

January 13, 2000

Mr. Charles H. Cruse
Vice President - Nuclear Energy
Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702

SUBJECT: NRC LICENSE RENEWAL INSPECTION REPORT NO. 05000317/99012 AND
05000318/99012

Dear Mr. Cruse:

This letter refers to the inspection conducted from November 29 to December 3, 1999, at the Calvert Cliffs Nuclear Power Station (CCNPP), Units 1 and 2. This inspection was the last of three planned license renewal inspections. This inspection reviewed license renewal corrective actions taken as a consequence of previous license renewal inspections, and verified the status of selected changes originally proposed in the license renewal application and Baltimore Gas and Electric's (BGE) aging management reports. This inspection was discussed with you and members of your staff on December 3, 1999, **by telephone on December 10, 1999, and January 11, 2000; with a final exit meeting by telephone on January 12, 2000.**

BGE satisfactorily resolved the issues raised during the previous license renewal inspections. BGE maintained consistency between the license renewal application, license renewal annual update, and the aging management reports by controlling the proposed changes through their license renewal corrective action system. All the corrective actions proposed, by BGE, during the previous inspections have been incorporated in the aging management reports, license renewal application or are scheduled for inclusion in appropriate licensee documents.

During this inspection, the NRC inspectors discovered that an incorrect assumption was used in analyzing a change in plant design that excluded the station black-out function of the OC emergency diesel generator from the license renewal application. **BGE corrected this assumption and considered the associated impact. BGE has now included the OC emergency diesel generator, its support structure and building, within the scope of license renewal for station black-out.**

The NRC Office of Nuclear Reactor Regulation (NRR) requested the inspectors verify a statement made in the NRC Safety Evaluation Report, dated November 16, 1999, about the relationship between the insulation on the chemical and volume control (CVCS) and the system ability to maintain system temperature above technical specification limits. The inspectors could not verify the information requested by NRR. As a consequence, the inspectors returned the matter to NRR for resolution. **The issue of CVCS insulation was resolved by NRR and BGE as discussed in NUREG-1705, "Safety Evaluation Report related to the license renewal of Calvert Cliffs Nuclear Power Plant, Units 1 and 2, Docket Nos 50-317 and 50-318."**

Mr. Charles H. Cruse

-2-

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and any response you may wish to make will be placed in the NRC Public Document Room. If you have any questions, please call me at (610) 337-5376.

Sincerely,

ORIGINAL SIGNED BY

William H. Ruland, Chief
Engineering Support Branch
Division of Reactor Safety

Docket Nos. 05000317 and 05000318
License Nos. DPR-53; DPR-69

Enclosure: NRC Combined Inspection Report Nos. 05000317/99012 and 05000318/99012

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-3-

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos: 05000317; 05000318
License Nos: DPR-53; DPR-69

Report Nos: 05000317/99012; 05000318/99012

Licensee: Baltimore Gas and Electric Company

Facility: Calvert Cliffs Nuclear Power Plant, Units 1 and 2

Location: Lusby, Maryland

Dates: November 29 - December 3, 1999
January 11-12, 2000 (In-Office)

Inspectors: Michael C. Modes, Sr. Reactor Inspector
Fred Bower, Resident Inspector, Calvert Cliffs
April Smith, Reactor Inspector (Intern)

Approved by: William H. Ruland, Chief
Engineering Support Branch
Division of Reactor Safety

EXECUTIVE SUMMARY

Calvert Cliffs Nuclear Power Plant Units 1 & 2 Inspection Report Nos. 05000317/99012 and 05000318/99012

This license renewal inspection reviewed the applicants' license renewal corrective actions taken as a consequence of previous renewal inspections. This license renewal inspection verified the status of some of the changes proposed in the license renewal application and aging management reports.

- BGE satisfactorily resolved the issues raised during the previous license renewal inspections. BGE maintained consistency between the license renewal application, license renewal annual update, and the aging management reports by submitting any proposed changes through their license renewal corrective action system. All the corrective actions proposed during the previous inspections have been incorporated in the aging management reports, changes to the license application, or scheduled for inclusion in appropriate licensee documents. (Section E2.1)
- During this inspection, the NRC inspectors discovered that an incorrect assumption was used in analyzing a change in plant design that excluded the station black-out function of the OC emergency diesel generator (EDG) from the license renewal application. **BGE corrected this assumption and considered the associated impact. This change was not included in the annual update to the license renewal application for two reasons. First, CCNPP had not completed the OC EDG modification at the time the license renewal application was being generated, and second, BGE considered the use of the four hour coping scenario (instead of a one hour coping period) to be the conservative choice; a position they maintained through the annual up-date process. It was only after the NRC questioned the OC diesel omission from the application that BGE concluded that to use the four-hour coping was conservative electrically but not conservative for the purpose of license renewal scoping. The effect was to scope out the OC EDG.**

BGE has now included the OC emergency diesel generator, its support structure and building, within the scope of license renewal for station black-out. Based on our review of the facts surrounding the original incorrect assumption, our understanding of the licensee's corrective action process for assessing other scoping issues, and the extent-of-condition review performed by BGE, the NRC determined this issue was resolved.(Section E2.1)

- The NRC Office of Nuclear Reactor Regulation (NRR) requested the inspectors verify a statement made in the NRC Safety Evaluation Report, dated November 16, 1999, about the relationship between the insulation on the chemical and volume control and the system ability to maintain system temperature above technical specification limits. The inspectors could not verify the information requested by NRR. As a consequence, the inspectors returned the matter to NRR for resolution. **The issue of CVCS insulation was resolved by NRR and BGE as discussed in NUREG-1705, "Safety Evaluation Report related to the license renewal of Calvert Cliffs Nuclear Power Plant, Units 1 and 2, Docket Nos 50-317 and 50-318."** (Section E2.1)

- The inspectors reviewed information related to the current status of issues raised in inspection reports 50-317/99-02, 50-318/99-02, 50-317/99-04, and 50-318/99-04. These issues were (a) contradictory statements made about cable insulation in the license renewal application, (b) cracking observed in concrete at buttresses three and four of Unit 1, (c) leaking of the Salt Water System, (d) water hammer of component supports, (e) contradictory statements made about the fire and smoke detection system, (f) management of aging caused by corrosion of the fire protection system, (g) an error in scoping of the 1A Diesel Building, (h) settlement cracking in the Auxiliary Building, (i) primary water stress corrosion cracking in the reactor coolant system, and (j) inadequacy of checklists used to manage aging in the heating ventilating and air conditioning systems of the Control Room. These issues were resolved. (Section E2.1)

Report Details

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 License Renewal Application (71002)

a. Inspection Scope

After the previous NRC license renewal inspections, several issues were placed into the licensee's license renewal corrective action program. This inspection focused on the current status of these corrective actions and other changes made as a consequence of the previous inspections. The NRC inspectors determined the status of the items by reviewing corrective action documents known as Temporary Problem Reports (TPR), verifying the accuracy of the proposed corrections made to the aging management reports (AMR) or the license renewal application (LRA), and reviewing current administrative procedures for their consistency with the proposed TPRs or AMRs.

b. Observations and Findings

0C Diesel Building

The OC diesel is required to supply power during some fire protection scenarios. As a consequence of this function the NRC team concluded, during the inspection of February 8-12, that the nonsafety-related OC (a.k.a. Station Black Out or SBO diesel) Diesel Building No. 2 should be within the scope of license renewal, per 10 CFR 54.4(a)(3), because FSAR Section 8.4.5.1 states the SBO diesel components shall be protected against likely weather events (not including tornados and hurricanes). At the time of the inspection, BGE disagreed with this conclusion because they considered this a "cascading" scenario. It was BGE's view that the principle of cascading, i.e., safety-related and nonsafety-related components supporting a safety-related component function, did not apply to this part of the rule but applied only to parts (a)(1) and (2). Because this implication had not been previously considered by the NRC, nor been understood as a BGE position underlying the BGE application, this was classified as an inspector follow up item: IFI 50-317-318/99-002-01. In resolving this issue three relevant facts were considered during the current inspection.

- (1) The NRC draft Safety Evaluation Report (SER) of March 21, 1999, included two Open Items that relate to this Inspector Follow-up Item (IFI)
 - (A) Open Item 2.2.3.8-1 indicated the OC building should be in scope per 10 CFR 54.4(a)(2) because although Building No. 2 is not safety-related, it has been analyzed under FSAR 8.4.5.1.e for its impact on the adjacent Safety-Related Emergency Diesel Generator (SREDG) Building No. 1, to which it is attached. It was BGE's view that the concern addressed in the IFI was being addressed more appropriately under an (a)(2) scenario, in keeping with the basic position held at the time by BGE, and this should be sufficient justification for closing the IFI. The NRC inspectors agreed that the attached structures and components should be considered under (a)(2) because their failure could affect the function of the safety-related diesel building, but did not agree this affected the IFI because the IFI

addressed the (a)(3) function of the OC diesel building not the (a)(2) function.

- (B) Open Item 2.2.3.23.2.1-1 addressed duct work associated with EQ components, and sought justification for the duct work's absence from scoping under 10 CFR 54.4(a)(3). In this case, the NRC postulated the duct work played a support role for the EQ component in performing its intended function. BGE's response indicated the duct work is assumed to fail during a design basis event and the components are designed to perform their intended function in the absence of the air directed by the duct work. BGE also restates, in the response, their position that cascading failure effects characterized by 10 CFR 54.4(a)(2) need not be applied to 10 CFR 54.4(a)(3) scoped items. Because the duct work performs no support function this example is not applicable to the IFI.
- (2) NRR responded to the fundamental question raised by BGE about applying the principle of cascading to the third part of the rule in a letter to Nuclear Energy Institute (NEI) dated August 5, 1999. In part 3 of the letter, specifically addressing the question of (a)(3), NRR states: "Therefore, all systems, structures, and components (SSC) that are relied upon in the plant's current licensing basis (CLB) (as defined in 10 CFR 54.3), plant experience, industry experience (as appropriate), and existing engineering analysis to perform a function that demonstrates compliance with and operation within the Commission regulations identified under 10 CFR 54.4(a)(3) are required to be included within the scope of the rule. For example, if a nonsafety-related diesel generator is required for safe shut down under the fire protection plan, the diesel generator and all SSCs specifically required for that diesel to comply with and operate within the Commission's regulations based on the applicant's design specifications for the diesel shall be included within the scope of the license renewal under 10 CFR 54.4(a)(3)". The letter goes on to state the NRC agrees the "second, third, and fourth level of support" need not be considered. The NRC also agreed, in the letter, that postulated accidents not part of the CLB need not be considered. The first level of support, however, as illustrated in the example, must be considered. BGE uniformly told the inspectors that all the implications of the CLB are considered when attempting to scope under (a)(3). BGE and the NRC are in agreement in applying first level supporting SSCs to this part of the rule.
- (3) Additionally, BGE pointed out the OC diesel is not operating as an SBO diesel when it is called upon to supply power during a fire event. It is for this reason that the diesel does not have to meet the conditions described in FSAR 8.4.5.1. Specifically, the diesel does not have to be protected from "weather related events" because the weather events referred to are those that cause the SBO. Weather events are not assumed to occur coincident with a fire.

The NRC inspectors agree with the view expressed by BGE in (3) above and is closing IFI 50-317, 318/99-002-01.

As a consequence of responding to the above question, BGE discovered that at the time they cut off the license renewal analysis process and switched to developing the original license renewal application itself, Calvert Cliffs was just tying in the new OC diesel installation. It was the assumption in the original license renewal application that Calvert Cliffs was a 4 hour coping plant and the OC diesel could be used to eventually make Calvert Cliffs a 1-hour coping plant. The OC was not taken credit for and, therefore, did not need to be scoped into the application for the purpose of station black-out. However, between the submittal of the application and the question posed by the inspectors, Calvert Cliffs changed its licensing basis to take credit for the OC diesel for station black out, and became a 1-hour coping plant. The change was not captured by the original application. BGE issued TPR 99-067 to address the need to scope the OC diesel and building, and IR3-020-482 to determine why the OC diesel licensing change was not captured in the license renewal application.

BGE determined that this incorrect assumption used in analyzing a change in plant design, was not included in the license renewal application for two basic reasons. First, as pointed out earlier, CCNPP had not completed the OC EDG modification at the time the license renewal application was being generated; and second, BGE considered the use of the four-hour coping scenario to be the conservative choice; a position they maintained through the annual up-date process. It was only after the NRC questioned the OC diesel omission from the application that BGE concluded that the decision to use four-hour coping was conservative electrically, but not conservative for the purpose of license renewal scoping. The effect of the original decision was to scope out the OC EDG. BGE has now included the OC diesel, its support structure and building, within the scope of license renewal. Based on our review of the facts surrounding this incorrect assumption, our understanding of the licensee's corrective action process for assessing other scoping issues, and discussions with your staff regarding the extent-of-condition review, the NRC determined this issue was resolved.

Chemical and Volume Control System (CVCS)

The NRC Office of Nuclear Reactor Regulation (NRR) requested the inspectors verify a statement in the November 16, 1999, version of the Calvert Cliffs License Renewal Safety Evaluation Report (SER), Section 2.2.3.13.2.1, "Chemical and Volume Control System Within the Scope of License Renewal". This SER section says, in part, the applicant stated the heaters were designed to maintain system temperature above technical specifications limits without insulation. NRR requested the inspectors verify that the capacity of the heaters, for the tanks and pipes in the CVCS system, was sufficient to maintain the Technical Specification required temperature above the boron precipitation point without thermal insulation on the tanks and pipes.

The inspectors reviewed the temperature requirements for the boration flow paths. During the conversion to Improved Technical Specifications (TS), the requirement to maintain boric acid storage tank (BAST) and boration flow path temperature was relocated from (TS) 3/4.1.2, "Boration Systems" to Technical Requirements Manual (TRM) 15.1.2, "Boration Flow Paths - Operating" and 15.1.3, "Boration Flow Paths - Shutdown." The inspectors noted that verifying the temperature of the BASTs and the CVCS piping in the boration flow path was a seven-day surveillance requirement versus the 24-hour requirement referenced in the SER. The inspectors found that current plant operator logs required verification the BAST heaters and the CVCS piping heaters were operating within the correct temperature band once during every 12-hour shift. Additionally, alarms in the control room were available to provide indication that the temperature of the BASTs or either boric acid flow train were out of a specified operating range.

The inspectors reviewed and discussed the presence of thermal insulation on the CVCS system with BGE license renewal personnel to verify the statements in the SER. BGE personnel contended the statement in the SER that the applicant stated the heaters were designed to maintain system temperature above technical specifications limits without insulation was erroneous. Calculations reviewed with BGE personnel indicated the heat tracing was sized assuming thermal insulation was present. No calculations were available for the sizing of the BAST heaters. BGE personnel stated that thermal insulation on the CVCS piping and the BASTs were considered within the design of the CVCS system.

BGE personnel stated that the thermal insulation performed none of the intended functions listed in section 5.2.1.1 of the application, and as such is not within the scope of license renewal. BGE personnel also stated that since the thermal insulation was excluded from the scope of license renewal, an aging management program was not developed. BGE did not provide additional information to justify excluding the thermal insulation from the scope of license renewal.

The inspectors could not verify the information requested by the NRR reviewer. Based on the information above, the inspectors concluded that thermal insulation was required to maintain the boration flow paths within the temperature limits specified by the TRM. Given that the failure of the thermal insulation could allow the temperature to drop below the TS specified temperature and could prevent the CVCS system from satisfactorily controlling the reactor coolant boric acid concentration, an intended function identified in section 5.2.1.1 of the application, BGE did not provide sufficient information to justify excluding the thermal insulation from the scope of license renewal. As a consequence, the inspector returned the matter to NRR for resolution. The issue of CVCS insulation was resolved by NRR and BGE as discussed in NUREG-1705, "Safety Evaluation Report related to the license renewal of Calvert Cliffs Nuclear Power Plant, Units 1 and 2, Docket Nos 50-317 and 50-318."

Fire Pump House

BGE identified a single function for the Fire Pump House to protect the fire and jockey pumps and their control cabinets from weather. The NRC team discovered, in the FSAR, an additional function attributed to the Fire Pump House. The FSAR describes a dike within the Fire Pump House that prevents a fuel oil fire from spreading to the electrically driven fire pump. This function was not considered by BGE when they

applied their scoping methodology to the Fire Pump House. BGE agreed with the NRC team's conclusion that the the Fire Pump House belonged within the scope of license renewal.

BGE initiated resolution by issuing TPRs 99-012 and 99-016. These became the vehicle for revising the scoping documents and issuing an Aging Management Report. The information about the resolution was provided to the NRC in BGE letter dated July 2, 1999.

The inspectors reviewed Fire Protection Screening Tool, Revision 1, System/Structure Information, Revision 7, System Level Scoping Results, Revision 7, Aging Management Review Report for the Fire Pump House LCMAMRR-FPH, Revision 0, and Component Level Scoping Results for the Fire Pump House LCMCOMP-FPH, Revision 0. The documents reflected the necessary changes to include the Fire Pump House additional function. BGE did not identify any applicable aging mechanisms attributable to the dike wall.

The inspectors concluded the actions taken were sufficient to address the NRC concerns expressed in Report 99-02.

Cables and Terminations

Calvert Cliffs Nuclear Power Plant (CCNPP) License Renewal Application (LRA), Section 6.2 - Electrical Commodities, stated thermal aging was plausible for the polyolefin rubber insulated wiring contained in the 480 volt alternating current motor control centers. However, Section 6.1 - Cables, states, "Internal panel wiring at CCNPP is not exposed to high temperatures or high radiation levels; therefore, aging which could effect the functionality of the wiring during the period of extended operation is not considered plausible." The licensee corrected these contradictory statements in a revision to the aging management program report (AMR) issued April 7, 1999. The licensee also issued a letter to the NRC, dated April 2, 1999, detailing the changes to the LRA as a result of these contradictory statements. The inspectors reviewed the revision to the AMR and the changes to the LRA and found that the licensee revised both documents to agree with Section 6.2 of the LRA, stating that thermal aging is plausible for the specified cables.

Containment Structure

During a previous NRC license renewal inspection, cracks were observed at buttresses three and four of Unit 1. This cracking appeared to be an observed aging effect excluded by the Baltimore Gas and Electric (BGE) LRA. BGE is required to have an aging management program in place by September 2001 under the accelerated implementation of American Society for Mechanical Engineers Boiler and Pressure Vessel Code (ASME) Section XI, Subsection IWL by NRC rule 50.55a(g)(6)(ii)(B) which will manage this aging effect, for which BGE can take credit. BGE issued Technical Problem Report TPR 99-036 to propose a change to the AMR that will indicate corrosion of embedded steel/rebar is plausible and CCNPP will use administrative procedure MN-1-319 to manage the aging effects. BGE also issued a letter to the NRC dated July 2, 1999, detailing this change in the LRA. The inspectors reviewed the TPR and the letter to the NRC and found that the proposed changes in each were consistent. Section 1.0 of Attachment 3 of the administrative procedure MN-1-319 includes a

checklist as a guideline to a comprehensive walkdown of the containment building to monitor the aging effect of corroded embedded steel and rebar.

Salt Water System

Leaching of the Salt Water System (SWS) is not considered plausible in the CCNPP LRA yet there is an extensive program at CCNPP to remediate the effect of this corrosion in the SWS. The conclusion that leaching is not plausible is inconsistent with the amount of leaching present and the program in place to control it. BGE generated TPR 99-030 to include leaching as a plausible aging effect. In response to the TPR, the AMR was revised to include the plausibility of selective leaching of the SWS. The licensee also submitted a letter to the NRC dated July 2, 1999 detailing the proposed addition of leaching to the LRA. These documents, reviewed by the inspectors, consistently address the problem of leaching.

Component Supports

Water hammer and thermal expansion loading are not, in of themselves, an aging effect. However, a piping system repeatedly subjected to these events can manifest aging effects in bending of hangers and damage to the piping system. In a response to an NRC request for additional information (RAI) dated November 19, 1998, BGE agreed that loading due to water hammer and thermal expansion affected threaded fasteners of component supports. Calvert Cliffs (CCNP) further agreed that aging effects associated with water hammer can be plausible and issued TPR 99-035. TPR 99-035 was incorporated in TPR 99-002, an annual update of all open TPRs. TPR 99-002 adds thermal expansion of threaded fasteners as a plausible aging effect and proposes that the changes be made to the AMR. The licensee also submitted a letter to the NRC dated July 2, 1999, detailing BGE's proposed changes to the LRA with respect to water hammer and thermal expansion. The inspectors reviewed both TPRs and the letter and found that these documents are consistent in including water hammer and thermal expansion of threaded fasteners as plausible aging effects.

Fire and Smoke Detection Systems

Section 5.10 of the LRA states that because the intended function performed by the fire and smoke detection systems is passive and is addressed in an electrical commodity evaluation, no further aging management reviewed is required. However, the fire protection AMR states that no further review is required because the fire and smoke detection system does not have a pressure boundary intended function. BGE initiated TPR 99-031 which proposes a revision to the fire protection AMR that agrees with the LRA. The licensee intends to incorporate this TPR into another annual TPR update (TPR 99-047). The inspectors reviewed the current status of both TPRs and found the results consistent with the agreement reached during the previous inspection.

Fire Protection System

For fire protection system number 013, general corrosion or cracking was identified as a plausible aging effect of pressure boundary degradation. There is no procedural requirement to monitor the system for general corrosion or to walkdown the system piping to check for leakage caused by cracking. BGE depended on the monitoring program to reveal the aging effect. However, the monitoring programs are macroscopic while the aging effect is microscopic. The aging effect may not be revealed because the effect is hidden by the error caused by the tolerance of the measuring device used to test or monitor the system. BGE documented the matter in TPR 99-034 and also submitted a letter to the NRC dated July 2, 1999. The inspectors reviewed the TPR and found that it proposes to change the AMR to include fire protection activities and normal operating condition bounding as methods of age management. It also proposes taking credit for system walkdown guidance in administrative procedure MN-1-319 as aging management of the fire protection system. The letter states changes to the LRA consistent with the TPR.

1A Diesel Building

BGE originally determined that all seven intended structural functions listed in their application are applicable to the Auxiliary Building and Safety-Related Diesel Generator Building Structures (SRDG). The intended functions are to provide structural and/or functional support to safety-related equipment, provide shelter/protection to safety-related equipment, serve as a PB or a fission product retention barrier to protect public health and safety in the event of any postulated DBEs, serve as a missile barrier, provide structural and/or functional support to NSR equipment whose failure could directly prevent satisfactory accomplishment of any of the required safety-related functions, provide flood protection barrier, and provide a rated fire barrier to confine or retard a fire from spreading to or from adjacent areas of the plant. The NRC inspection team observed that in Table 3.3E-1 of the Application for License Renewal, intended function number three which was to "serve as a pressure boundary or a fission product retention barrier to protect public health and safety in the event of any postulated DBEs" was not applicable to the SRDG. As NRC Report 50-317;318/99-02 discussed, this exception should be noted in the original application on page 3.3E-5 by modifying the second sentence under the section entitled "Scoped Structures and Their Intended Functions".

The NRC inspectors reviewed a letter to the NRC, dated July 2, 1999, in which the applicant implemented the necessary change to resolve this contradiction in the application. The applicant stated that in Section 3.3E.1 Structures Scoping, under "Scoped Structures and Their Intended Functions" (page 3.3E-5) the sentence beginning "All seven generic structural functions ..." should read "the generic structural functions applicable to these structures are shown in Table 3.3E-1".

Auxiliary Building

Based on the findings of a walkdown performed in November 1994 of all accessible portions of approximately 15 walls, BGE dismissed, as plausible, the cracking of masonry walls due to settlement. However, during the NRC walkdown of April 1999, cracks were observed in a concrete wall in Unit-1 at the 5 foot elevation, Fan Room, south of Door number 212. In addition, an Issue Report Resolution Document (IRRD)

IRI-024-713 dated September 20, 1996, addressing the operability of a pipe support in the Auxiliary Building with a crack running diagonally under the support, concluded, "The diagonal cracking in this wall appears to be the result of settling of the Auxiliary Building". The conclusion of the IRRD did not support the conclusion arrived at in the AMR for the Auxiliary Building. This contradiction was pointed out by the NRC team and discussed with BGE. BGE issued TPR 99-037 on April 15, 1999 to address this issue which intended to revise Appendix J of the AMR to indicate that cracks in the building were due to initial settlement. In addition, Section 3.3E of the LRA, which states that no cracks were observed, was going to be revised.

The NRC inspectors reviewed the BGE letter, dated July 2, 1999, in which BGE revises their application by replacing the first sentence in the first paragraph on page 3.3E-13 to read, "There has been no evidence of settlement at CCNPP that would affect structural integrity". There is no evidence, developed by either the NRC or BGE, to contradict this statement. As a consequence, settlement of CCNPP is not an aging mechanism requiring management.

Reactor Coolant System

The AMR for RCS Group 064-CC-01 credited the ISI program with managing primary water stress corrosion cracking (PWSCC) in the RCS. The ISI program cannot fully cover the aging affects in the RCS because piping that is 1" nominal diameter or less is excluded from ISI requirements. This issue was addressed in TPR 99-032 which removed the ISI program from aging management of the RCS system. Instead, the aging effects will be managed by the existing Alloy 600 program which was to be modified to include all the possible locations not currently accomplished by the current program. In attachment (3) to the BGE July 2, 1999 letter to the NRC, BGE made changes to Section 4.1.2, Aging Management to reflect the above TPR resolution. The attachment further states that CCNPP Technical Procedure CP-204, "Specification and Surveillance Primary Systems" and the Alloy 600 Program will remain as the credited programs for mitigating and discovering the effects of PWSCC in RCS piping one-inch and less.

Control Room HVAC

BGE identified routine system walkdowns, its current PM program, and a new Age Related Degradation Inspection program as the aging management methods for the CRHVAC system. The NRC team found the current checklists would not manage the ARDMs and their effects in such a way that intended functions of the CRHVAC components would be maintained during the period of extended operation. BGE provided TPR No. 97-129 dated October 21, 1997, which recommended a specific line item be added to each PM task to inspect for general, crevice, and microbiological corrosion and pitting of fan housings, fasteners, heat exchanger housings, and damper metallic components, and for elastomer degradation and wear of fan elastomer seals. The ARDI program will perform a one- time inspection of component interior surfaces, not otherwise inspected, to determine if significant degradation is occurring and additional inspections will be required.

The NRC inspectors reviewed TPR 97-129 and determined the status has not changed. This TPR consists of 22 pages of changes that are going to be made to the applicable checklists to capture the referenced aging affects.

c. Conclusion

BGE satisfactorily resolved the issues raised during the previous license renewal inspections. BGE maintained consistency between the license renewal application, license renewal annual update, and the aging management reports by submitting the proposed changes through their license renewal corrective action system. All the corrective actions proposed during the previous inspections have been incorporated in the aging management reports, changes to the license application, or scheduled for inclusion in the appropriate licensee documents.

E8 Miscellaneous Engineering Issues

- E8.1 (Closed) Inspector Follow-Up Item 50-317-318/99-002-01 Because the OC diesel is not operating as an SBO diesel when it is called upon to supply power during an event caused by a fire, the diesel does not have to meet the conditions described in CCNPP FSAR Paragraph 8.4.5.1. The diesel does not have to be protected from “weather-related events” because the weather events referred to are those that cause the SBO (see Section E2.1).

V. MANAGEMENT MEETINGS

X1 Exit Meeting Summary

At the conclusion of the inspection, on December 3, 1999, the inspectors presented the inspection results to Mr. Cruse and others of BGE management. BGE acknowledged the findings presented.

The inspectors presented the final conclusion and results of this inspection during a telephone exit interview on Friday, December 10, 1999, with Mr. Heibel and his staff. The applicant did not dispute the inspection findings during this interview. The inspectors discussed the facts surrounding the omission of the OC diesel from the license application and annual update during a telephone call on January 11, 2000. As a consequence of further developing these facts, the inspectors performed another telephone exit interview on January 12, 2000, during which BGE acknowledged the findings presented.

PARTIAL LIST OF PERSONS CONTACTED

Calvert Cliffs

C. Cruse	Site Vice President
B. Doroshuk	VP Constellation Nuclear Services
R. Heibel	Manager Nuclear Project Management Division
P. Katz	Plant General Manager
D. Shaw	Project Manager Constellation Nuclear Services
J. Rycyna	Director Constellation Nuclear Services
E. Taormina	Technical Consultant Constellation Nuclear Services
C. Yoder	Project Director Life Cycle Management

NRC

F. Bower	Resident Inspector
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ITEMS CLOSED

IFI	50-317;318/99-002-01	Inspector Follow-up regarding implementation of 10 CFR 50.54(a)(3)
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PROCEDURES USED

71002	License Renewal Inspection
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LIST OF ACRONYMS

AMR	Aging Management Report
ARDI	Age Related Degradation Inspection
ARDM	Age Related Degradation Mechanisms
ASME	American Society of Mechanical Engineers
BAST	Boric Acid Storage Tank
BGE	Baltimore Gas and Electric
CCNPP	Calvert Cliffs Nuclear Power Plant
CLB	Current Licensing Basis
CRHVAC	Control Room HVAC
CVCS	Chemical and Volume Control System
HVAC	Heating Ventilation and Air Conditioning
IFI	Inspector Follow-Up Item
IRRD	Issue Report Resolution Document
ISI	Inservice Inspection
LRA	License Renewal Application
NRR	Nuclear Reactor Regulation
PM	Preventative Maintenance
PRA	Probabilistic Risk Assessment
PWSCC	Primary Water Stress Corrosion Cracking
RCS	Reactor Coolant System
SBO	Station Black Out
SCC	Stress Corrosion Cracking
SER	Safety Evaluation Report
SREDG	Safety Related Emergency Diesel Generator
SSC	Systems, structures, and Components
SW	Salt Water System
TPR	Technical Problem Report
TRM	Technical Requirements Manual
TS	Technical Specification
VAC	Volts Alternating Current
UFSAR	Updated Final Safety Analysis Report