The instrument nitrogen system was excluded from the scope of the LRA. The system is one of three compressed nitrogen subsystems and provides a reliable source of clean, dry, oil-free compressed nitrogen to pneumatic components in the primary containment. After realigning selected components from the instrument nitrogen system to the main steam system, residual heat removal system, primary containment isolation system, safety grade instrument gas subsystem, and automatic depressurization system (ADS) backup nitrogen subsystem, the instrument nitrogen subsystem was classified as not being in the scope of the rule. The system

consists of two trains per unit, including a motor-driven compressor, aftercooler, moisture separator, receiver, filters, strainers, associated valves, instruments, piping, orifices, tubing, and fittings. The team reviewed the design basis document, UFSAR, and scoping and screening forms for the instrument nitrogen subsystem and the systems, noted above, which received realigned components. The team sampled components in the instrument nitrogen subsystem and did not identify any components which should have been realigned to other systems. The team concluded that the applicant had performed the scoping for the instrument nitrogen system in accordance with the methodology described in the LRA and the rule.

17. Drywell Ventilation System

The applicant excluded the drywell ventilation system from the scope of the LRA. The drywell ventilation system is not a safety-related system. It is a purge ventilation supply system consisting of two fans used to supply filtered outdoor air to the drywell for purge and ventilation purposes to allow personnel access and occupancy during shutdowns and refueling. Each ventilation line connecting to the primary containment is provided two butterfly valves in series for isolation. The containment isolation valves were included in the scope of the primary containment isolation system which was within the scope of the LRA. The team concluded that the applicant had performed the scoping for this system in accordance with the methodology described in the LRA and the rule.

B. Evaluation of Scoping and Screening of Electrical Systems

The team evaluated the applicant's implementation of the scoping and screening process for electrical systems by reviewing a number of plant systems and components that the applicant determined to be within the scope of license renewal. For screening, a list of the components within the system was extracted for the CRL and evaluated against the criteria of 10 CFR 54 21(a). Majority of the electrical components were classified as active components. For the most part, the passive components were placed in common groups (Commodities) for AMR because of similarities in design, material and/or environment. The team also reviewed some systems that the applicant had determined were not within the scope of license renewal. The results of the team's review in this area are discussed below.

The team noted that fuse clips (or holders) were among the components classified as active by the applicant and questioned this determination. The applicant's position was that the fuse clip and the associated fuse comprise an active assembly. The team agreed that the fuse was appropriately classified as active; however, classifying the clip as active was considered incorrect and not in accordance with the intent of 10 CFR 54.21(a). Further review revealed that this issue would require further discussion by the NRC staff and the industry to resolve. This is an open item **(50-277/02-09-02; 50-278/02-09-02)**. With the exception of this issue, The team concluded that the applicant had performed the scoping and screening for the 480 VAC load center system in accordance with the methodology described in the Peach Bottom LRA and the rule.

1. Station Blackout

The applicant included the station blackout (SBO) system within the scope of the LRA. The station blackout system, installed in response to 10 CFR 50.63, provides an alternate ac (AAC) power to the essential electrical buses, following a postulated loss of offsite power coincident with the loss of all onsite ac power sources. During an SBO event, AAC power is supplied, within one hour, from the Conowingo Hydroelectric Station, Susquehanna Substation, via a submarine cable. The SBO system consists of two subsystems: 913 that includes equipment and components associated with the transmission of the AAC power to the Peach Bottom SBO substation, and 51H that supports the SBO functions. Some of the components associated with the latter subsystem were realigned by the applicant to other systems.

The equipment in subsystem 51H that is subject to aging management consists of a power condition monitoring panel and the two switchgear assemblies, 2SU and 2SUB, that house the 13 KV circuit breakers and associated equipment that are withing the scope of the licensing renewal. The remainder of the components that are required for the operation of the AAC power source were considered active in conformance with the Rule. The equipment in subsystem 913 identified by the applicant as subject to aging management consists of the incoming line equipment and the SBO switchgear support panels.

The incoming line equipments identified by the applicant as being within the scope of the license renewal include the Conowingo Hydroelectric plant, the Susquehanna substation, a wooden takeoff tower at Susquehanna, two manholes at Conowingo and Peach Bottom, and the transmission line (a submarine cable). The LR component screening form did not specify what Conowingo and Susquehanna components are included in the program. In a letter dated April 1, 2002, the NRC issued the "Staff Guidance on Scoping of Equipment Relied on to Meet the Requirement of the Station Blackout (SBO) Rule (10 CFR 50.63) for License Renewal (10 CFR 54.4(a)(3))." The applicant's further evaluation to determine the specific components of Conowingo and Susquehanna that need to be included in the LRA, and to address the newly issued NRC guidance is expected to be completed and provided to the NRC by May 27, 2002. The team identified this item as an open item pending further review of the applicant's evaluation and the LR scope in this area. **(Open Item 50-277/02-09-03; 50-278/02-09-03)**

The team reviewed the UFSAR, the LRA, applicable LR drawings, and scoping and screening reports for the SBO system. The team determined that, apart from the open item identified above, the applicant had properly accounted for the components that are subject to aging management review. In addition, the team confirmed that the system-associated components within the scope of the license renewal had been considered and included in the associated system. The licensee confirmed that two 13 KV breakers within the scope of the license renewal, but inadvertently omitted from the scoping drawings and screening forms, would be included in the program.

2. 4 KV System

The applicant included the 4 KV system in the scope of the LRA. The 4 KV system is a Class 1E electrical distribution system consisting of eight emergency buses, four for each unit, that supply power to Class 1E and non-Class 1E components during all operating modes. During normal operating conditions, the system receives its power from the 13 KV switchgear through

two emergency auxiliary transformers. The same transformers are used to supply power to the 4 KV buses during a station blackout or for a fire safe shutdown. In the event of a loss of offsite power, electrical power to the system is provided by four emergency diesel generators.

In establishing system boundaries, the applicant opted to associate, in general, the electrical sources with the systems that utilize the source. Thus, for the 4KV emergency distribution system the applicant included the normal sources, but associated the emergency auxiliary transformers with the station blackout fire safe shutdown systems and the EDG supply breakers with the EDG system. Regarding the load supply breakers, the applicant associated the switchgear cubicles with the loads but, because of interchangeability, kept the circuit breakers themselves within the scope of the 4 KV system. In conformance with the guidance of the Nuclear Energy Institute (NEI) 95-10 Guideline, except the switchgear assembly, four relay panels, and two segregated bus ducts, all system components were considered active.

The team reviewed applicable sections of the UFSAR, the LRA, applicable LR drawings, and scoping and screening reports for the 4 KV system. The team determined that the applicant had properly accounted for the components that are subject to aging management review. In addition, the team confirmed that the 4 KV system-associated components considered to be within the scope of the license renewal had been included in an appropriate associated system. The team concluded that the applicant had performed the scoping and screening for the 4 KV system in accordance with the methodology described in the Peach Bottom LRA and the Rule.

3. 480 V Load Centers

The applicant included the safety-related (class 1E) portion of this system within the scope of the LRA. The 480 VAC load center system is an electrical distribution system providing 480 VAC power to four (per unit) class 1E electrical load groups, three non-class 1E load groups, and some common non-class 1E load groups. The system is subdivided into a non-safety subsystem and a safety-related emergency subsystem. After realigning selected components from the non-safety to the emergency load center subsystem, the non-safety subsystem was classified as not being in the scope of the rule. The emergency load center subsystem consists of the 4 KV transformer feeder breakers, 4 KV to 480 VAC transformers, 480 VAC feeder breakers, the load center buses, control power transformers, fuses, cables, connectors, and miscellaneous electrical components. The team reviewed the design basis document (P-S-14); UFSAR, sections 8.4.2-5 and 8.4.8; LR drawings; plant electrical drawings; and scoping and screening forms for both load center subsystems. The team also examined a large sample of nonsafety-related load center components that the applicant had excluded from the scope to determine whether any components had been improperly excluded. None were identified. Components, not included in a commodity group, and subject to aging management review were identified in an emergency load center screening form. The majority of components were considered active and not subject to AMR. Components in the equipment qualification program were subject to time limited aging analysis. The physical structure of the load centers was considered passive, long-lived, and requiring aging management activities.

4. 480 V Motor Control Centers

The applicant included the safety-related portion of the 480 V motor control centers (MCC) within the scope of the LRA. The 480 VAC motor control center system is an electrical distribution system providing 480 VAC power from the 480 VAC load centers, through motor control centers and circuit breakers, to loads such as motors, heaters, 120/208VAC distribution panels, and welding receptacles. The system is subdivided into four portions: emergency motor control centers, non-emergency motor control centers, distribution and lighting panels, and welding receptacles. Only the emergency 480 VAC motor control centers were considered within the scope of the rule. The team reviewed some components in the three subsystems excluded from the scope and did not identify any improperly excluded components. Electrical components were also realigned into the system from 23 other systems which had been excluded from the scope of the program. The team reviewed the design basis document, UFSAR, LR drawings, plant electrical drawings, and scoping and screening forms for the emergency motor control center subsystem. Components, not included in a commodity group, and subject to aging management review were identified in an emergency motor control center system screening form. The majority of components were considered active and not subject to aging management. Components in the equipment qualification program were subject to time limited aging analysis. The physical structure of the motor control centers was considered passive, long-lived, and requiring aging management activities. The team concluded that the applicant had performed scoping and screening for the 480 VAC motor control center system in accordance with the methodology described in the LRA and the rule.

5. Reactor Protection System

The applicant included the reactor protection system (RPS) within the scope of the LRA. The safety function of the reactor protection system is to provide timely protection against the onset and consequences of conditions that threaten the integrity of the fuel barrier and the nuclear system process barrier by initiating, with precision and reliability, a reactor scram in time to limit fuel damage. The RPS includes the motor-generator power supplies with associated control and initiating equipment, sensors, relays, bypass circuitry, and switches that cause rapid insertion of control rods to shut down the reactor. As with the electrical and I&C components, the passive, long-lived components of the RPS subject to AMR were identified as commodities using the guidance in NEI 95-10. Components not included in a commodity group and subject to AMR were identified in system screening forms. The team concluded that the applicant had performed the scoping and screening for this system in accordance with the methodology described in the LRA and the rule.

6. DC System

The applicant included virtually all the DC system within the scope of the LRA. The safety objective of the DC system is to provide a reliable, uninterruptible source of 125 V and 250 Vdc power to Class 1E and non-Class 1E loads during normal plant operation, and for safe shutdown following design basis event. There are two independent safety-related 125/250 VDC systems per unit. Each system comprises two 125 V batteries, each with a charger panel consisting of two, 100%, chargers. A nonsafety-related125/250 VDC system is used for the turbine generator and other nonsafety-related loads. The DC system also includes the 24 VDC system which provides power for neutron monitoring and process radiation monitoring loads necessary for operation. Loss of the 24VDC system does not affect safe shutdown. The applicant included all the system in scope of the LRA. The team found that the applicant had

performed the scoping and screening for this system in accordance with the methodology described in the LRA and the rule.

7. 13 KV System

The 13 KV system was not included in the scope of the LRA. The 13 KV system is a non-Class 1E electrical distribution system that supplies power to non-Class 1E components during all operating modes. The system also supplies power from the offsite sources, including the station blackout source to the Class 1E 4KV system through the Emergency Auxiliary Transformers. In establishing system boundaries, the applicant opted to associate, in general, the electrical sources with the systems that utilize the source. Thus, in the 13KV distribution system, except for the emergency supply breakers that were by the applicant's decisions associated with the station blackout or the fire safe shutdown distribution system, all other breakers were considered out of scope of the license renewal.

The team reviewed appropriate sections of the UFSAR and the LRA, applicable LR drawings, and the scoping reports for the 13 KV systems. In particular, the team verified that the 13 KV breakers considered to be within the scope of the license renewal had been included in an appropriate associated system. The team concluded that the applicant had performed scoping for the 13 KV system in accordance with the methodology described in the LRA and the rule.

8. Cathodic Protection System

The cathodic protection system was not included in the scope of the LRA. The cathodic protection system provides corrosion protection to the exterior surfaces of underground or submerged metallic structures, such as pipes, tanks, and pilings, exposed to soil and water. The system is not safety-related and is not required to mitigate the consequences of a design basis event. Instead, during normal plant operating conditions, through an electro-chemical process, it ensures that safety-related metal structures in contact with soil and water, do not degrade and can perform their safety functions when called upon to do so.

The team reviewed applicable sections of the UFSAR, and the scoping report for the cathodic protection system. The team concluded that the applicant had performed the scoping for this system in accordance with the methodology described in the LRA and the rule.

C. Evaluation of Scoping and Screening of Structures

The team evaluated the applicant's implementation of the scoping and screening process for structures that the applicant determined to be within the scope of license renewal. The team also reviewed some structures that the applicant had determined were not within the scope of license renewal. In addition to the structures reviewed below, the team performed a walk through inspection of the following structures to assess the material condition and to determine if there were visible signs of deterioration: (1) emergency diesel generator building; (2) Unit 2 startup switchgear building; (3) inner intake screen structure/sluice gate structure; (4) manholes MHO25 and MHO26; and (5) station blackout structure and manhole. No evidence of deterioration was present.

1. Containment Structure

The applicant included the containment structure within the scope of the LRA. The containment system is a multi-barrier that includes: (1) a primary barrier consisting of the primary containment with its pressure suppression system, and (2) a secondary barrier consisting of the reactor building with a system to limit the ground level release of airborne radioactive material from the secondary containment. The structures are classified as seismic category I. The drywell portion provides a leak tight fission product barrier, and the pressure suppression chamber provides pressure suppression in case of LOCA through vent system for steam discharge pressure suppression and suppression pool water inventory. The structure also provides physical support for the safety-related and nonsafety-related systems and components during normal and abnormal operating condition.

The drywell structure of the containment system is supported on a cylindrical steel skirt that is surrounded by structural concrete. This concrete is integrally connected to the foundation slab. Loads are transferred from the RPV pedestal through the drywell shell directly to the foundation slab. The RPV pedestal, concrete, and the foundation are covered in the Structural Design Basis Document.

The team reviewed the structural description and the licensing basis in the UFSAR, the design basis documents, and the license renewal scoping and screening forms to determine the validity and appropriateness of the determinations of the screening process. The related drawings were also reviewed. The team found that the applicant had performed the scoping and screening for this structure in accordance with the methodology described in the LRA and the rule.

2. Reactor Building Structure

The applicant included the reactor building structure within the scope of the LRA. The reactor building is a seismic Class I structure completely enclosing the primary containment and auxiliary systems of the nuclear steam supply system, and housing the associated spent fuel storage pool, dryer and separator storage pool, and reactor well. The building is essentially a cast-in-place reinforced concrete structure from its foundation floor at Elevation 91 ft 6 in to its refueling floor at Elevation 234 ft 0 in. Above this floor, the building superstructure consists of metal siding and decking supported on structural steel framework." The safety classification was reflected in License Renewal SS Scoping Form, LR-C-14-3 for System 70, "Structure - Reactor Building," Revision 3, 7/26/01. Table 2.4-2 of the LRA lists all the component groups that require aging management review including reinforced concrete walls, slabs, columns, beams, foundations, and block walls, structural steel, reinforced concrete embedments, pipe whip restraints, missile barrier, metal siding, roof deck, and blow out panels. Also included in Table 2.4-2 are fuel floor liner, fuel pool gates, fuel storage racks, boraflex absorbers, and component supports. The team concluded that the applicant had performed the scoping and screening for this structure in accordance with the methodology described in the LRA and the rule.

3. Emergency Cooling Tower and Reservoir

The applicant included the emergency cooling tower and reservoir (ECTR) with the scope of the LRA. The ECTR system is designed and intended to provide: (1) emergency heat sink, by providing sufficient cooling capacity to remove the sensible and decay heat from the reactor's primary systems for reactor shutdown in the event of unavailability of the normal heat sink;

(2) sufficient cooling water storage capacity to permit emergency cooling tower operation until a makeup water supply can be established; and (3) physical support and protection to equipments and components of this system from external, internal, and environmental hazards.

The cooling tower is a mechanical induced-draft type consisting of three cells. The reservoir and tower facility is a reinforced concrete structure. The reservoir has a pre-cast, reinforced concrete roof. The tank structure is founded on rock. The team concluded that the applicant had performed the scoping and screening for this structure in accordance with the methodology described in the LRA and the rule.

4. Emergency Diesel Generator Building

The applicant included the emergency diesel generator building within the scope of the LRA. The diesel generator building is designed as a seismic Class I structure since it houses the four diesel generators which provide the standby power supply essential for a safe shutdown of the plant upon loss of all offsite power. The EDG building is a reinforced concrete structure and is founded on piles and shear walls. The steel piles are designed to resist the dead weight of the structure (vertical load) only. The lateral force is supported by the concrete shear walls which are founded on rock.

The applicant assessed the diesel generator building as safety-related, its failure could prevent safety-related function, and provides fire protection and, therefore, is within the scope of license renewal. Drawings A-66, “Diesel Generator Building - Plans, Elevations, Details,” Revision 12, 4/29/88 and S-552, “Emergency Diesel Generator Building - Sections & Details,” Revision 18, 8/22/88 depict the architectural arrangement and structural design of the diesel generator building.

Table 2.4.10 of the LRA lists the screening results of all structural components of the diesel generator building requiring aging management. The list includes reinforced concrete walls, floors, beams, columns, and foundations. The list also includes steel components such as structural steel, reinforced concrete embedments, and foundation piles. The team determined that the applicant’s assessment was appropriate. The team concluded that the applicant had performed the scoping and screening for this structure in accordance with the methodology described in the LRA and the rule.

5. Station Blackout Structure

The applicant included the station blackout structure within the scope of the LRA. The station blackout structure houses the switchgear necessary to connect the alternate AC source to Peach Bottom Atomic Power Station. The structure is a pre-fabricated steel enclosure with double doors at either end of the structure to facilitate equipment transfer in and out of the structure as required. The structure is founded on a reinforced concrete floor and piers. Drawing NE-179-5, “Station Blackout Substation,” Revision 2, 10/4/99 depicts the floor plan and sections of the station blackout structure.

The applicant concluded that since the SBO structure was to protect equipment required for SBO, and provides physical supports to those equipment, the structure is within the scope of license renewal. Table 2.4-6 lists the screening result of the SBO structure and foundation. The table lists the steel siding, steel framing, and reinforced concrete foundation and

embedments as the components that require aging management. The team determined that the applicant's assessment was appropriate. The team concluded that the applicant had performed the scoping and screening for this structure in accordance with the methodology described in the LRA and the rule.

6. Yard Structures

Yard structures at PBAPS that are assessed to be within the scope of license renewal consist of various conduit duct banks, manholes, high pressure service water system valve pit, service water pipe tunnel, and condensate storage tank foundation. These structures are located throughout the plant yard of PBAPS. Various drawings show the locations of these structures.

Conduit duct banks house and protect the electric and telephone cables running inside the conduits. Duct banks are normally designed as reinforced concrete box type structures running underground. The applicant stated that all conduit duct banks, regardless of their intended function, are considered to be within the scope of license renewal.

Manholes are designed to be reinforced concrete box type structures that provide access to electric components to meet accessibility requirements. Manholes are also providing protection to electric cables from various environmental conditions. Raising curbs are provided to manholes to protect from intrusion of combustible liquid. Eight manholes are credited for safe shutdown and two manholes are credited for SBO. Various drawings show the location of these manholes. Those ten manholes are considered to be within the scope of license renewal. The high pressure service water valve pit is a concrete structure located in the yard area south of the discharge outlet structure. Drawing C-51, "Underground Piping South Area," Revision 37, 8/8/95, depicts the location of the pit and calls it the high pressure service water valve box. Two high pressure service water valves and one emergency service water valve are located within the valve pit. The valve pit supports and provides protection from the environment for these valves. The applicant determined that the high pressure service water valve pit is within the scope of license renewal.

The service water pipe tunnel is a concrete structure that runs from the circulating water pump structure to the turbine building under the administration building. The service water pipe tunnel provides protection from the environment for the high pressure service water, service water, and emergency service water pipes. Drawing LR-S-001 shows the location of the tunnel and Drawing C-26, "Service Water Pipe Tunnel," shows the design and the arrangement of the tunnel. The service water pipe tunnel is within the scope of license renewal.

The Unit 2 condensate storage tank is located south of the Unit 2 reactor building. Its base is supported on a 14-inch thick perimeter ring reinforced concrete wall and sub-base consisting of crushed stone and sand. The Unit 3 condensate storage tank is located north of the Unit 3 reactor building. Its base is supported on the crushed stone and sand sub-base. License renewal boundary drawing LR-S-001 depicts the locations of the tanks and drawing C-61, "Field Erected Tank Foundations - Refueling & Condensate Water Storage Tanks," Revision 16, 1/27/89, shows the design and arrangement of the tank foundations. The condensate storage tank foundations are within the scope of license renewal.

Table 2.4-7 of the PBLRA lists the screening result of the component groups requiring aging management review. They are reinforced concrete walls, slabs, and foundations. The list also

indicates that the condensate storage tanks foundation and steel concrete embedments are within the scope of the LRA. The team found the scoping and screening results acceptable. The team concluded that the applicant had performed the scoping and screening for this structure in accordance with the methodology described in the LRA and the rule.

7. Intake Screen

The intake screen structure was excluded from the scope of the LRA. The intake screen structure is a composite structure with concrete curbs founded on rock. It also uses structural steel frame to support superstructure of pre-cast concrete panels and built-up roofs on metal decking. The intake structure houses twenty four 10 ft wide traveling water screens as shown in drawing A-70, "C.W. Screen Structure," Revision 3, 6/12/75. The screens are protected by bar racks from debris. The intake screen structure and the bar racks are not in the scope of license renewal. The team discussed the possibility of damaged bar racks and traveling screens impacting the strainer in front of the service water pumps and, thereby, affecting their intended functions. The applicant explained that the circulating water pump structure is equipped with sluice gates which can be closed to isolate the river. The pump structure also has connections to tap the emergency cooling tower reservoir to serve the service water system. Damage to the intake screen structure will not affect any safety-related function, therefore, the intake structure is not in the scope of license renewal. The team found this decision acceptable. The team concluded that the applicant had performed the scoping for this structure in accordance with the methodology described in the LRA and the rule.

8. Discharge Control

The discharge control structure was excluded from the scope of the LRA. The function of the discharge control structure is to control the discharge velocity of the outflow. The structure has four flow openings, three of which have gates to the discharge velocity of the circulating water system.

The team reviewed the relevant description of the system in the plant UFSAR. The system is not safety-related, and the licensee has not included the system in the scope of the License Renewal Application. The team found the licensee's determination acceptable and concluded that the applicant had performed the scoping for this structure in accordance with the methodology described in the LRA and the rule.

9. Dewatering Building

The applicant excluded the dewatering building from the scope of the LRA. The dewatering building, also called the resin dewatering facility, is located west of the Unit 2 reactor building as shown in the license renewal drawing LR-S-001. The dewatering building is constructed of reinforced masonry block walls supported by a 1 ft concrete curb. The roof of the dewatering building is supported by metal decking over commercial, pre-fabricated roof truss as showing in drawings A-238, "Resin Dewatering Facility," Revision 8, 7/8/97, and S-936, "Resin Dewatering Facility," Revision 5, 7/8/97. The dewatering building houses nonsafety-related equipment used for performing solid waste dewatering and packaging functions. Failure of the building will not affect any safety-related system, structures, or components. The building and equipment it houses are not credited for any of the regulated events (fire protection, SBO, ATWS, or EQ). For these reason, the applicant determines that the dewatering building is not within the scope

of license renewal. The team found this decision acceptable. The team concluded that the applicant had performed the scoping for this structure in accordance with the methodology described in the LRA and the rule.

D. Commodity Groups

In accordance with the guidance in NEI 95-10, the applicant placed several components of in-scope systems and structures, in commodity groups for AMR based on similarities in design, material and/or environment. Several passive, long-lived electrical components subject to AMR such as cables were organized into component groups. Mechanical and structural components such as supports and steel were also placed in commodity groups for AMR. To verify that those applicable components of the systems and structures reviewed had been properly screened, the team selected the following three commodity groups for review:

- Cables - All documented cables withing the scope of license renewal that are used for power, control and instrumentation applications were included in this group.

- Component Supports - The component support commodity group included support members, anchors and grout. The support member group included supports and spring hangers for equipment such as piping, HVAC ducts, cable trays, and major equipment. The anchor group included assemblies used to attach electrical panels, cabinets and others to other components or structures. The grout group included support pads and grouted base plates.

- Miscellaneous Steel - The miscellaneous steel group included equipment such as platforms, grating, stairs, ladders, steel curbs and manhole covers treated as a group because of similarity in design, material and/or environment. These structural steels are installed throughout the plant. Some are exposed to the outdoor environment.

The team concluded that for the systems reviewed, the applicant had included the appropriate components in commodity groups as necessary for AMR. The team's review of the three commodity groups, listed above, did not reveal any discrepancies. The team concluded that the applicant had performed the screening of components in accordance with the methodology described in the LRA and the rule.

III. Conclusions

The inspection concluded that the scoping and screening portion of the applicant's license renewal activities were being conducted as described in the license renewal application and that documentation supporting the application is in an auditable and retrievable form. The inspection also concluded that apart from the three open items identified, the scoping and screening process were successful in identifying those systems, structures, and components required to be considered for aging management review in accordance with 10 CFR 54. The following items were identified as open items during this inspection:

(1) Failure to include the RHR and CS keep fill subsystems and portions of the RBCCW system, among other systems in the reactor building, that met the criterion of 10 CFR 54.4(a)(2), nonsafety-related components that could impact safety-related components

when the failed, in the scope of the LRA. **(Open Item 50-277/02-09-01; 50-278/02-09-01)**

(2) Fuse clips (or holders) within the scope of the LRA were classified as active instead of passive by the applicant and apparently not in conformance with 10 CFR 54.21(a). Further discussion by the NRC staff and the industry is needed to resolve this item. **(Open Item 50-277/02-09-02; 50-278/02-09-02)**

(3) For the Station Blackout system, the applicant was not explicit regarding what Conowingo and Susquehanna components are included in the program. **(Open Item 50-277/02-09-03; 50-278/02-09-03)**

The applicant plans to address the first two open items open in their response to previous NRC requests for additional information (RAI). The third item, regarding the applicant's designation of fuse clips/holders as active components, requires further NRC and industry discussion for resolution.

IV Exit Meeting Summary

The results of this inspection were discussed with Messrs J. Grimes and F. Polaski, and other members of the Exelon staff at an exit meeting on April 24, 2002. The applicant acknowledged the findings presented and presented no other dissenting comments, apart from the classification of fuse clips as active components. No material examined during the inspection was considered proprietary.

ATTACHMENT 1

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Exelon Generating Company

L. Corsi, License Renewal Mechanical Engineer
A. Fulvio, License Renewal Site Coordinator and Mechanical Engineer
J. Grimes, Director of Engineering
D. Honan, License Renewal Project Manager
W. Maher, License Renewal Database Administrator
K. Muggleston, License Renewal Mechanical Engineer
A. Ouaou, License Renewal Civil/Structural Engineer
E. Patel, License Renewal Technical Lead
J. Philabaum, License Renewal Licensing Engineer
F. Polaski, Manager, License Renewal
P. Thomas, License Renewal Electrical Engineer

LIST OF DOCUMENTS REVIEWED

PBAPS Licensing and Design Bases Documents

Peach Bottom Atomic Power Station, Units 2 and 3 License Renewal Application, July 2, 2001.
Peach Bottom Atomic Power Station Updated Final Safety Analysis Report, Revision 15, 4/98

P-S-02, Rev.11, Emergency Service Water System (ESW)
P-S-04, Rev.10, High Pressure Service Water System (HPSW)
P-S-05, 4KV System, Revision 11
P-S-07, Diesel Generator and Auxiliary Systems, Revision 13
P-S-08D, Miscellaneous HVAC Systems, Revision 9
P-S-12, Cathodic Protection System, Revision 5
P-S-13, 480V Motor Control Center System, Rev. 13, September 30, 1999
P-S-14, Load Control System, Rev. 12, February 7, 2000
P-S-18, Instrument Nitrogen System, Rev. 17, May 22, 2001
P-S-24, 13 KV System, Revision 11
P-S-26, Rev. 4, Primary Containment Isolation and PCIVs (PCIV)
P-S-38, Standby Liquid Control System, Rev. 8
P-S-44 Core Spray System, Rev. 11
P-S-09, Residual Heat Removal System, Rev. 16
P-S-19, Recirculation System, Revision 11
P-S-33, Reactor Building Closed Cooling Water System, Revision 8
P-S-36, Reactor Water Cleanup System, Revision 6
P-T-01, “Topical Design Baseline Document - Structural,” Revision 8, 2/2/01
P-T-02, Rev. 13, Structures- Containment
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LR-M-332, Primary Containment Leak Testing, Sh. 1, Rev. A
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E-1600, Single Line Meter and Relay Diagram, Rev. 25
E-1602, Single Line Meter and Relay Diagram, Rev. 35
E-1606, Single Line Meter and Relay Diagram, Rev. 44
E-1610, Single Line Meter and Relay Diagram, Rev. 41
E-1612, Single Line Meter and Relay Diagram, Rev. 64
E-1615, Single Line Meter and Relay Diagram, Rev. 66
E-1617, Single Line Meter and Relay Diagram, Rev. 53
E-1700, Single Line Meter and Relay Diagram, Rev. 36
E-1706, Single Line Meter and Relay Diagram, Rev. 41
E-1715, Single Line Meter and Relay Diagram, Rev. 61
E-1717, Single Line Meter and Relay Diagram, Rev. 53
E-1140, “Raceway Layout Turbine BlEDG, Area 3,” Unit 2, Sh2, Rev 69, 10/21/98,
E-5343, Station Blackout Substation Single Line, Sh. 1, Revision 11

M-1-EE-141, “RPS logic Chan. B Panel, Rev 28, 7/25/94
M-1-S-54, “Electrical Schematic Diagram, RPS,” Sh 1, Rev, 84, Sh 35, Rev 84
M-1-T-49, ”Instrument Engineering Diagram Reactor Protection System,” Sh1,Rev12, Sh4,Rev 6

A-12, “Floor Plan at El. 135'-0",” Revision 35, 7/16/97
A-66, “Diesel Generator Building,” Revision 12, 4/29/88
A-70, “C.W. Screen Structure,” Revision 3, 6/17/75
A-238, “Resin Dewatering Facility,” Revision 8, 7/8/97

S-552, “Emergency Diesel Generator Building,” Revision 18, 8/22/88
S-936, “Resin Dewatering Facility,” Revision 5, 7/8/97

NE-179-5, “Station Blackout Substation,” Revision 2, 10/4/99

C-1, Rev. 5, Site Plan.
C-19, “Screen Structure Detail,” Revision 1, 8/31/62
C-26, “Service Water Pipe Tunnel.” Revision 12, 6/19/90
C-51, “Underground Piping SouthArea,” Revision 37, 8/8/95
C-61, “Field Erected Tank Foundation,” Revision 16, 1/27/89
C-63, “Electrical & Telephone Manhole Details,” Revision 15, 9/9/88
C-109, Rev. 8, C. W. Discharge Control Structure, Plans ans Sections.
C-110, Rev. 5, C. W. Discharge Control Structure, Wing Wall and Spilways.

M-300, P&I Diagram Legend, Sh. 1, Rev. 46
M-390, Drywell Cooling Flow Diagram, Sh. 1, Rev. 27

<u>LRA Scoping (LR-C-14-3 series) and Screening (LR-C-14-6 series) Reports</u>

High Pressure Service Water System (HPSW)
Emergency Service Water System (ESW)
Primary Containment Isolation and PCIVs (PCIV)
Standby Liquid Control System

Core Spray System
Emergency Diesel Generator Building Ventilation
System 51H, Station Blackout
Diesel Generators (52)
Diesel Generator Engine (52A)
Diesel Generator & Controls (52B)
Diesel Generator Starting Air (52C)
Diesel Generator Fuel Oil (52D)
Diesel Generator Jacket Cooling (52E)
Diesel Generator Air Coolant (52F)
Diesel Generator Lube Oil (52G)
13 KV Electrical Distribution System.
4 KV Electrical Distribution System
Cathodic Protection System
Station Blackout System
Reactor Building Closed Cooling Water
Primary Containment and PCIVs
Reactor Water Cleanup
Residual Heat Removal - LPCI Mode
Reactor & Recirculation Piping
Reactor Pressure Vessel & Internals
Residual Heat Removal
Reactor and Recirculation Piping
Recirculation Pump and Valves
Structures- Containment
Structures- Emergency Cooling Tower and Reservoir
Structures- Discharge Control Structure

Miscellaneous

NEI 95-10 (Revision 3) Industry Guideline for Implementing The Requirements of 10 CFR Part 54 - The License Renewal Rule, March 2001

NUREG/CR-6001, Aging Assessment of BWR Standby Liquid Control Systems, August 1992
Material Safety data Sheet for Enriched Sodium Pentaborate (CAS# 11139-65-4)
EPRI TR-105707, BWR Vessel and Internals Project, BWRVIP-06, October 1995

LIST OF ACRONYMS USED

AAC	Alternate AC
AC or ac	Alternating Current
ADS	Automatic Depressurization System
AMR	Age Management Review
CFR	Code of Federal Regulation
CRL	Component Record List
CS	Core Spray
DBA	Design Basis Accident
DBD	Design Basis Document
ECCS	Emergency Core Cooling System
ECTR	Emergency Cooling Tower and Reservoir
EDG	Emergency Diesel Generator
ESW	Emergency Service Water
HPCI	High Pressure Coolant Injection
HPSW	High Pressure Service Water
KV or KV	Kilovolt
LOCA	Loss of Coolant Accident
LOOP	Loss of Offsite Power
LPCI	Low Pressure Coolant Injection
LR	License Renewal
LRA	License Renewal Application
P&ID	Piping and Instrument Diagram
MCC	Motor Control Center
NEI	Nuclear Energy Institute
PBAPS	Peach Bottom Atomic Power Station
PCIS	Primary Containment Isolation System
RBCCW	Reactor Building Closed Cooling Water
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
RPV	Reactor Pressure Vessel
RPS	Reactor Protection System
RWCU	Reactor Water Cleanup
SBO	Station Blackout
SBLC	Standby Liquid Control System
SSC	Systems, Structures and Components
UFSAR	Updated Final Safety Analysis Report

ATTACHMENT 2

Peach Bottom Atomic Power Station License Renewal Inspection
Structural/Systems Selected for Inspection

Mechanical Systems Within Scope of License Renewal	
Description	**Comment**
Auxiliary Systems	
Standby Liquid Control System	
High Pressure Service Water System	
Emergency Service Water System	
Emergency Diesel Generator	
Diesel Generator Building Ventilation System	
Reactor Coolant System	
Reactor Pressure Vessel and Internals	
Reactor Recirculation System	
Engineered Safety Features System	
High Pressure Coolant Injection	
Primary Containment Isolation System	Includes containment boundary piping and components from out-of-scope systems which interface with the primary containment.
Reactor Core Isolation Cooling System	
Residual Heat removal System	
Core Spray System	
Steam and Power Conversion System	
Feedwater System	Portions of the system required to support HPCI and RCIC injection flowpaths, reactor coolant pressure boundary and primary containment boundary are the only parts of feedwater included in scope.

Mechanical Systems Not in Scope of License Renewal	
Description	**Comment**
Auxiliary Systems	
Reactor Building Closed Cooling Water System	Piping and components associated with the primary containment boundary are included with PCIS.
Reactor Water Clean-up System	RWCU system piping and components inside containment are included with Reactor Recirculation System. RWCU containment penetration piping and components are included with PCIS.
Instrument Air System	Piping and components associated with the outboard main steam isolation valve air accumulator pressure boundary are included with the main steam system. Piping and components associated with safety grade instrument gas system pressure boundary are included with the safety grade instrument gas system. Piping and components associated with nitrogen backup to the battery and emergency switchgear ventilation system are included with the battery and emergency switchgear ventilation system.
Engineered Safety Features System	
Drywell Ventilation System	

Electrical and I&C Systems Within Scope of License Renewal	
Description	**Comments**
4 KV	
480 V Emergency Load Centers	
480 V Emergency Motor Control Centers	
Station Blackout	
Reactor Protection System	
DC System	

Electrical and I&C Systems Not in Scope of License Renewal	
Description	**Comments**
13 KV	Equipment credited for Fire Safe Shutdown and Station Blackout are included in those systems.
480 Volt Load Centers	
Cathodic Protection	

Structures Within Scope of License Renewal	
Description	**Comments**
Containment Structure	
Reactor Building Structure	
Emergency Cooling Tower and Reservoir	
Station Blackout Structures and Foundations	
Yard Structures	
Emergency Diesel Generator Building	

Structures Not in Scope of License Renewal	
Description	**Comments**
Dewatering Building	
Discharge Control	
Intake Screen	