

July 14, 2000

Mr. H.L. Sumner
Vice-President - Hatch Project
Southern Nuclear Operating Company, Inc.
40 Inverness Center Parkway
P.O. Box 1295
Birmingham, AL 35201-1295

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
LICENSE RENEWAL APPLICATION OF PLANT HATCH

Dear Mr. Sumner:

By letter dated February 29, 2000, the Southern Nuclear Operating Company, Inc. (SNC), submitted for the Nuclear Regulatory Commission's (NRC's) review an application pursuant to 10 CFR Part 54, to renew the operating license for the Edwin I. Hatch Nuclear Plant, Units 1 and 2 (Plant Hatch). The NRC staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete its safety review.

The enclosed RAIs are numbered to coincide with the staff's safety evaluation report. However, each RAI references the pertinent section of the license renewal application.

Please provide a schedule by letter, electronic mail, or telephonically for the submittal of your responses within 30 days of the receipt of this letter. Additionally, the staff would be willing to meet with SNC prior to the submittal of the responses to provide clarifications of the staff's requests for additional information.

Sincerely,

/RA/

William F. Burton, Project Manager
License Renewal and Standardization Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos. 50-321 and 50-366

Enclosure: Request for Additional Information

cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION
EDWIN I. HATCH NUCLEAR PLANT, UNITS 1 AND 2
LICENSE RENEWAL APPLICATION (LRA) SECTIONS

2.1, 2.2, 2.3.1 (SER Section 2.3.2), 2.3.2, 2.3.3, 2.3.4, 2.3.5, 2.4, 2.5, 3.2.3 (SER Section 3.3), and 3.2.5 (SER Section 3.5)

Scoping and Screening Methodology (SSM)

RAI - 2.1 - SSM - 1 During the scoping and screening methodology audit conducted at the E. I. Hatch Nuclear Plant (Hatch) on June 12 through 15, 2000, the audit team reviewed the following implementation procedures: (1) LRS 1-1, "Revisions and Distribution of the License Renewal Services Procedures Manual," Revision 2, (2) LRS 1-2, "Scoping Procedure," Revision 2, (3) LRS 1-3, "Plant Hatch Scoping Template," Revision 5, (4) LRS 1-4, "Boundary Procedure," (5) LRS 1-5, "Civil/Mechanical Structure/Component Screening Procedure," and (6) LRS 1-8, "Electrical IPA Procedure."

Based on our review of these procedures and from our discussions with Hatch personnel, the audit team identified certain discrepancies between the scoping and screening process described in the procedures and the actual process that was followed. Specifically, the procedures did not provide a clear description and account of all essential activities in the scoping and screening process nor did they clearly portray the sequence in which these activities were actually accomplished.

While the audit team determined that the procedures reviewed in combination with the review of a sample of scoping and screening products (supplemented by discussions with the Hatch personnel directly involved in the development of such products) provided adequate evidence that the scoping and screening process was conducted in accordance with the requirements of 10 CFR 54.4, "Scope," and 10 CFR 54.21, "Contents of Application — Technical Information," the team also concluded that the Hatch licensee (applicant) needs to update these procedures to reflect the actual scoping and screening process upon which the applicant will rely to satisfy the requirements of 10 CFR 54.35, "Requirements During the Term of Renewed License."

Therefore, the applicant is requested to confirm that the Plant Hatch license renewal procedures will be updated to clearly reflect the actual scoping and screening process used for both the current application as well as future updates to the application based on changes to the current licensing basis, and to specify the time-frame during which this update will be accomplished.

Enclosure

RAI - 2.1 - 2

During the audit, the team also learned that the Hatch Nuclear Plant Unit 2 Final Safety Analysis Report (Hatch U2 FSAR) has been amended with Supplement 15C, "Nuclear Safety Operational Analysis." Hatch U2 FSAR, Supplement 15C, is a comprehensive summary of all design basis events, including anticipated operational occurrences, applicable to both Hatch units and represents the culmination of an extensive design basis reconstitution effort at Hatch. However, the Hatch license renewal scoping and screening process was completed before efforts associated with Supplement 15C to the Hatch U2 FSAR were finalized.

Therefore, the applicant is requested to provide information on actions it intends to undertake to ensure that the information relied on to generate the scoping and screening results in accordance with the methodology described in the Hatch LRA is consistent with, and supported by, the design and licensing basis information in Supplement 15C to the Hatch U2 FSAR. The applicant's response should also include a description of the process it intends to follow to address any discrepancies, and a time-frame for completing this activity.

Scoping Results (SR)

RAI - 2.2 - SR - 1

Title 10, Part 54, Section 4 of *The Code of Federal Regulations* (10 CFR 54.4) defines the structures systems and components (SSCs) that are within the scope of license renewal. The license renewal application (LRA) is required to include an integrated plant assessment (IPA) in accordance with 10 CFR 54.21. 10 CFR 54.21 further states that the "IPA must --

- (1) For those systems, structures, and components within the scope of this part, as delineated in §54.4, identify and list those structures and components subject to an aging management review. Structures and components subject to an aging management review shall encompass those structures and components --
 - (i) That perform an intended function, as described in §54.4, without moving parts or without a change in configuration or properties."

In the Hatch LRA, Table 2.2-1 provides the results of the applicant's review to determine which SSCs are within the scope of license renewal. The table defines which systems are within the scope of license renewal based on the functions of each system. Our review has identified several systems which clearly have functions that are not shown in Table 2.2-1, but would place these systems within the scope of license renewal. In fact, Table 2.2-1 states that these systems are not in the scope of license renewal. For example, the main steam (system number N11), feedwater (system number N21), and reactor water cleanup (system number G31)

systems all have a reactor coolant system pressure boundary function that places them within the scope of license renewal as defined in 10 CFR 54.4. However, this function is not listed for any of these systems in Table 2.2-1, and the table incorrectly indicates that these systems have no functions that are within the scope of license renewal. After further review by the staff, this function for these systems is apparently captured under a separate system; the nuclear boiler system (system number B21) under function number B21-02 (Reactor Coolant Pressure Boundary Integrity). We recognize that the applicant's method of capturing systems in the license renewal scope is through the system function; however, the table appears to inadequately capture all relevant system functions for every system listed. Therefore, the applicant is requested to provide a revised table that: (1) lists all functions that are in the scope of license renewal for each system, (2) correctly indicates the functions that place each system within scope, and (3) provides a means by which the reviewer can correlate the function with the section of the LRA that provides the system description and the list of structures/components subject to aging management review based on that function. For instance, if function B21-02, "Reactor Coolant System Pressure Boundary Integrity," were listed under the Main Steam system, then the table would correctly indicate that the Main Steam system is in scope, but that the function of concern is covered under the nuclear boiler system (system number B21).

RAI - 2.2 - SR - 2 In Table 2.2-1, system number P64, Primary Containment Chilled Water System (Unit 2 only) is listed as having two functions: 1) Reactor Building/Radwaste Building Cooling and 2) Drywell Cooling. The Table also indicates that the system is in the scope of license renewal because of its drywell cooling function. However, Section 2.3.4.10 of the Hatch LRA states that the system is in scope because it has a function of maintaining containment integrity, not because of the drywell cooling function. Please clarify the system functions and the associated bases for concluding that this system is within the scope of license renewal (See related question in RAI 2.3.4.10-Primary Containment Chilled Water-1).

RAI - 2.2 - SR - 3 Table 2.2-1 lists two functions for system number L36, Insulation. The first function, number L36-01, is entitled "Equipment and Piping Insulation - Inside Drywell." This function is shown on the table as not within the scope of license renewal. 10 CFR 54.4 defines the criteria for determining which SSCs are within the scope of license renewal. Specifically, 10 CFR 54.4 states, in part, that all nonsafety-related SSCs whose failure could directly prevent satisfactory accomplishment of any of the three required functions designated in the rule for safety-related SSCs are within the scope of license renewal. One of the required functions designated in the rule for safety-related SSCs is the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure comparable to the 10 CFR 100 guidelines. Section 3.6.1.5 of the Hatch Technical Specifications for both units

require that the drywell average temperature be maintained below 150 degrees Fahrenheit (°F). In addition, the bases section for this drywell temperature requirement states that this temperature limit is necessary to ensure that peak accident temperatures are maintained below the drywell design temperature. This ensures that the containment can perform its design function. Logically, it is reasonable to conclude that piping and equipment insulations are important components for ensuring the plant's ability to meet the drywell technical specification temperature requirement, especially in Unit 1, which does not have drywell coolers. Clearly, the temperature requirement is in the technical specifications so that the containment can perform its accident mitigation function. Please provide the basis for concluding that none of the insulation inside the drywell is within the scope of license renewal.

RAI 2.2-Scoping-4 10 CFR 54.4 provides the criteria for determining the structures, systems and components (SSCs) that are in the scope of license renewal. One of the criteria is that SSCs are important to license renewal if they are "relied upon to remain functional during and following design basis events..." 10 CFR 50.49 defines design basis events as conditions of normal operation, including anticipated operational occurrences, design basis accidents, external events, and natural phenomena for which the plant must be designed to ensure: 1) the integrity of the reactor coolant pressure boundary, 2) the capability to shut down the reactor and maintain it in a safe shutdown condition, and 3) the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the 10 CFR 100 guidelines. Section 9.4.6.2.1, of the Hatch, Unit 2, FSAR, states that the Drywell Cooling System is relied on during a loss-of-offsite power (LOSP) event to maintain the Drywell temperature below 165 degrees Fahrenheit. It is logical, therefore, that the Drywell Cooling System would be in the scope of license renewal for its drywell cooling function. However, Table 2-2.1 indicates that the Drywell Cooling System (system number T-47) is not in the scope of license renewal. Please provide the basis for concluding that the Drywell Cooling System is not in scope.

Reactor Assembly System (RA)

RAI - 2.3.2 - RA - 1 The staff considers that the reactor vessel leakage monitoring piping from the closure head should be subject to an aging management review (AMR) [see letter from C.I. Grimes (NRC) to D.J. Firth (B&W Owner's Group)], dated October 27, 1999. The October 27, 1999, letter describes the staff's reassessment of the conclusion that the innermost O-ring seal is the first pressure boundary. This conclusion is consistent with the staff's guidance for license renewal issue number 98-0012, "Consumables" that was issued to the NEI on April 20, 1999. In this position the staff stated that packing, gaskets, seals, and O-rings are not typically required by the current licensing basis to fulfill the functions of 10 CFR Part 54.4(a)(1)(i) in accordance with ASME, Section III, NB2121, NC2121, and ND2121

because (by design) they are not relied upon for a pressure retaining function in components for which these Code design practices apply. In addition, the staff stated that “applicants can exclude packing, gaskets, seals, and O-rings where there is a clear basis for concluding that such components are not relied upon for a system, structure, or component to perform its intended function (s) under Part 54”

Inasmuch as these Code design practices do not apply to the O-ring in the closure head, the sealing surface of the vessel flange does provide the pressure boundary intended function for the closure head. Because the leakage monitoring piping penetrates the sealing surfaces of the vessel flanges, it should be treated as part of the reactor coolant system pressure boundary, and therefore, is within the scope of Part 54.

In Tables 2.2-1 and 2.3.1-1 of the LRA, the reactor vessel leakage monitoring piping was not identified as a component within scope requiring an AMR. On the basis of the discussion made above, identify the reactor vessel leakage monitoring piping as part of the pressure boundary, and accordingly, include it within the scope of license renewal and subject to AMR. If, however, the applicant believes that the component does not require an AMR, provide plant-specific justification as to why the component need not be subject to an AMR.

- RAI - 2.3.2 - RA - 2 In Table 2.3.1-1, there is a footnote which states, “No aging effects requiring management.” This footnote applies to the following component groups: Access Hole Covers, Core Delta-P/SLC Line, Core Support Plate, Fuel Supports, and Shroud Tie Rods. Provide the basis for the conclusion that there are no aging effects requiring management.
- RAI - 2.3.2 - RA - 3 The intended function of the reactor vessel internals to provide gamma and neutron shielding was not identified on page 2.3-2, nor in Table 2.3.1-1 of the LRA. The component which is specifically designed to perform this function, namely the thermal shield and its supporting structures, were also not identified to be within the scope and subject to an AMR. The staff believes that the function of radiation shielding of the reactor pressure vessel and the components which perform this function should be identified in the LRA, and an AMR be provided for those components that perform this passive function.
- RAI - 2.3.2 - RA - 4 The low pressure coolant injection (LPCI) coupling was identified in the BWRVIP-06 report as a safety-related component. Identify the AMR for the LPCI coupling in the LRA, or provide a justification for the exclusion of this component from aging management requirements.

Nuclear Boiler System (NBS)

- RAI - 2.3.2 - NBS - 1 Please clarify why the safety relief valve (SRV) discharge lines and its supports have not been identified in Table 2.3.1-2 as component groups

requiring an AMR. The staff believes that these structures and components perform the passive function of withstanding significant loads, such as SRV discharges, and that their failure can prevent satisfactory accomplishment of the SRV's intended safety function.

RAI - 2.3.2 - NBS - 2 Only two intended functions were identified for flow-restricting orifices (refer to Table 2.3.1-2 of the LRA); pressure boundary and fission product barrier. However, some orifices are relied upon to limit mass flow rate during postulated breaks, and loss of material can degrade this function. Provide a justification as to why limiting the mass flow rate during postulated breaks is not an intended function of some orifices, per 10 CFR 54.4(a)(1)(iii), or provide an AMR for the orifices that have an intended function to limit mass flow rate.

Engineered Safety Features (ESF)

RAI - 2.3.3 - ESF - 1 In Section 2.3.3 of the LRA, tanks (including the vertical tanks erected in the field) are considered mechanical components. However, the tank foundation and anchorage systems are considered structural components. Tanks can have foundations that are made of concrete or steel. The staff requests the applicant to clarify whether the concrete foundations or pads of the tanks needed for the ESF systems are included within the scope of license renewal and are subject to an AMR.

RAI - 2.3.3 - ESF - 2 In Section 2.3.3 of the LRA, please clarify whether the passive components, namely screens and vortex breakers used in pump suction lines and which could be located either inside the ESF tanks or in the sump, whose intended function is to protect the pumps from debris and cavitation, respectively, are subject to an AMR. If so, identify which tanks and sumps are equipped with these passive components and the location of the AMRs for these components. If not, provide justification for exclusion of these components from aging management requirements.

Standby Liquid Control

RAI - 2.3.3 - SLCS - 1 Table 2.3.3-1 identifies the pressure boundary as the sole intended function for the components supporting the standby liquid control system (SLCS), per 10 CFR 54.4(a)(1)(i). The staff, however, believes that the components have additional intended functions as delineated in 10 CFR 54.4(a)(1)(ii) and (iii), namely, the capability to shutdown the reactor and maintain it in a safe shutdown condition, and the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure, respectively. Please explain why these intended functions need not be identified for the components supporting the SLCS.

RAI - 2.3.3 - SLCS - 2 The poison standpipe/sparger was not identified as a component within the scope of license renewal requiring an AMR. The staff believes that although the standpipe/sparger may not perform the pressure boundary

function, it does perform the other two intended functions as noted in the above paragraph; and therefore, should be within the scope. The staff further believes that the aging effects, such as blockage of the standpipe/sparger perforations to prevent the injection of liquid poison solution and/or cracking of the component itself, may degrade its intended functions to assure good mixing and dispersion of the poison inside the reactor vessel. The staff, therefore, requests the applicant to identify where the AMR is located in the LRA, or provide a justification for the exclusion of the poison standpipe/ sparger from the aging management requirements.

Residual Heat Removal System (RHR)

RAI - 2.3.3 - RHR - 1 In Table 2.3.3-2, the intended functions for heat removal tubes have been identified as fission product barrier and pressure boundary. However, the staff believes that heat transfer is also an intended function of this component. Explain why this additional function need not be identified, and explain why an AMR is not necessary to assure satisfactory performance of this function during the period of extended operation.

Primary Containment Purge and Inerting System (P&I)

RAI - 2.3.3 - P&I - 1 In Section 2.3.3.7, "Primary Containment Purge and Inerting System," both the ambient vaporizer and steam vaporizer are identified as major equipment for the system. Clarify if the steam vaporizer is within the scope of license renewal, and if so, highlight it in the drawings that identify the components within the scope of license renewal. The "vaporizer" is identified in Table 2.3.3-7. Clarify whether it includes the ambient vaporizer only or both ambient and steam vaporizer.

RAI - 2.3.3 - P&I - 2 In Section 2.3.3.7, Paragraph T48-03, Primary Containment Vacuum Relief is identified as one of the primary functions associated with the containment purge and inerting system. Its function is to prevent a collapse in either the drywell or torus as a result of the most rapid cooldown transient. Identify all major components associated with T48-03. Where are those components in Table 2.3.3-7 and in the drawings that identify the components within the scope of license renewal? Identify all the drawings dealing with T48-03.

RAI - 2.3.3 - P&I - 3 Table 2.3.3-7 of the LRA does not list any instrument tubing. The staff believes that instrument tubing performs its function without moving parts and is not replaced based on qualified life or specified time period, and therefore is subject to an AMR. Provide an AMR for the instrument tubing or justify the exclusion of the instrument tubing from aging management review.

Post-LOCA Hydrogen Recombiners (Unit 2 Only) (HR)

- RAI - 2.3.3 - HR - 1 In Drawing No. HL-26068, "Post-LOCA Hydrogen Recombiners System P& I.D.," the water separator, water spray cooler, reaction chamber, blower (C0001A), and unnamed component B001A are highlighted as within the scope of license renewal. However, those components are not listed in Table 2.3.3-8 of the LRA for aging management review. Based on the information provided in the LRA, the staff cannot conclude with reasonable assurance that the components of this system should not be subject to an AMR. Provide an AMR or justify the exclusion of these components from an AMR.
- RAI - 2.3.3 - HR - 2 Identify the unnamed component "B001A" on Drawing No. HL-26068.
- RAI - 2.3.3 - HR - 3 From a review of the FSAR, Hatch Unit 1 does not utilize hydrogen recombiners. Please confirm this.
- RAI - 2.3.3 - HR - 4 Table 2.3.3-8 does not list any instrument tubing. The staff believes that the instrument tubing performs its function without moving parts and is not replaced based on qualified life or specified time period, and thus is subject to an AMR. Provide an AMR for the tubing or justify the exclusion of the tubing from aging management review.

Radwaste (RW)

- RAI - 2.3.4 - RW - 1 In the Hatch Application for License Renewal, the liquid and gaseous radwaste systems are not identified as within the scope of license renewal or subject to an aging management review (AMR). The applicant has determined that the liquid and gaseous radwaste systems do not meet the requirements of 10 CFR 54.4. The staff would like to confirm the applicant's determination. The scoping requirements of 10 CFR 54.4(a)(1)(iii) refer to the consequences of accidents that could result in potential offsite exposure comparable to the guidelines in 10 CFR Part 100.11. Provide the basis for the conclusion that failure of the liquid and gaseous radwaste systems at Hatch could not result in offsite exposure comparable to the guidelines in 10 CFR Part 100.11.

Control Rod Drive System (CRD)

- RAI - 2.3.4 - CRD - 1 The staff believes that the scram discharge volume (SDV) of the control rod drive system (Section 2.3.4 of the LRA) is a passive, long-lived component that meets the requirements of 10 CFR 54.4(a), and therefore is subject to an aging management review (AMR). Clarify whether the SDV is subject to an AMR. If not, provide a justification for excluding the SDV from an AMR.

Insulation (IN)

RAI - 2.3.4 - IN - 1 10 CFR 54.4 defines the SSCs that are in the scope of license renewal. The first criterion states, in part, that safety-related SSCs which are relied upon to remain functional during and following design basis events to ensure the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure comparable to the 10 CFR 100 guidelines are within the scope of license renewal. Section 9.4.2.2.3 of the Hatch Unit 2 FSAR states that the ECCS room coolers are safety-related systems. Section 2.3.4.15 (Reactor Building HVAC System) of the Hatch LRA states that one of the purposes of the ECCS room coolers is to “provide a source of cooling to support the operation of the emergency core cooling system.” This section further states that the ECCS and corner room coolers are “designed to operate during and following a design basis accident to support the operation of those systems required to mitigate the consequences of an accident.” Section 2.3.4.3 of the Hatch LRA states that insulation is “credited in heat load calculations for safety-related rooms, and that failure of this insulation could allow the heat load of the room to exceed the capability of the HVAC system, thus exceeding the design temperature of the room.” These statements imply that pump room piping and component insulation for ECCS systems (i.e., HPCI, LPCI and LPCS) should be included in the scope of license renewal because the insulation is relied upon to insure that the HVAC system, and consequently, the ECCS can perform their safety functions. However, our review of drawings HL-16002, HL-16328, HL-16329, HL-16330, HL-16331 HL-16332, HL-16333 and HL-26020 found no indication that insulation in these areas is considered to be in scope. Please provide the basis for concluding that the insulation in these areas is not within the scope of license renewal. This request also applies to Unit 1 if that unit also has ECCS room coolers. It is not clear from the FSAR for Unit 1, or from the Hatch LRA, if Unit 1 has ECCS room coolers.

RAI - 2.3.4 -IN - 2 Table 2.2-1 and Section 2.3.4.15 indicate that the reactor core isolation cooling (RCIC) and CRD room coolers are also in the scope of license renewal. Specifically, Section 2.3.4.15 states that the “room coolers for the RCIC and the CRD pump rooms provide reliable operation of the RCIC and CRD pumps. The RCIC and CRD pump room cooling units are not required for a safe plant shutdown following major accidents.” However, SSCs within the scope of license renewal are those which are required to function during and following design basis events as defined in 10 CFR 50.49. 10 CFR 50.49 defines design basis events as conditions of normal operation, including anticipated operational occurrences, design basis accidents, external events, and natural phenomena for which the plant must be designed to ensure: 1) the integrity of the reactor coolant pressure boundary, 2) the capability to shut down the reactor and maintain it in a safe shutdown condition, and 3) the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the 10 CFR 100 guidelines. Accordingly, are there design

basis events other than the “major accidents” (e.g., main steam isolation, feedwater isolation, ATWS, small break LOCA, etc.) mentioned in Section 2.3.4.15 of the Hatch LRA that require the RCIC or CRD pump room coolers to successfully mitigate the event. If so, is the insulation credited in the calculations to size the coolers? Our review of drawings HL-16332, HL-16334, HL-16335 and HL-26023 found no indication that insulation in these areas (i.e., the RCIC and CRD pump rooms) are considered to be in scope. Please provide the basis for concluding that the insulation in these areas are not within the scope of license renewal.

RAI - 2.3.4 - IN - 3 Section 2.3.4.3 in the LRA provides a brief description of the purposes of insulation and examples of systems where the insulation is in scope. Our review of the drawings for the service water and RHR service water systems noted that an inadequate level of detail was provided. We reviewed the following service water system drawings which are indicated as having in-scope piping insulation functions outside of the drywell:

- 1- Drawing DL-11001, “P&ID for Service Water Piping at Intake Structure, Sheet 1”
- 2- Drawing DL-11004, “P&ID - R.H.R. Service Water Outside Building”
- 3- Drawing HL-11600, “P&ID for Service Water @ Diesel Generator, Sheet 2”
- 4- Drawing HL-21033, “Turbine Building Service Water System P&ID, Sheet 1”
- 5- Drawing HL-21039, “R.H.R. Service Water System P&ID”

Our review of these drawings noted specific problems or limitations with the information provided. Specifically,

- 1- It is clear from the drawings and discussions with the Hatch staff that none of the scoping drawings were generated specifically for the piping insulation. This makes the review difficult because if a pipe is in scope, its associated insulation may not be. This makes the system functional designations (shown in green in the drawing) very important because they provide the only means for determining which insulation is considered in-scope (whereas in-scope piping is shown in red). Our review of the service water drawings indicates that in many cases, if system piping is already shown on the drawings as being in scope based on the function of the piping system, inadequate additional functional indication was provided for the insulation. This makes it impossible to determine from some of the drawings the extent of insulation that is considered by the applicant to be in scope.

- 2- Similarly, no indication is provided on the drawings indicating whether all or a portion of the piping is outside or inside a building. Since one of the functions of insulation is to prevent piping from freezing in cold areas, this is a critical point for our review.
- 3- In cases where insulation is indicated on the drawings, it is not always clear what forms the boundaries where the insulation becomes in scope or not in scope. For instance, on drawing DL-11001, there are two instances where an insulation boundary is indicated in the middle of a straight piping run at no apparent physical boundary or system component. These two examples are located at positions B-4 and B-2 on the drawing. Similar examples are found on HL-21033 at G-1 and C-6. The bases for the changes in scope at these points is unclear. Almost all of the indications for in-scope insulation in this drawing are for instrument, vent and drain lines. It seems logical that if so many of the instrument, vent and drain lines have in-scope insulation, the associated service water piping would also have in-scope insulation on them as well. Very little indication is provided on the main service water piping in these drawings. Insufficient information is provided on this drawing or in the application to review this system.
- 4- Drawing DL-11004 is the P&ID for the RHR Service Water System, which is outside of the reactor building. Almost all of the piping is shown as being in scope. Yet, the only insulation shown as being in scope are two 1-inch drain lines (at positions C-2 and D-2 on the drawing). If all of the piping is outdoors, and all is in scope, then the associated piping insulation should be in scope because it prevents freezing of the pipes and ensures that the RHR service water system can perform its safety function. No such indication is provided. Drawing HL-21039 for Unit 2 is similar; however, the drawing specifically indicates the reactor building boundary. However, no insulation outside the reactor building is shown as being in scope except for two 1-inch drains and a capped connection. Insufficient information is provided on this drawing or in the application to review the insulation scope for this system.
- 5- Similarly, Drawing HL-11600 is the P&ID for service water to the diesel generators. The drawing only indicates in-scope insulation on four differential pressure indicating switches and one 1-inch vent line. No indication is provided for insulation scope anywhere else on the drawing. There is also no indication on the drawing of the location of the piping (indoors or outdoors). Insufficient information is provided on this drawing or in the application to review the insulation scope for this system.

Please provide updated drawings with additional detail for the drawings cited above and/or provide a written description to clearly define the boundaries of in-scope piping and component insulation, as well as provide

indication of the physical location of the piping systems (e.g., from the point the pipe exits the reactor building, etc.) when the location forms the basis for defining which insulation is in scope. Be sure that the information provided addresses the specific problems cited above, and includes the bases for the piping insulation that is considered "not in scope."

- RAI - 2.3.4 - IN - 4 The Standby Liquid Control System (SLCS) is utilized to mitigate an anticipated transient without scram (ATWS) event. For this reason, the portions of the system that perform a reactivity control function are considered as being in scope. Drawings HL-16061 and HL-26009 show the in-scope piping and insulation for the SLCS for Units 1 and 2. The SLCS storage tank is shown as being in scope. Section 4.2.3.4.1 of the Hatch, Unit 2, FSAR indicates that temperature is very important to the SLCS in order to ensure that the boron does not precipitate out. As a result, the SLCS is heated in the storage tank and in the suction piping (heat trace) to ensure that liquid temperature is maintained between 65°F and 75°F. The drawing indicates that the suction piping from the storage tank has in-scope insulation on it, but a similar indication is not shown for the storage tank itself. Is the storage tank insulated, and if so, what is the basis for concluding that the tank insulation is not in scope?
- RAI - 2.3.4 - IN - 5 Similar to the previous question, Drawings HL-16061 and HL-26009 for the SLCS indicates that the piping insulation for the SLCS is in scope from the storage tank up to the suction of the pumps. What is the basis for concluding that the pump insulation and all discharge piping insulation is not in the scope of license renewal? This insulation would still be important to ensuring retention of heat in the process piping and prevention of precipitation of boron in the piping.
- RAI - 2.3.4 - IN - 6 Section 2.3.4.5 of the LRA states that the Condensate Storage Tank (CST) is in scope because it is the preferred source of water for the HPCI and RCIC systems. The piping insulation for both of these systems is indicated as being in scope from the CST suction to the point near the piping enters into the secondary containment (See drawings HL-16332, HL-26020, HL-16334 and HL-26023). Is the CST insulated, and if so, what is the basis for concluding that the CST insulation is not in scope? Based on the drawings, it appears that the CST is located outdoors which is further supported by the indication of the RCIC and HPCI piping insulations being in scope. CST insulation would assist in ensuring that the CST water does not freeze and prevent the RCIC and HPCI from performing their safety functions.
- RAI - 2.3.4 - IN - 7 Drawings HL-16332 and HL-26020 for the HPCI system shows that the insulation on the HPCI suction piping from the CST is in scope until a point very near where the piping enters the secondary containment. Drawing HL-16334 indicates a similar scope for the RCIC suction piping insulation, except that the point at which the insulation ceases to be in scope appears to be some undefined distance from the point that the piping enters the

secondary containment. What defines the point at which the insulation ceases to be in scope and what is the basis for selecting that point for the transition? (Note: For Unit 2, Drawing HL-26023 does not indicate where the insulation ceases to be in scope for RCIC).

- RAI - 2.3.4 - IN - 8 Drawing HL-11033, Sheet 1, for the fire protection system indicates that the suction piping insulation for the fire protection system is in scope from the two 300,000 gallon fire protection storage tanks until the piping enters the fire pump house. The fire protection storage tanks themselves are also indicated as being in scope. Are the fire protection storage tanks insulated? If so, please provide the basis for concluding that the tank insulation is not in the scope of license renewal.

Access Doors System (AD)

- RAI - 2.3.4 - AD - 1 In Section 2.3.4.4, "Access Doors System," it is stated that the doors necessary to maintain secondary containment are included in the containment integrity function, L48-01, and that secondary containment doors have a passive function to maintain structural integrity to preserve secondary containment. The staff believes that, based on these functions, the access door and door seals meet the requirements of 10 CFR 54.4(a) and are within the scope of license renewal. Further, additional information must be provided for the staff to have reasonable assurance that the door seals need not be subject to an aging management review (AMR). Provide justification for concluding that the access door and door seals are not within the scope of license renewal. If these components are within scope, provide an AMR for the access door and door seals or justify why they are not subject to an AMR.

Condensate Transfer and Storage System (COND)

- RAI - 2.3.4 - COND - 1 In Drawing No. HL-16016, "Condensate Storage & Transfer System P.& I.D.," Valve Nos. E51-F009 (Location D1), E41-F010 (Location D1) are not highlighted. These valves are locked open valves for flow from the condensate storage tank (CST) to the high pressure coolant injection system (HPCI) and the reactor core isolation cooling system (RCIC) serving the intended function of P11-01, ECCS/CRD condensate supply. The staff believes that these valves are within the scope of license renewal and subject to an aging management review (AMR). Provide justification why these valves are not highlighted.

Based on the information provided in the license renewal application, the staff cannot conclude with reasonable assurance that the flow line from the CST to the control rod drive system (CRD, location C2) does not meet the requirements of 10 CFR 54.4 and is not subject to an AMR. Provide justification why this line should be excluded from the scope of license renewal and not be subject to an AMR.

- RAI - 2.3.4 - COND - 2 In Section 2.3.4.5, "Condensate Transfer & Storage System," it is stated that the system consists of two condensate transfer pumps and associated piping and valves. The staff believes that the pumps are within the scope of license renewal and subject to an aging management review (AMR). Identify these two pumps in the drawings as within the scope of license renewal or justify their exclusion. Explain why these pumps (pump housing) are not included in Table 2.3.4-5 for an AMR.
- RAI - 2.3.4 - COND - 3 The staff believes that instrument tubing for the Condensate Transfer & Storage System performs its function without moving parts and is not replaced based on qualified life or specified time period, and therefore is subject to an AMR. Provide an AMR for the instrument tubing or explain why the instrument tubing is not included in Table 2.3.4-5 for aging management review.

Plant Service Water System (PSW)

- RAI - 2.3.4 - PSW - 1 Section F1 of Drawing HL-11600, function P41-02 boundary (turbine building isolation) ends in the middle of a 30-inch pipe. The rest of the pipe is not in scope for license renewal. Most functional boundaries end at a valve or component and not in the middle of the pipe. The 30-inch pipe continues to section D8 of Drawing HL-11024. Provide justification as to how the safety function of ensuring that the non-essential loads in the turbine building are isolated is maintained when the 30-inch pipe is not isolated by a valve or component at the current location.

Additionally, Section A11 and F11 of Drawing HL-21033, function P41-02 also ends in the middle of a 30-inch pipe. For Section F11, the functional boundary ends at the transition from seismic Category I to seismic Category II. Provide justification as to how the safety function of ensuring that the non-essential loads in the turbine building are isolated is maintained when the 30-inch pipe is not isolated by a valve or component at the current boundary location.

- RAI - 2.3.4 - PSW - 2 Sections D4 through D2 of Drawing HL-11609, function P41-01 boundary (essential mechanical and environmental support) ends at a 4-inch pipe, i.e., the rest of P41-01 boundary is not in scope (NIS) for license renewal. This line appears to be a header for the discharge of the 3 main control room (MCR) HVAC units. The control room HVAC system is designed to provide cooling and a controlled environment for personnel safety and habitability in the control room during normal and accident conditions. Also, the system provides a controlled temperature to ensure the integrity of the MCR components. Provide justification as to how the safety function of this system is maintained when the 4-inch pipe is not isolated by a valve or component at the current boundary location.

RAI - 2.3.4 - PSW - 3 Section B5 of Drawing HL-11004 has a line which provides seal and prelube water to the RHR service water (RHRSW) pumps. This line is not indicated as being within the scope of license renewal. Seal water is important for the protection of the RHRSW pumps. RHRSW provides a reliable supply of cooling water to the reactor pressure vessel (RPV) following a loss of RHR/core spray or to flood the primary containment to provide cooling to the exterior of the reactor vessel using raw river water. Provide a justification for exclusion of the RHRSW pump seal and prelube water piping from the scope of license renewal.

RAI - 2.3.4 - PSW - 4 Section A11 of Drawing HL-21035, function 2P41-01 boundary becomes NIS at the transition from seismic Category I to seismic Category II piping. There is no valve or component at this location. Provide a justification as to how the safety function of mechanical and environmental support is maintained when the 6-inch pipe is not isolable by a valve or component at the current boundary location.

RAI - 2.3.4 - PSW - 5 Sections J5 and J7 of Drawing HL-21033, function P41-01 boundary becomes function P41-03, which is NIS for license renewal. The purpose of this piping is to provide loop seal cooling to the diesel generators. However, the P41-01 boundary does not end at a valve or component. Provide a justification as to how the safety function is maintained when the 6-inch pipe is not isolable by a valve or component at the current boundary location.

Instrument Air System (IA)

RAI - 2.3.4 - IA - 1 Unit 2 FSAR Section 9.3.1.2 states that the instrument air system includes an air dryer and two 100% capacity pre- and after-filters connected in parallel. Based on the information provided in the license renewal application, the staff cannot conclude with reasonable assurance that these components should not be subject to an AMR. Provide an AMR for these components or explain why the air dryer and filters are not included in Table 2.3.4-9 for aging management review.

RAI - 2.3.4 - IA - 2 Unit 2 FSAR Section 9.3.1.4 states that the instrument air system includes instrument air accumulators. The staff believes the accumulators perform their intended function with no moving parts and are not replaced based on qualified life of specified time period. Therefore, they are subject to an aging management review (AMR). Explain why the accumulators are not included in Table 2.3.4-9 for aging management review.

Primary Containment Chilled Water System (Unit 2 Only) (PCCW)

RAI - 2.3.4 - PCCW - 1 10 CFR 54.4 provides the criteria for determining the structures, systems and components (SSCs) that are within the scope of license renewal. One of the criteria is that SSCs are important to license renewal if they are "relied upon to remain functional during and

following design basis events....” Section 2.3.4.10 of the Hatch LRA states that the only safety-related function of the primary containment chilled water system (PCCW) during an accident is to maintain primary containment integrity via a closed system loop inside of containment. Consistent with this statement, the P&ID for the Unit 2 PCCW (Drawing number HL-26081) only shows the system inside the primary containment isolation valve as being in the scope of license renewal. However, Section 9.4.6.2.1, of the Hatch, Unit 2, FSAR, states that the drywell cooling system is relied on during a loss-of-offsite power (LOSP) event to maintain the drywell temperature below 165 degrees Fahrenheit. Since the PCCW provides the heat removal function for the drywell cooling system, it is reasonable to assume that chilled water is also needed during this design basis event. This conclusion is further supported by Table 2.2-1 of the Hatch LRA which states that the PCCW is in the scope of license renewal for its drywell cooling function. Based on this, it seems reasonable that all portions of the PCCW that are involved in the drywell cooling function would be in scope, including the system piping and components outside the drywell, and support components such as piping insulation inside and outside the drywell. Please explain the basis for excluding chilled water piping/component insulation and all portions of the PCCW outside of the primary containment isolation valve from being within the scope of license renewal.

RAI - 2.3.4 - PCCW - 2 Because of the containment integrity function of PCCW, all piping and components inside of containment are indicated as being within the scope of license renewal (as shown on drawing number HL-26081) except drain and vent piping downstream of the vent or drain valves. Primary containment integrity is maintained by this system because it is a closed loop inside containment. Logically, it is reasonable to assume that the drain and vent piping also forms part of the closed loop. What is the basis for excluding the drain and vent piping from the scope of license renewal?

Drywell Pneumatics System (DPS)

RAI - 2.3.4 - DPS - 1 In Section 2.3.4.11, “Drywell Pneumatics System,” it is stated that the drywell pneumatics system receives motive gas from the nitrogen storage tanks. The staff believes that the nitrogen storage tanks are passive and long-lived and therefore are subject to an aging management review (AMR). Identify the nitrogen tanks in the applicable drawings and list them in Table 2.3.4-11 for aging management review, or justify the exclusion of these tanks from an AMR

RAI - 2.3.4 - DPS - 2 In Section 2.3.4.11, “Drywell Pneumatics System,” it is stated that the system includes an air receiver, particulate filters,....and regulators. Based on the information provided in the license renewal application, the staff cannot conclude with reasonable assurance that the components of

the drywell pneumatics system are not subject to an AMR. Provide justification for concluding that these components are not subject to an AMR.

Identify the regulators in the applicable drawings and list the air receiver and regulators in Table 2.3.4-11 for aging management review, or justify the exclusion of them from aging management review.

RAI - 2.3.4 - DPS - 3 Unit 2 FSAR Section 9.3.6.3 states that a backup supply of nitrogen to the drywell is provided through three interchangeable nitrogen bottles and a manifold system at one of two emergency nitrogen hookup stations. Based on the information in the LRA, the staff cannot conclude with reasonable assurance that the nitrogen bottles and manifold system are not subject to an AMR. Provide justification for concluding that these components are not subject to an AMR.

Emergency Diesel Generators System (EDG)

RAI - 2.3.4 - EDG - 1 In Section 2.3.4.12, "Emergency Diesel Generator System," pumps are not identified as within the scope of license renewal in Table 2.3.4-12. This is not consistent with Drawing Nos. HL-21074, HL-11631, HL-11638, where many pumps are highlighted. Explain the discrepancy.

RAI - 2.3.4 - EDG - 2 In Drawing Nos. HL-21074 and HL-11631, the air receivers A005A (Location 11C), A006A (Location 9C), A003A (Location E11), and A007A (Location E9) are highlighted as within the scope of license renewal. In Table 2.3.4-12, these air receivers are not included as subject to aging management review (AMR). Based on the information provided in the license renewal application, the staff cannot conclude with reasonable assurance that the air receivers should not be subject to an AMR. Provide an AMR or justify the exclusion of the receivers from an AMR.

RAI - 2.3.4 - EDG - 3 In Drawing No. HL-11631, the scavenging air heat exchanger (Location B10), engine supply HDR, diesel engine crankcase (Location D11), and Turbo superchargers (Locations C12, and D12) are highlighted as within the scope of license renewal. These components are not included in Table 2.3.4-12 as subject to an AMR. Based on the information provided in the license renewal application, the staff cannot conclude with reasonable assurance that these components should not be subject to an AMR. Provide an AMR or justify the exclusion of these components from an AMR.

RAI - 2.3.4 - EDG - 4 What are the component Nos. C001A (Location C11) and C010A (Location C8) in Drawing No. HL-11631 represented for? Why aren't these components within the scope of license renewal and subject to aging management review?

Tornado Vents System (TV)

RAI - 2.3.4 - TV - 1 Table 2.3.4-14 in the LRA provides a list of components supporting the intended functions of the tornado relief vents which are designated as requiring aging management review. Figure 3.3-1 in the Hatch FSAR provides a diagram of the tornado vent structural grill system. The diagram shows two components which are not listed in Table 2.3.4-14 of the LRA: the tornado vent concrete curb and the tornado vent grill. What are the functions of these components and what are the bases for excluding them from aging management review?

Traveling Water Screens/Trash Racks System (TSR)

RAI - 2.3.4 - TSR - 1 Sections E5 and B5 of Drawing HL-21033, function W33-01 boundary (intake structure trash removal) is not is scope for license renewal as shown on the drawing. However, W33-01 is a function that is included as being within scope. Provide a justification as to why 1W33-01 in Section E5 and 2W33-01 in Section B5 are not within the scope of license renewal.

Fire Protection system (FPS)

RAI - 2.3.4 - FPS - 1 License renewal application (LRA) Section 2.1.2.2 provides a brief description of the information sources that the applicant reviewed to compile a list of structures, systems, and components (SSC's) within the scope of license renewal. The staff questioned the applicant during a July 6, 2000, phone call because the documents referenced by the applicant did not appear to include the fire hazards analysis (FHA). The applicant stated that the FHA was included as an information source during the scoping process. Verify that this is an accurate statement and explain how the SSC's in the FHA were captured within the scope of license renewal by identifying the specific types of safety analyses or plant evaluations, and documentation (e.g. UFSAR, FHA, safe shutdown analysis, safety evaluations, etc.) that were used to identify fire protection SSC's required for compliance with 10 CFR 50.48 and Appendix R.

RAI - 2.3.4 - FPS - 2 LRA Table 2.2-1, "Plant Hatch System/Structure Function Scoping Results," states that the three intended functions listed below are not within the scope of license renewal. However, no basis is provided in the LRA for the exclusion of the intended functions from within the scope of license renewal:

X43-03 RPV Inventory Makeup: The staff has reason to believe that this intended function is to provide water into the reactor vessel, if all other initial attempts to provide water through other systems fail or are not available. If this is the case, then all components which support this function, should be identified within the scope of license renewal and should be subject to an AMR. Therefore,

provide a description for this intended function and justify the exclusion of this intended function from within the scope of license renewal.

X43-05 Halon Fire Suppression For Miscellaneous Applications:

This function identifies a halon fire suppression system; however it does not identify if halon fire suppression for miscellaneous applications is required for compliance with 10 CFR 50.48 or Appendix R. It also does not identify the "miscellaneous applications" for which the halon fire suppression system is needed. Please address these concerns and provide clarification for this intended function. Justify the exclusion of this intended function from within the scope of license renewal.

X43-09 EDG Building Fire Protection:

Fire suppression and fire detection systems were identified in the fire hazards analysis as being installed in the EDG building. Footnote 5 in Table 2.2-1 of the LRA states that this function was retained for continuity and that the functions have been included in X43-01. The FHA identifies both suppression and detection systems for the EDG building. Address if all of the fire detection functions for the EDG building are also included in X43-01.

RAI - 2.3.4 - FPS - 3 Exclusion of certain fire protection components from the scope of license renewal and from an aging management review

1. Dedicated Storage Tanks

- (a) The applicant states in LRA Section 2.3.4.18, that the water supply for the fire protection system inside the protected area is provided by two 300,000 gallon dedicated storage tanks. Each tank is supplied by two deep wells, each with a 700 gpm makeup pump capable of refilling either tank within 8 hours. Flow diagram Volume 1, HL-11033, Sheet 1, "Fire Protection Piping P&ID Pumphouse Layout," shows that the tank fill line is not highlighted to include this piping within the scope of license renewal. This piping appears to provide water from underground wells to the dedicated storage tanks. Justify the exclusion of this piping from within the scope of license renewal.
- (b) Flow diagram Volume 1, HL-11033, Sheet 1, "Fire Protection Piping P&ID Pumphouse Layout," does not show the pumps which draw water from the wells. Since these wells supply the dedicated storage tanks with water for use by the fire protection system, discuss if these pumps (casings) should also be included within the scope of license renewal and subject to an AMR.

2. Fire Hydrants

LRA Table 2.3.4-18 states that fire hydrants perform a pressure boundary intended function and are within the scope of license renewal and subject to an AMR. Flow diagram Volume 1, HL-11033, Sheet 2, "Fire Protection P&ID Yard Layout," only highlights the portion of fire protection piping leading up to, and including, the gate valve of each hydrant. The actual fire hydrant is not highlighted to show that it is within the scope of license renewal. The staff also noted that other flow diagrams depicted fire hydrants in a similar manner. During a July 6, 2000 phone call with the applicant, the applicant stated that only 3 hydrants were originally in scope and that they will be removing these hydrants from within the scope of license renewal due to a current licensing basis change that affects license renewal.

Fire hydrants are integral to performing system flow tests. Lack of maintenance of fire hydrants over time can result in partially closed or shut valves and clogging of hydrants with debris, which will effect the system flow results. Furthermore, it is not uncommon to have fire hydrants credited as a redundant water loop. Please discuss the regulatory basis for the exclusion of fire hydrants from within the scope of license renewal. Also, discuss how system flow tests will be performed, and how the results will be interpreted, if testing is performed on hydrants which are not subject to an aging management program.

3. Manual CO₂ Fire Protection Hose Reels

(a)LRA Section 2.3.4.18 states that manual hose reels, which support intended function X43-08 (Manual CO₂ Fire Protection), are provided as an alternative to water-based hose stations. Discuss if the use of manual hose reels is credited for compliance with 10 CFR 50.48. Also identify if they are within the scope of license renewal and subject to an AMR.

4. Pilot heads/Pilot lines:

The staff's understanding of pilot lines/pilot heads is that they are necessary for actuation of a preaction suppression system. If the pilot heads are not functional, then the water will not flow through the pipe. The staff asked the applicant to provide justification for the exclusion of pilot lines/pilot heads (identified on flow diagram Volume 1, HL-11304, Sheet 3, "Fire Protection Piping P&ID Cond. Below EI 130' ") from within the scope of license renewal (Other flow diagrams also exclude pilot lines/pilot heads the same way).

In a July 6, 2000 phone call, the applicant stated that this function is captured in function P52-02 but was not in scope because failure of the pilot lines/pilot heads will still allow actuation of the suppression system. Provide a technical basis for the statement that failure of the pilot lines/pilot heads will not result in suppression system failure. Also discuss how failure of the pilot lines/pilot heads will still allow for automatic sprinkler actuation.

5. System filters, fire extinguishers, fire hoses, and air packs:

System filters, fire extinguishers, fire hoses, and air packs are not included within the scope of license renewal and are not subject to an AMR. (In a July 6, 2000 phone call, the applicant clarified that systems filters were included within scope and are subject to an AMR. However, in the LRA, they are listed as strainers in Table 2.3.4-18).

As a result of the staff's experience with license renewal, the staff has found that fire extinguishers, fire hoses, and air packs (within the scope of license renewal) may be excluded, on a plant-specific basis, from an aging management review under 10 CFR 54.21(a)(1)(ii). These components are considered within the scope of license renewal and are typically replaced based on specific performance and condition monitoring activities that clearly establish a routine replacement practice based on a qualified life component. These components may be excluded based on specific performance and condition monitoring activities provided that the applicant (1) identifies and lists in the LRA each component type subject to such replacement, and (2) identifies the applicable programs that conform to appropriate standards (e.g., for fire protection components - applicable NFPA standards and 42 CFR Part 84). Justify the exclusion of these components from the scope of license renewal and an AMR.

6. Cardox Fire Suppression for EDG's:

LRA Section 2.3.4.18 identifies the following components that support the Cardox fire suppression system for emergency diesel generators (X43-01) within the scope of license renewal: roll-up fire door, HVAC fire dampers, CO₂ discharge controls, detection devices, and a non-safety related fusible link to control the roll-up fire door.

(a) Flow diagram Volume 5, HL-41509, "Diesel Generator Building, CO₂ System," contains additional components with X43-01 intended functions, that were not listed in the LRA as components within the scope of license renewal (see page 2.3-65 of the LRA). The additional components identified from the flow diagram include hose reels, nozzles, plugs, caps, valves (bodies), and vents. The staff believes that these components meet the requirements of 10 CFR 54.4 and therefore, are within the scope of license renewal. In a July 6, 2000 phone call with the applicant, they stated that hose reels, plugs, caps, vents, and valve (bodies) were included within scope and that plugs, caps, and vents, were identified in Table 2.3.4-18 as piping. Verify in writing that this is an accurate statement.

(b) Components such as the hose reels, plugs, caps, vents, and CO₂ discharge controls, appear to be passive and long-lived and as such, are subject to an AMR. Discuss if these components should be subject to an AMR or provide justification for their exclusion.

7. Hose Stations:

LRA drawing Volume 2, HL-21016, "Turbine Building Fire Protection System P&ID," highlights all hose stations within the scope of license renewal. However, Table 2.3.4-18, "Component Groups Requiring an Aging Management Review," does not include hose stations in an AMR. In a July 6, 2000 phone call with the applicant, they stated that hose stations are included within the scope of license renewal. They are listed as "piping, nozzles, and valves" instead of as hose stations in Table 2.3.4-18 of the LRA. Verify that this is an accurate statement. Furthermore, hose stations appear to be passive and long-lived; therefore, discuss if hose stations are also subject to an AMR.

8. Control Building Fire Protection System

LRA drawing Volume 4, HL-21198, "Turbine Building Fire Protection System P&ID, Sht. 1 of 5," excludes the fire suppression system for the control building (@ 112'-0" elevation) and the lube oil storage tanks. Safety-related equipment is contained in the control building and lube oil storage tanks constitute a large fire hazard to this area. Provide justification for the exclusion of the fire suppression system from the 112'-0" elevation of the control building and from the lube oil storage tanks.

RAI - 2.3.4 - FPS - 4LRA Section 2.3.4.18 states that the intended fire protection function X43-04 (Plant Wide Fire Suppression With Water), is applicable to portions of L43, T43, U43, V43, W43, X43, Y43, and Z43. The intended fire protection function, designated X43-06 (Fire Detection), is applicable to portions of L43, T43, U43, W43, X43, Y43, and Z43. The intended fire protection function, designated as X43-07 (Penetration Seals and Fire Barriers), is applicable to portions of L48, R90, T43, U43, X43, and Z43.

1. System numbers L43, R90, T43, U43, V43, W43, Y43, and Z43 are not identified or discussed in the LRA. Discuss if any other system numbers were excluded, or omitted from the LRA, that contain fire protection intended functions.
2. The LRA states that each intended function listed above is applicable to only portions of systems. For each intended function, describe how portions of systems were identified and how portions of systems were excluded from the scope of license renewal.

RAI - 2.3.4 - FPS - 5The Unit 2 remote shutdown panel (RSP) halon suppression system is identified in the LRA as X43-02. However flow diagram Volume 5, HL-50048, "Fire Protection P&ID Halon System for Panel 2C82-P001," identifies the intended function in the red block for the Unit 2 halon suppression system as X43-06 (Fire Detection), even though portions of the flow diagram are clearly marked with the X43-02 intended function.

Please provide clarification regarding the intended function(s) of this system.

Certain components do not appear to be considered within the scope of license renewal for X43-02. The flow diagram includes within scope, the following components: Halon bottle, photo-electric smoke detector, halon nozzle, and piping. In a July 6, 2000 phone call, the applicant identified that the halon nozzle and piping are listed in Table 2.3.4-18 as nozzles and piping and are included within the scope of license renewal and subject to an AMR.

Components such as halon bottles have been subject to an AMR in previous license renewal reviews. However, the applicant excluded the Halon bottle from an AMR. In a July 6, 2000 phone call, the applicant stated that they consider these components short-lived and thus excluded them from an AMR. Provide the basis for the determination that halon bottles are short-lived components.

RAI - 2.3.4 - FPS - 6 In accordance with 10 CFR 50.48, the fire hazard analysis identifies that total flooding CO₂ suppression systems are provided in the cable spreading room, computer room, diesel generator rooms, and an internal Halon 1301 system in the Unit 2 remote shutdown panel. To ensure that there are no breaches in supporting structures (walls, floors, ceilings, other barriers) that would lessen the design concentration of CO₂ or Halon 1301 available to suppress a fire, discuss if supporting structures which enclose 10 CFR 50.48-required total flooding areas, are considered within the scope of license renewal and subject to an AMR. Provide justification if they are not.

RAI - 2.3.4 - FPS - 7 Appendix D, Section IV.C.2.c of the FHA states that the fire pumphouse contains the following components: a jockey pump for maintaining pressure, an electric driven fire pump, and two diesel driven fire pumps. For protection of these pumps, floor-to-ceiling, 2-hour rated fire barriers are provided between the pumps and a sprinkler system is installed. Flow diagram Volume 2, HL-11848, "Fire Hazard Analysis Fire Protection Pump House," does not show the pumps (casing), the fire barriers, and the sprinkler system components within the scope of license renewal. It appears that these components were provided to satisfy the requirements of BTP APCSB 9.5-1 for compliance with 10 CFR 50.48. Provide justification for the exclusion of these components from within the scope of license renewal and from an AMR.

RAI - 2.3.4 - FPS - 8 The detection system, suppression system, and fire barriers for certain areas in the radwaste building provide protection to prevent the potential for release of radioactive material in the event of a fire. Section 7 of the FHA identifies that the following areas in the radwaste building have

suppression or detection or both: Working Floor, RW Exh. Filter Room D005/D006, Radwaste Control Room, Dry Waste Storage Room, and HVAC room - Filter D006/D006.

The following LRA drawings that the staff reviewed exclude the radwaste building fire protection piping from the scope of license renewal: Volume 1, HL-11034, "Fire Protection P&ID - Reactor & Radwaste Buildings," and Volume 1, HL-11304, Sheet 8 of 10, "Unit 1 Fire Prot-P&ID-REAC & RADW Bldgs Charcoal Fltrs." Furthermore, LRA drawings from Volume 2, HL-11839, HL-11842, and HL-11844 appear to exclude fire barriers from within scope.

The staff believes that these systems within the radwaste building are required for compliance with 10 CFR 50.48 for protection in areas where a fire could release radioactive materials to the environment and should be within the scope of license renewal and subject to an AMR. Particularly for those areas identified above. Therefore, provide justification for the exclusion of these systems from within the scope of license renewal and subject to an AMR.

RAI - 2.3.4 - FPS - 9 Intended function X43-07, "Penseals and Fire Barriers for Preventing Fire Propagation," identifies that fire doors, fire dampers, and barrier penetration seals required for compliance under 10 CFR 50.48 are within the scope of license renewal and are managed through aging management programs. LRA Table 2.3.4-18 states that Kaowool hold-down straps are within the scope of license renewal and are subject to an AMR.

1. The staff initially thought that the applicant's review of Kaowool was limited to the hold-down straps, and did not include the Kaowool fire barrier within the scope of license renewal. In a July 6, 2000 phone call with the applicant, the applicant stated that a typographical error occurred and that Table 2.3.4-18 should state, "Kaowool & hold-down straps". Please verify that this is an accurate statement.
2. During the phone call, the applicant stated that Kaowool is included within scope of license renewal and is subject to an aging management review. They referred the staff to LRA Section C.2.3.4.2 which contains details for the Kaowool aging management program. This section states that: "cable tray barriers consist of Kaowool insulation (or an equivalent material) wrapped around safe shutdown required cable trays and the galvanized steel straps and fasteners used to affix the insulation to the trays". This statement appears to contradict a statement made in SECY-99-204, "Kaowool and FP-60 Fire Barriers". It states on page 4 of the SECY, that 8 plants were identified by the NRC staff that use Kaowool or FP-60 to protect the post-fire safe shutdown capability. Hatch was one of the plants identified. It also states that the NEI, after contacting

each licensee, reported to the staff that the Hatch licensee voluntarily elected to eliminate the use of these barriers to meet regulatory requirements. Please clarify if Kaowool is currently required for compliance with 10 CFR 50.48, Appendix R at Hatch for protection of safe shutdown required cable trays.

RAI - 2.3.4 - FPS - 10 LRA Section A.2.1.3 states that the fire protection system design was reviewed against the applicable NFPA codes. NFPA 25, Section 2.3.3.1, "Sprinklers," states that "where sprinklers have been in place for 50 years, they shall be replaced or representative samples from one or more sample areas shall be submitted to a recognized testing laboratory for field service testing." As part of the fire protection license renewal programs at Hatch, discuss if NFPA 25 will be implemented to ensure that any aging effects have not degraded the sprinkler and its components from the original performance criteria as intended by the listing. If NFPA 25 will not be implemented at Hatch, provide justification and evidence that other means to detect aging of sprinklers, equivalent to NFPA 25, are available through plant-specific programs and procedures.

Steam and Power Conversion Systems (SPCS)

RAI - 2.3.5 - SPCS - 1 Section 2.3.5, "Steam and Power Conversion Systems," discusses the electro-hydraulic control and main condenser systems only. There is no discussion of main steam, feedwater, or auxiliary feedwater system. These systems provide functions which meet the requirements of 10 CFR 54.4 and as such, are within the scope of license renewal. Are these subsystems within the scope of license renewal? If not, why not? If yes, where are these subsystems discussed?

Electro-Hydraulic Control System (EHC)

RAI - 2.3.5 - EHC - 1 Section 2.3.5.1, "Electro-Hydraulic Control System" states that the EHC regulators within the scope of license renewal are 1N11-N042A/B and 2N32-N301A/B. The referenced components of EHC regulators of 1N11-N042A/B and 2N32-N301A/B cannot be found in drawings HL-11601, -11602, and -21012. Please identify them in the drawings. The submittals do not identify all the drawings related to the EHC or related to the intended function of main turbine pressure regulator, N32-02. There is nowhere in the submittal clearly identifying all the drawings related to N32-02. The staff identified three drawings (HL-11601, -11602, -21012) that may be related to the intended function of main turbine pressure regulator, N32-02.

RAI - 2.3.5 - EHC - 2 Section 2.3.5.1, Electro-Hydraulic Control System (EHC), states that transient analysis takes credit for the backup pressure regulator to function in the event of a downscale failure of the inservice regulator. The staff reviewed the referenced FSAR Sections (Section 11.2 for Unit 1 and

Section 10.2A.1 for Unit 2), which describe the turbine overspeed protection function. The FSAR does not discuss a “downscale failure of the inservice regulator.” (A) Describe the event of a “downscale failure of the inservice regulator” and explain how the EHC is involved. (B) Identify all the components in the EHC that may be needed for the function of main turbine pressure regulator, N32-02.

Main Condenser System (Unit 2 Only) (MC)

RAI - 2.3.5 - MC - 1 In Section 2.3.5.2, “Main Condenser System,” the components associated with the intended function of post accident radioactive decay holdup, N61-03, are identified as within the scope of license renewal for Unit 2 only. Explain why N61-03 is not applicable for Unit 1.

Structures and Structural Components

RAI - 2.4 - 1 For the following LRA sections, the staff is unable to determine with reasonable assurance whether the applicant has adequately identified the components that are included within the scope of license renewal and subject to an AMR. The applicant is required by 10 CFR Part 54.21 to “list and identify” those structures and components subject to an aging management review. The applicant has provided intended functions for the following commodity groups or civil structures groups, and a list of components within each section that are subject to an AMR, but the staff has no way to verify that the list is complete or accurate because no drawing or detailed description was provided in the LRA to define the system boundary. Clarifying statements or additional diagrams are needed to bound the commodity and structures groups so that the staff can make a reasonable assurance finding.

- Drywell penetrations
- Reactor building penetrations
- Piping specialties
- Conduits, raceways and trays
- Intake structure
- Yard structures (description states “Some of the structures...” indicating that there are more structures than those listed)

RAI - 2.4 - 2 Several structures are highlighted as having intended functions on DWG EL-10173, “General Building Site Plan,” but are not described in the LRA. These include:

- Units 1,2 Radwaste Buildings West Walls
- Units 1,2 HPCI pump rooms

Identify where in the LRA these structures are addressed or provide a justification for their exclusion from the scope of license renewal.

- RAI - 2.4 - 3 The Diesel Fuel Oil Storage Tanks are described in FSAR Section 12.3.3.1.1 as supporting or housing Seismic Class I equipment, but are not included within the scope of license renewal: Identify whether this component type is within the scope of license renewal and subject to an AMR, or justify its exclusion from the scope of license renewal.
- RAI - 2.4 - 4 Commodities such as caulking and rubber water stops are often credited in preventing flooding in structures containing safety related equipment, are passive, and are not replaced on a specified frequency. Applicants in previous license renewal reviews have identified these commodities as being within the scope of license renewal and have included them in an aging management review. Where are structural commodities such as caulking, waterstops, and other sealants evaluated in the Hatch LRA to determine whether they are within the scope of license renewal and subject to an AMR?

Piping Specialties

- RAI - 2.4 - PS - 1 The piping specialties section identified the non-safety related pipe supports that are included within the scope of license renewal as those having intended functions X43-04, W33-03 and N61-03. However, some non-safety related piping and pipe supports should also be credited for assuring the functionality of boundary valves that separate portions of systems that are required to remain functional during and after a design basis event from those that are not required to remain functional. This intended function is not included in the LRA under Piping Specialties. Identify where in the application these components are identified and evaluated or provide a justification for their omission.
- RAI - 2.4 - PS - 2 Section 2.4 of the LRA states that intended functions define the boundaries by which various component groups are analyzed for aging management purposes. Intended function L35-01 states that pipe supports for the reactor coolant system and subsystems are provided to ensure pressure retaining capability due to weight, seismic, and fluid dynamic loads. What "subsystems" are included within this commodity group?
- RAI - 2.4 - PS - 3 It is not clear from the description of the intended function for piping specialties provided in Section 2.4.1 of the LRA, or from the drawings provided to support the license renewal application (which do not identify intended function L35-01/02), that the pipe supports for all piping within the scope of license renewal, including piping segments and anchors that are credited in providing support to safety-related boundary valves, have been identified as being within the scope of license renewal. The staff is concerned that seismic II/I piping and piping segments and anchors that provide support to safety-related boundary valves have not been identified as being within the scope of license renewal. Intended function L35-01 specifically identifies the pipe supports for the reactor coolant system and "subsystems," and "all safety-related plant pipe supports,

pipe restraints, and tubing supports...” However, no definition of “subsystems” is given and no way of determining what components are included under “all safety-related plant pipe supports, pipe restraints, and tubing supports” can be determined. Intended function L35-02 captures those supports on piping associated with intended functions X43-04, W33-03 and N61-03, but states that no other seismic category II supports are within scope (including those on components identified as seismic II/I).

Conduits, Raceways, and Trays (CRT)

RAI - 2.4 - CRT - 1 It appears from the descriptions of intended functions R33-01/02 that all conduits, raceways, and trays at the Hatch nuclear plant are included within the scope of license renewal (both safety-related and nonsafety-related components). Verify that you intended to include all conduits, raceways and trays at Hatch within the scope of license renewal, or provide clarifying information about which components in the commodity group are within the scope of license renewal.

Primary Containment (PC)

RAI - 2.4 - PC - 1 Unidentified component D001 located at G3 on DWG HL-26016 was identified on drawings associated with intended function T23-01 - Torus/Drywell, as being within the scope of license renewal, but the staff could not determine what type of component it was from the legend provided by the applicant. Indicate where this component is evaluated for an AMR

RAI - 2.4 - PC - 2 The following components were not identified as being within the scope of license renewal for the primary containment in drawings referenced for intended function T23-01, but perform a pressure boundary function for the primary containment. Indicate where these components are evaluated for an AMR in the LRA or justify their exclusion from the scope of license renewal:

- Tubing segment penetrating the primary containment at B2 on DWG HL-26057.
- Tubing segment penetrating the primary containment at A2 on DWG HL-26057.
- Personnel lock, located at D2 on DWG HL-26057.
- Equipment access hatches (2) and the Control Rod Drive removable hatch described in the Unit 2 FSAR Section 3.8.2.1.3.
- Traversing in-core probe guide tube penetration described in Unit 2 FSAR Section 3.8.2.1.

Fuel Storage (FS)

- RAI - 2.4 - FS - 1 Table 2.4.4-1 of the LRA indicates that the fuel storage racks are made of aluminum. However, Section 9.1.2.2.2 of the Unit 2 FSAR describes the spent fuel racks as being comprised of storage tubes made from joining 304 stainless steel outer tubes with a Boral poison inner core. Clarify if the fuel storage racks are made of aluminum or 304 stainless steel and Boral. Modify the applicable portions of Table 2.4.4-1 of the LRA to identify the components and materials used in the fuel storage system, consistent with the FSAR, and include it in your response.
- RAI - 2.4 - FS - 2 Boral, used in the construction of the spent fuel storage rack's inner cores, is credited in controlling the reactivity of the stored fuel. This component intended function, though described in Section 9.1 of the FSAR, is not included in the list of component functions on Table 2.4.4-1. Verify that the spent fuel storage racks are credited in maintaining the stored spent fuel subcritical under all normal and abnormal storage configurations and include this component function with those for the spent fuel storage racks, as appropriate.
- RAI - 2.4 - FS - 3 Intended function T24-01 states that the fuel storage facility provides for underwater storage and handling of spent fuel. It includes the spent fuel pool, concrete vault and stainless steel liner, fuel pool gates, fuel racks, and "other equipment necessary to properly store irradiated fuel and components." The staff cannot determine, from the description in the LRA of intended function T24-01, the list of component groups requiring an AMR on Table 2.4.4-1, or from the description of the systems in FSAR Section 10.2 and 10.3 for Unit 1, and 9.1 for Unit 2, what "other equipment" should be subject to an AMR. Clarify what other fuel storage components fall into this commodity group.

Reactor Building (RB)

- RAI - 2.4 - RB - 1 The staff believes that, because the reactor building structure is within the scope of license renewal, the structural components identified below are also within the scope of license renewal. Indicate whether the following components are within the scope of license renewal. For those components within scope, identify where in the LRA the components are addressed. For those not within the scope of license renewal, provide a justification for their omission.
- Refueling Water Seal Assembly (Unit 1 FSAR 3.8.3.1.D.5)
 - Foam glass inserts between buildings (Unit 1 FSAR 12.2.15.2.2)
 - Main steam line enclosure (Unit 1 FSAR 12.2.15.2.11)

- Reactor pedestal (Unit 1 FSAR 12.2.15.2.12 and 3.8.3.1.A)
- Reactor coolant pump supports (Unit 1 FSAR 3.8.3.1.D)

RAI - 2.4 - RB - 2 It is not clear from the description of the intended function of the reactor building and from the list of components subject to an AMR in Table 2.4.5-1, what portions of the reactor building are included in Section 2.4.5 of the LRA. Specifically, portions of the reactor building internals that constitute the fuel storage system are described in Section 2.4.4 of the LRA. However, no reference to that section is made in any part of Section 2.4.5, even though the portions of the reactor building included in the fuel storage system clearly meet the applicant's definition of intended function T29-01, "Containment and Support." Provide a statement clarifying which portions of the reactor building structure are evaluated under intended function T29-01 in Section 2.4.5.

RAI - 2.4 - RB - 3 FSAR Section 12.2.1 describes the construction of the reactor building airlock, which includes a structural separation joint sealed with "three bulk water stop." Table 2.4.5-1 includes "Panel Joint Seals and Sealants" but does not include a category which includes the airlock water stops. These waterstops are part of the pressure boundary for the secondary containment, and as such, perform an intended function, which should include them within the scope of license renewal. Include the airlock water stops within the scope of license renewal and subject to an AMR or provide a justification for their omission.

Turbine Building (TB)

RAI - 2.4 - TB - 1 Section 2.4.8 of the LRA states that the turbine building is designed and constructed to ensure it will not damage any Seismic Category I structure or equipment located inside or adjacent to it. In addition, cables that are important to safety are located in a Seismic Category I chase area within the Turbine Building. Drawing EL-10173 indicates that the entire Turbine Building for Units 1 and 2 is within the scope of license renewal. However, Section 2.4.8 of the LRA indicates only certain portions of the structure are proposed to be included within the scope of license renewal. 10 CFR Part 54 states that non-safety related components (and structures) whose failure could prevent the satisfactory accomplishment of a safety-related function are to be included within the scope of license renewal. This includes structures designed Seismic II/I. Clarify whether the entire Turbine Building structure for Units 1 and 2 is within the scope of license renewal, or provide a justification for omitting portions of the Turbine building from the scope of license renewal (specifically address how the omitted portion(s) is not "designed and constructed to ensure it will not damage any Seismic Category I structure or equipment located inside or adjacent to it") .

Intake Structure (IS)

- RAI - 2.4 - IS - 1 Describe the difference between “Miscellaneous steel,” and “Structural steel” in Table 2.4.9-1: Both groups have similar component functions (except for “flow direction,” which is undefined) and are made from identical material. It is unclear what the differences are between the two structural component categories, and what actual Intake Structure components belong in each category.
- RAI - 2.4 - IS - 2 FSAR Section 12.2.7 states that the following equipment is included as part of the Intake Structure: coarse trash racks, traveling screen, and stop logs. Identify whether these components are within the scope of license renewal and what component commodity group they are included within on Table 2.4.9-1, or justify their exclusion from the scope of license renewal.
- RAI - 2.4 - IS - 3 Components are provided that protect the Intake Structure from a site related event, specifically, a transportation accident. Steel sheet pile cells with wood fenders described in the FSAR are designed to protect the Intake structure from a direct hit by river traffic or river debris. Table 2.4.9-1 of the LRA does not include any wooden components and it is not clear from the description of the Miscellaneous and Structural Steel commodities’ intended functions on the table that the steel sheet piles are included in either of those commodity groups. Identify where in Section 2.4.9 these components are included within the scope of license renewal or justify their exclusion.
- RAI - 2.4 - IS - 4 Section 12.2.7 of the Unit 1 FSAR describes a creosote wall that was constructed near the Intake Structure to prevent damage from occurring to the Intake Structure from undercutting by the river. It is not clear whether any of the components listed on Table 2.4.9-1 include the aforementioned creosote wall. State whether this wall is within the scope of license renewal and subject to an AMR, or justify its omission.

Emergency Diesel Generator Building (EDGB)

- RAI - 2.4 - EDGB - 1 Ventilation for the emergency diesel generators is required for the components to perform their intended function. Ventilation components for both cooling and combustion air and exhaust are not described in the license renewal application. Clarify if these components are within the scope of license renewal and identify where in the LRA they are evaluated. If these components are not within the scope of license renewal, provide justification for their exclusion.

Electrical (ELEC)

- RAI - 2.5 - ELEC - 1 Sections 3.4.1, C.1.3, and C.2.5 of the LRA evaluate the aging effects, applicable to electrical components, that are expected to occur due to

(1) thermal degradation of organic materials, (2) thermoxidative degradation, (3) radiolysis of organic materials, and (4) water treeing, depending on environmental conditions. Further, the LRA states that high temperatures can result in thermal degradation and thermoxidative degradation of electrical components and that a radiation environment can result in radiolysis of organic materials. However, the LRA concludes that no aging effects associated with high temperature or radiation require aging management for non-EQ (environmental qualification) cables, connectors, splices, and terminal blocks. This conclusion is not consistent with the aging management programs and activities for electrical cables and connections exposed to adverse localized environments caused by heat or radiation as described in the staff's Generic Aging Lessons Learned Report and the two previous license renewal applications that have been approved by NRC. Therefore, for non-EQ cables, connectors, splices, and terminal blocks that are within the scope of license renewal and located in the reactor building, control building, the lower regions of the drywell, the turbine building, the diesel generator building and the intake structure, provide a description of the following:

- An aging management program for accessible and inaccessible electrical cables and connections exposed to an adverse localized environment caused by heat or radiation.
- An aging management program for accessible and inaccessible electrical cables used in instrumentation circuits that are sensitive to a reduction in conductor insulation resistance exposed to an adverse localized environment caused by heat or radiation.

Core Spray

RAI 3.3 - CS - 1 Based on Table 3.2.3-3 of the license renewal application (LRA), Galvanic Susceptibility Inspections is an applicable aging management program (AMP) for the carbon steel piping and valve bodies exposed to the torus water environment. However, this AMP is not credited for managing the aging effects of the carbon steel pump casings exposed to the same environment. Resolve this inconsistency.

High Pressure Coolant Injection

RAI 3.3 - HPCI - 1 Based on Table 3.2.3-4 of the LRA, carbon steel piping exposed to reactor water is a non-class 1 commodity discussed further in Section C.2.2.1.1 of the LRA. This section describes the Treated Water Systems Piping Inspections as a method of validating the adequacy of the Reactor Water Chemistry Control. However, this program is not listed in Table 3.2.3-4 of the LRA as an applicable AMP for carbon steel components exposed to reactor water. Resolve this discrepancy.

- RAI 3.3 - HPCI - 2 Based on Table 3.2.3-4 of the LRA, carbon steel piping exposed to demineralized water is a non-class 1 commodity discussed further in Section C.2.2.2.1 of the LRA. This section credits the Galvanic Susceptibility Inspections for providing appropriate examinations to identify potential loss of material due to galvanic corrosion. However, this program is not listed in Table 3.2.3-4 of the LRA as an applicable AMP for carbon steel piping exposed to demineralized water. Resolve this discrepancy.
- RAI 3.3 - HPCI - 3 Based on Table 3.2.3-4 of the LRA, stainless steel piping exposed to a wetted gas environment is a non-class 1 commodity discussed further in Section C.2.2.9.2 of the LRA. This section discusses the Passive Component Inspection Activities for providing periodic visual examinations to identify and find any significant aging effects. However, this program is not listed in Table 3.2.3-4 of the LRA as an applicable AMP for stainless steel piping exposed to a wetted gas environment. Resolve this discrepancy.
- RAI 3.3 - HPCI - 4 Based on Table 3.2.3-4 of the LRA, carbon steel pump casing exposed to a demineralized water environment is a non-class 1 commodity discussed further in Section C.2.2.2.1 of the LRA. This section discusses the Galvanic Susceptibility Inspections for providing appropriate examinations of carbon steel to stainless steel dissimilar metal welds to identify potential loss of material due to galvanic corrosion. However, this program is not listed in Table 3.2.3-4 of the LRA as an applicable AMP for carbon steel pump casing exposed to a demineralized water environment. Resolve this discrepancy.
- RAI 3.3 - HPCI - 5 Based on Table 3.2.3-4 of the LRA, stainless steel restricting orifice exposed to a demineralized water environment is a non-class 1 component discussed further in Section C.2.2.2.2 of the LRA. This section discusses loss of material and cracking due to thermal fatigue as applicable aging effects. However, cracking due to thermal fatigue is not listed in Table 3.2.3-4 of the LRA as an applicable aging effect for this component. Resolve this discrepancy.
- RAI 3.3 - HPCI - 6 Based on Table 3.2.3-4 of the LRA, stainless steel restricting orifice exposed to a wetted gas environment is a non-class 1 component discussed further in Section C.2.2.9.2 of the LRA. This section discusses the Passive Component Inspection Activities as an applicable AMP for this component. However, the Passive Component Inspection Activities is not listed in Table 3.2.3-4 as an applicable AMP for this component. Resolve this discrepancy.
- RAI 3.3 - HPCI - 7 Based on Table 3.2.3-4 of the LRA, the carbon steel turbine exposed to a wetted gas environment is a non-class 1 component discussed further in Section C.2.2.9.1. This commodity group includes the HPCI turbine

pressure boundary components. The staff requests the applicant to identify the component(s) in the listing of “turbine” in Table 3.2.3-4.

- RAI 3.3 - HPCI - 8 Based on Table 3.2.3-4 of the LRA, the carbon steel valve bodies exposed to demineralized water is a non-class 1 component discussed further in Section C.2.2.2.1 of the LRA. This section discusses the Treated Water Systems Piping Inspections as an applicable AMP for this commodity group. However, this inspection AMP is not listed in Table 3.2.3-4 as an applicable AMP for this component. Resolve this discrepancy.
- RAI 3.3 - HPCI - 9 Based on Table 3.2.3-4 of the LRA, the carbon steel and stainless steel valve bodies exposed to a wetted gas environment are non-class 1 components discussed further in Section C.2.2.9.1 and Section C.2.2.9.2 of the LRA. These sections discuss Passive Component Inspection Activities as an applicable AMP for these components. However, these activities are not listed in Table 3.2.3-4 as an applicable AMP for these components. Resolve this discrepancy.

Reactor Core Isolation Cooling

- RAI 3.3 - RCIC - 1 Based on Table 3.2.3-5 of the LRA, stainless steel piping exposed to a wetted gas environment is a non-class 1 component discussed further in Section C.2.2.9.2 of the LRA. This section discusses the Passive Component Inspection Activities as an applicable AMP for this component. However, these activities are not listed in Table 3.2.3-5 as an applicable AMP for this component. Resolve this discrepancy.
- RAI 3.3 - RCIC - 2 Based on Table 3.2.3-5 of the LRA, carbon steel pump casing exposed to a demineralized water environment is a non-class 1 component discussed further in Section C.2.2.2.1 of the LRA. This section discusses Galvanic Susceptibility Inspections as an applicable AMP for this component. However, this inspection is not listed in Table 3.2.3-5 of the LRA as an applicable AMP for this component. Resolve this discrepancy.
- RAI 3.3 - RCIC - 3 Based on Table 3.2.3-5 of the LRA, stainless steel restricting orifice exposed to a demineralized water environment is a non-class 1 component discussed further in Section C.2.2.2.2 of the LRA. This section discusses loss of material and cracking due to thermal fatigue as applicable aging effects. However, cracking due to thermal fatigue is not listed in Table 3.2.3-5 of the LRA as an applicable aging effect for this component. Resolve this discrepancy.
- RAI 3.3 - RCIC - 4 Based on Table 3.2.3-5 of the LRA, stainless steel restricting orifice exposed to a wetted gas environment is a non-class 1 component discussed further in Section C.2.2.9.2 of the LRA. This section discusses

the Passive Component Inspection Activities as an applicable AMP for this component. However, the Passive Component Inspection Activities is not listed in Table 3.2.3-5 as an applicable AMP for this component. Resolve this discrepancy.

- RAI 3.3 - RCIC - 5 Based on Table 3.2.3-5 of the LRA, carbon steel steam trap exposed to reactor water is a non-class 1 commodity discussed further in Section C.2.2.1.1 of the LRA. This section describes the Galvanic Susceptibility Inspections as an applicable AMP for this component. However, this program is not listed in Table 3.2.3-5 of the LRA as an applicable AMP for this component. Resolve this discrepancy.
- RAI 3.3 - RCIC - 6 Based on Table 3.2.3-5 of the LRA, carbon steel thermowell exposed to demineralized water is a non-class 1 commodity discussed further in Section C.2.2.2.1 of the LRA. This section describes the Galvanic Susceptibility Inspections as an applicable AMP for this component. However, this program is not listed in Table 3.2.3-5 of the LRA as an applicable AMP for this component. Resolve this discrepancy.
- RAI 3.3 - RCIC - 7 Based on Table 3.2.3-5 of the LRA, stainless steel valve bodies exposed to a demineralized water environment is a non-class 1 component discussed further in Section C.2.2.2.2 of the LRA. This section discusses loss of material and cracking due to thermal fatigue as applicable aging effects. However, cracking due to thermal fatigue is not listed in Table 3.2.3-5 of the LRA as an applicable aging effect for this component. Resolve this discrepancy.

Standby Gas Treatment

- RAI 3.3 - SGTS - 1 Based on Table 3.2.3-6 of the LRA, stainless steel piping exposed to air is a non-class 1 component discussed further in Section C.2.2.9.2 of the LRA. This section discusses the Passive Component Inspection Activities as an applicable AMP for this component. However, the Passive Component Inspection Activities is not listed in Table 3.2.3-6 as an applicable AMP for this component. Resolve this discrepancy.
- RAI 3.3 - SGTS - 2 Based on Table 3.2.3-6 of the LRA, stainless steel thermowell and valve bodies exposed to air are non-class 1 components discussed further in Section C.2.2.9.2 of the LRA. This section discusses the Passive Component Inspection Activities as an applicable AMP for these components. However, the Passive Component Inspection Activities is not listed in Table 3.2.3-6 as an applicable AMP for these components. Resolve this discrepancy.

Primary Containment Purge and Inerting

- RAI 3.3 - P&I - 1 Based on Table 3.2.3-7 of the LRA, carbon steel piping exposed to torus water is a non-class 1 component discussed further in Section C.2.2.3.1

of the LRA. This section discusses the Protective Coatings Program as an applicable AMP for these components. However, this program is not listed in Table 3.2.3-7 as an applicable AMP for this component. Resolve this discrepancy.

- RAI 3.3 - P&I - 2 Based on Table 3.2.3-7 of the LRA, stainless steel thermowell exposed to an inside environment is a non-class 1 component discussed further in Section C.2.2.9.2 of the LRA. This section discusses the Passive Component Inspection Activities as an applicable AMP for this component. However, the Passive Component Inspection Activities is not listed in Table 3.2.3-7 as an applicable AMP for this component. The staff requests the applicant to clarify this discrepancy.

Post-LOCA Hydrogen Recombiners

- RAI 3.3 - HR - 1 Based on Table 3.2.3-8 of the LRA, stainless steel valve bodies exposed to a wetted gas environment are non-class 1 components discussed further in Section C.2.2.9.2 of the LRA. This section discusses the Passive Component Inspection Activities as an applicable AMP for this component. However, the Passive Component Inspection Activities is not listed in Table 3.2.3-8 as an applicable AMP for this component. Resolve this discrepancy.

Electro-Hydraulic Control

- RAI - 3.5- EHC - 1 Section 2.3.5.1 of the LRA, stated that the purpose of the electro-hydraulic control (EHC) system is to provide control of reactor pressure during reactor startup, power operation, and shutdown. EHC also provides the means to control main turbine speed and acceleration during turbine startup and also protect the main turbine from undesirable operating conditions by initiating alarms, trips, and runbacks. The LRA also stated that EHC regulators 1N11-N042A/B and 2N32-N301A/B are included within the scope of license renewal. However, the regulators are not included with the mechanical components listed in the Table 2.3.5-1 of the LRA. Provide a complete list of all EHC mechanical components requiring an aging management review that are associated with the pressure control unit, speed control unit, desired load control unit, valve control unit, hydraulic power unit, and emergency trip system. Also, provide in the LRA Table 3.2.5-1, pertinent details of the aging management programs for the identified components.

Main Condenser

- RAI - 3.5 - MC - 1 In Section 2.3.5.2 of the LRA, Table 2.3.5-2, stainless steel piping is identified as one of the mechanical components requiring an aging management review. However, in Table 3.2.5-2 of the LRA, two different commodity groups C2.2.1.1 and C2.2.1.2, have been identified for the aging management of the stainless steel piping component which is

stated to perform the same function and is under the same environment. Provide a rationale for evaluating this component under two separate commodity groups.

RAI - 3.5 - MC - 2 In Table 3.2.5-2 of the LRA, bolting is identified as requiring an aging management review for components supporting main condenser system intended functions and their component functions. Appendix C commodity group C2.2.10.1 is identified for loss of pre-load aging effects due to embedment, gasket creep, thermal effects, and self-loosening. Self-loosening is described in Section C.1.2.7.2 to be caused by vibration, flexing of the joint, cyclic shear loads, and thermal cycles. In light of this, it is possible that some pipe cracking may be caused by the vibratory and/or cyclic aging effects within the main condenser system. Provide the cause of cracking identified in Table 3.2.5-2 and identify (if any) the most critical components and locations that experience dynamic fatigue aging effects requiring aging management.

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