



Crystal River Nuclear Plant  
Docket No. 50-302  
Operating License No. DPR-72

Ref: 10 CFR 54

November 12, 2009  
3F1109-05

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

Subject: Crystal River Unit 3 – Response to Request for Additional Information for the Review of the Crystal River Unit 3 Nuclear Generating Plant, License Renewal Application (TAC NO. ME0274) – Section 2.3

- References: (1) CR-3 to NRC letter, 3F1208-01, dated December 16, 2008, "Crystal River Unit 3 – Application for Renewal of Operating License"
- (2) NRC to CR-3 letter, dated October 15, 2009, "Request for Additional Information for the Review of the Crystal River Unit 3 Nuclear Generating Plant, License Renewal Application (TAC NO. ME0274)"

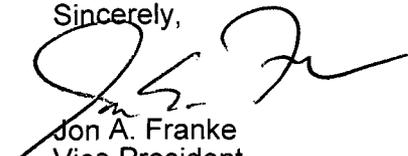
Dear Sir:

On December 16, 2008, Florida Power Corporation (FPC), doing business as Progress Energy Florida, Inc. (PEF), requested renewal of the operating license for Crystal River Unit 3 (CR-3) to extend the term of its operating license an additional 20 years beyond the current expiration date (Reference 1). Subsequently, the Nuclear Regulatory Commission (NRC), by letter dated October 15, 2009, provided requests for additional information (RAI) concerning the CR-3 License Renewal Application (Reference 2). The Enclosure to this letter provides the response to Reference 2.

No new regulatory commitments are contained in this submittal.

If you have any questions regarding this submittal, please contact Mr. Mike Heath, Supervisor, License Renewal, at (910) 457-3487, e-mail at [mike.heath@pgnmail.com](mailto:mike.heath@pgnmail.com).

Sincerely,



Jon A. Franke  
Vice President  
Crystal River Unit 3

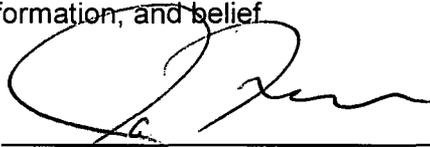
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Enclosure: Response to Request for Additional Information

xc: NRC CR-3 Project Manager  
NRC License Renewal Project Manager  
NRC Regional Administrator, Region II  
Senior Resident Inspector

**STATE OF FLORIDA**  
**COUNTY OF CITRUS**

Jon A. Franke states that he is the Vice President, Crystal River Nuclear Plant for Florida Power Corporation, doing business as Progress Energy Florida, Inc.; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission the information attached hereto; and that all such statements made and matters set forth therein are true and correct to the best of his knowledge, information, and belief.

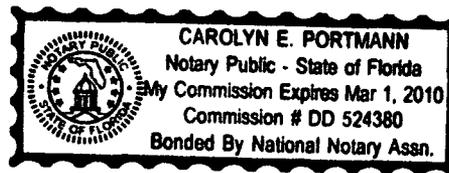


Jon A. Franke  
Vice President  
Crystal River Nuclear Plant

The foregoing document was acknowledged before me this 12<sup>th</sup> day of November, 2009, by Jon A. Franke.



Signature of Notary Public  
State of Florida



(Print, type, or stamp Commissioned  
Name of Notary Public)

Personally  Known            -OR- Produced  Identification

**PROGRESS ENERGY FLORIDA, INC.**

**CRYSTAL RIVER UNIT 3**

**DOCKET NUMBER 50 - 302 / LICENSE NUMBER DPR - 72**

**ENCLOSURE**

**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

## REQUEST FOR ADDITIONAL INFORMATION

### RAI 2.3-01 General Items

Background: Title 10 of the *Code of Federal Regulations* (10 CFR) 54.4(a) provides criteria for determining whether systems or components are in scope for license renewal.

Issue: Sections of the Crystal River Unit 3 Nuclear Generating Plant (CR-3) license renewal application (LRA) indicate that parts of various systems are in scope because they contain components that are relied upon during postulated fires per 10 CFR 54.4(a)(3). Section 2.1 of the CR-3 LRA describes the process for selecting components that are in scope under 10 CFR 54.4(a)(3). However, numerous systems identified with components that are included in scope under 10 CFR 54.4(a)(3) to operate during postulated fires contain no discussion of the (a)(3) components in the CR-3 LRA system description text, the CR-3 final safety analysis report (FSAR) discussion, or on the CR-3 LRA drawings provided. It is not possible to identify components that are included in scope under 10 CFR 54.4(a)(3) for components that are relied upon during postulated fires without an understanding of the components that were selected by the process. Specific examples of systems with components that are not identified within scope under 10 CFR 54.4(a)(3) include:

- 2.3.3.25 Circulating Water System
- 2.3.3.28 Fuel Oil System
- 2.3.3.32 Demineralized Water System
- 2.3.3.38 Instrument Air System
- 2.3.3.42 Make Up and Purification System
- 2.3.4.3 Condensate Chemical Treatment System
- 2.3.4.4 Condensate System
- 2.3.4.18 Secondary Plant System

Request: Provide sufficient information to permit the staff to identify all portions of the systems within the license renewal boundary as specified in 10 CFR Section 54.4(a)(3).

### Response:

*Consistent with the methodology utilized in previous Progress Energy License Renewal Applications (LRA), the CR-3 scoping process for 10 CFR 54.4(a)(3) was based on a review of component level data in the Passport Equipment Database (EDB), supplemented by topical reviews as necessary, to ensure a comprehensive result. CR-3 utilizes the EDB to maintain the licensing basis for regulated events by translating compliance requirements in plant design and licensing basis documents into component level parameters.*

*The EDB provides individual component parameters associated with compliance with Station Blackout (SBO), Fire Protection (FP), Anticipated Transients Without Scram (ATWS), and Environmental Qualification (EQ) requirements. Fire Protection parameters can be further broken down into Appendix R and classical fire protection, and within classical fire protection, a separate EDB parameter is also assigned to credited fire barrier penetrations. CR-3 considered*

that components credited in the EDB for regulated events are in License Renewal scope. Likewise, systems containing credited components are in scope, with the associated system intended function being compliance with the applicable regulated event(s).

The mechanical systems identified in Table 2.2-1 of the CR-3 LRA also include electrical and civil components that are credited in licensing evaluations for compliance with 54.4(a)(3) events. Since scoping was done on a system basis, these civil and electrical components are subject to scoping as part of the system they are assigned to in the EDB, and their scoping results are reflected in the resulting list of system intended functions presented in the LRA. A review of scoping results for the examples given in this RAI shows that 54.4(a)(3) scoping for each of these systems was coupled to electrical and civil components that do not appear on License Renewal boundary drawings, and that most of these systems have no mechanical components or mechanical intended function associated with 54.4(a)(3) scoping. For example, the Condensate Chemical Treatment, Condensate, Circulating Water, Demineralized Water, Instrument Air, and Makeup & Purification Systems all have fire barrier seals (a civil feature) associated with the 54.4(a)(3) system intended function for Fire Protection. Generally, where 54.4(a)(3) scoping is associated with a mechanical intended function, the function is not unique to the regulated events involved, and is encompassed by the system descriptions provided in Section 2.3 of the CR-3 LRA. The following table addresses the 54.4(a)(3) scoping basis for the examples presented in this RAI.

System	Regulated Event	10 CFR 54.4(a)(3) Scoping Basis
2.3.3.25 Circulating Water	FP	Contains credited fire barrier penetration seals.
2.3.3.28 Fuel Oil	EQ	Contains EQ Electrical/I&C components credited with fuel oil (FO) supply to the Emergency Diesel Generators.
	FP	Contains check valve credited in preventing backflow of FO, this valve is on the credited fill line for Emergency Feedwater Pump FO tank DFT-4. Credited in Appendix R/Safe Shutdown evaluations associated with FO supply to Emergency Diesel Generators.
	SBO	Credited in SBO evaluations associated with FO supply to diesel-driven Emergency Feedwater Pump (EFP-3).
2.3.3.32 Demineralized Water	EQ	Contains EQ Electrical/I&C components associated with containment isolation function.
	FP	Contains credited fire barrier penetration seals.
2.3.3.38 Instrument Air	FP	Contains credited fire barrier penetration seals. Contains diesel powered air compressor and air reservoirs credited in Appendix R/Safe Shutdown evaluations.
	SBO	Contains components credited in SBO evaluations associated with air supply to Atmospheric Dump Valves and air reservoirs for Make Up System valves.
2.3.3.42 Make Up & Purification	EQ	Contains Electrical/I&C components credited in EQ evaluations.
	FP	Contains credited fire barrier penetration seals. Credited with providing inventory control in Appendix R/Safe Shutdown evaluations.
	SBO	Contains system containment isolation valves credited to close to maintain Reactor Coolant System inventory and direct current powered Make Up Pump lube oil auxiliary pumps credited with being secured in the event.
2.3.4.3 Condensate Chemical Treatment	FP	Contains credited fire barrier penetration seals.

System	Regulated Event	10 CFR 54.4(a)(3) Scoping Basis
2.3.4.4 Condensate	FP	Contains credited fire barrier penetration seals.
		Contains the Condensate Storage Tank, and related level instrumentation, credited as a source of water for safe shutdown.
2.3.4.18 Secondary Plant	ATWS	Contains Electrical/I&C components credited in ATWS evaluations.
	EQ	Contains Electrical/I&C components credited in EQ evaluations.
	FP	Contains Electrical/I&C components credited in Appendix R/Safe Shutdown evaluations.
	SBO	Contains Electrical/I&C components and instrument seals associated with steam generator level control.

**RAI 2.3-02 General Items**

**Background:** 10 CFR 54.21(a)(1) requires the applicant to provide a list of structures and components subject to an aging management review (AMR). The staff reviews the LRA, FSAR, and license renewal boundary drawings to verify that the list of components provided for each system is complete.

**Issue:** The CR-3 LRA does not specify which version of the FSAR is to be used as a reference. The last revision of the FSAR submitted to the NRC was Revision 30. Subsequently, a complete copy of Revision 31 of the CR-3 FSAR was provided following the June 2009 NRC site audit. As a result of the June 2009 NRC site audit, it was determined that most of the calculations for the CR-3 LRA were performed using CR-3 FSAR Revision 30.

**Request:** Provide revisions to the FSAR that would affect any systems within the scope of license renewal since Revision 30.

**Response:**

*The CR-3 LRA was submitted to the NRC by letter dated December 16, 2008. The Final Safety Analysis Report (FSAR) revision submitted to the NRC, and in effect at the time of the LRA submittal, was Revision 31. FSAR Revision 31 was submitted by CR-3 to NRC letter, 3F0508-13, dated May 28, 2008, "Crystal River Unit 3 - Final Safety Analysis Report, Revision 31 and 10 CFR 50.59 Report." Copies of FSAR Revision 31, on CD format, were provided during the June 2009 audit as an aid to the NRC auditors.*

*Regardless of the FSAR revision that was in effect during preparation of the basis documents (i.e., the calculations) that support the LRA, the technical information supporting the LRA was reviewed and updated prior to submittal of the LRA. In addition, the basis documents supporting the LRA were updated as necessary to reflect the results of this review.*

*The next revision of the FSAR will be submitted following the current refueling outage at CR-3 in accordance with 10 CFR 50.71(e). Future changes to the Current Licensing Basis that materially affect the contents of the LRA will be provided to the NRC in accordance with 10 CFR 54.21(b).*

**RAI 2.3-03 General Items**

Background: 10 CFR Section 54.21(a)(1) requires applicants to identify and list components subject to an AMR. The staff confirms inclusion of all components subject to an AMR by reviewing the components within the license renewal boundary.

Issue: During the scoping and screening review process, the continuation from one drawing to another could not be established. Drawing numbers and/or locations for continuations were not identified and could not be located where identified, the continuation drawing was not provided, and piping expected to be in scope based on one drawing led to a different conclusion on a connecting drawing. Given below is a table that indicates the systems identified with these drawing inconsistencies.

License Renewal Application (LRA) Section/Drawing Number	Continuation Location / Issue
<b>2.3.3.24</b>	
<b>INDUSTRIAL COOLING SYSTEM</b>	
LRA-302-762-LR, SH01	Four feedwater (FW) system relief valves are shown at locations E-4 (connected to CIHE-2A and 2B), F-3 (near CIV-279), and G-3 (near CIV-280). The relief line from each of these valves is shown to be within scope of the license renewal. However, the lines from these four valves are not continued on another CR-3 LRA drawing, nor do they terminate at another valve or structure.
<b>2.3.3.26</b>	
<b>EFP-3 DIESEL AIR STARTING SYSTEM</b>	
LRA-302-778-LR, SH01	Two lines connected to two solenoid operators in locations C-6 and E-6 are highlighted in scope for license renewal. However they are not continued on another CR-3 LRA drawing, nor do they terminate at another valve or structure.
LRA-302-778-LR, SH01	The drawing depicts four lines to the building sump pump as included in scope of license renewal under 10 CFR 54.4(a)(1). The connecting drawing is not noted. Therefore, it is not possible to evaluate the interaction of the sump pump piping on the EFP-3 diesel air starting system. CR-3 LRA drawing 302-114-LR, SH02, depicts an EFP area sump, but it is not clear if this is the building sump referenced on CR-3 LRA drawing 302-778-LR, SH01.

<b>2.3.3.27</b>	
<b>DECAY HEAT CLOSED CYCLE COOLING SYSTEM</b>	
LRA-302-631-LR, SH01	Relief valves are shown in structures that contain 10 CFR 54.4(a)(1) components. The discharge path of these relief valves is not indicated. An example of this on the referenced drawing occurs at locations E-3, C-7, D-8, D-9, and B-10. However, similar relief valves appear in numerous system drawings. Identify the relief path from the relief valves for all systems inside structures that contain 10 CFR 54.4(a)(1) components so that spatial interaction can be evaluated.
<b>2.3.3.29</b>	
<b>JACKET COOLING SYSTEM</b>	
LRA-302-283-LR, SH01 & 02	The drawing depicts a pipe line marked 300-1 (shown at D-9 on each drawing) as included in scope of license renewal under 10 CFR 54.4(a)(1). This pipe has an unidentified continuation arrow. Without further information on this interface, it is not possible to evaluate the interaction of the connected piping on the jacket coolant system.
<b>2.3.3.32</b>	
<b>DEMINERALIZED WATER SYSTEM</b>	
LRA-302-182-LR, SH01	At F-8, the drawing identifies connected piping in the liquid waste disposal spent resin transfer system at the decant pump suction as included in scope of license renewal under 10 CFR 54.4(a)(2). The associated drawing, 302-681-LR, SH05 does not identify any piping in scope at the decant pump suction.
	At C-4, the drawing identifies connected piping in the liquid waste disposal reactor coolant subsystem at the deborating demineralizers as included in scope of license renewal under 10 CFR 54.4(a)(2). The associated drawing, 302-681-LR, SH03 identifies this connection as the boundary to an area exclusion where spatial interaction concerns do not exist. Therefore, there is a conflict as to what the applicant is identifying as in scope and what is excluded.

<b>2.3.3.38</b>	
<b>INSTRUMENT AIR SYSTEM</b>	
LRA-302-271-LR, SH01	<p>The drawing depicts the backup air system for automatic dump valves (ADV) as in scope of license renewal under 10 CFR 54.4(a)(2). Continuation arrows are depicted in the intermediate building to MSV-25 and MSV-26. However the various air piping to the ADVs is not depicted on any instrument air system drawing or on the main steam drawings. Without a more extensive discussion of the instrument air piping to MSV-25 and MSV-26, it is not possible to validate that all components associated with the backup air system have been included in scope and evaluated for inclusion in an aging management program (AMP).</p>
	<p>No connection is shown from the instrument air system to the backup air system. A connection through IAV-546 and IAV-548 was expected.</p>
LRA-302-271-LR, SH04	<p>The drawing depicts an unlabeled drawing continuation mark as in scope of license renewal under 10 CFR 54.4(a)(2) at drawing location E-2. The CR-3 FSAR, Rev 31, drawing shows this connection to the condensate demineralizer system.</p> <p>This reference is not included with the license renewal drawings.</p>
	<p>The drawing inconsistently depicts American Society of Mechanical Engineers Section III, Class 2 and Class 4 flags on either side of containment penetrations 111 and 112 at location C-9. The depicted labeling confuses the evaluation of the boundaries for 10 CFR 54.4(a)(1) and (a)(2) piping and piping components.</p>
<b>2.3.3.41</b>	
<b>MISCELLANEOUS DRAINS SYSTEM</b>	
LRA-302-114-LR, SH02	<p>The drawing depicts a pipe continuation to a drain as in scope of license renewal at drawing location H-4. It is not clear if this continuation depicts a pipe run or an opening to another drain sump. No boundary flag is depicted. It is not possible to completely evaluate piping that may be in scope of license renewal for spatial interaction without further discussion.</p>

<b>2.3.3.49</b>	
<b>NUCLEAR SERVICE AND DECAY HEAT SEA WATER SYSTEM</b>	
LRA-302-611-LR, SH01	The line leaving valve RWV-111 shown at location F-6 is shown to be within the scope of license renewal. However, it is not continued on another CR-3 LRA drawing, nor is it terminated at another valve or structure.
	The discharge lines from RWV-61 (at location E-3) and RWV-62 (at location E-4) are shown to be within the scope of license renewal. However, the lines from these two valves are not continued on another CR-3 LRA drawing, nor do they terminate at another valve or structure.
<b>2.3.3.50</b>	
<b>STATION AIR SYSTEM</b>	
LRA-302-271-LR, SH09	The drawing depicts connections to fire service valves (FSV-1145, FSV-1146, and FSV-1147) as in scope for license renewal. No connecting piping is depicted for a continued scoping and spatial interaction evaluation.
<b>2.3.3.52</b>	
<b>STATION DRAINS SYSTEM</b>	
LRA-302-113-LR, SH02	The line coming into isolation valve SDV-133 at location G-7 is shown to be within the scope of license renewal. However, it is not continued on another CR-3 LRA drawing, nor is it terminated at another valve or structure.
LRA-302-163-LR, SH01	Instrument air supply to SDV-90 shown at location A-8 is shown to be within the scope of license renewal. However, the line into this valve is not continued on another CR-3 LRA drawing, nor is it terminated at another valve or structure.
<b>2.3.3.60</b>	
<b>WASTE SAMPLING SYSTEM</b>	
LRA-302-693-LR, SH01	The air supply line to flow control, RM-A6-FC, at location G-5 is shown to be within the scope of license renewal. However, it is not continued on another CR-3 LRA drawing, nor is it terminated at another valve or structure.

<b>2.3.4.1</b>	
<b>CONDENSER AIR REMOVAL SYSTEM</b>	
LRA-302-131-LR, SH01	At location G-3, the applicant shows a line that goes into valve ARV-164. The drawing indicates that this line is within the scope of AMR, but it does not indicate where the line originates from or to what the line connects.
<b>2.3.4.4</b>	
<b>CONDENSATE SYSTEM</b>	
LRA-302-101-LR, SH01	Locations B-4 and B-9 show an exhaust line from the main feedwater pumps turbines (FWTB-1A at location B-4, FWTB-1B at location B-9) to an open area of the drawing. These exhaust lines are also labeled "By Foster Wheeler Corp." However, it is not clear if the FWTB exhaust to the atmosphere within the turbine building or to some other component or heat sink. Also, these two lines show no visible means of support or anchor.
<b>2.3.4.10</b>	
<b>MAIN FEEDWATER SYSTEM</b>	
LRA-302-081-LR SH02	Four FW system relief valves are shown at locations B-1 (FWV-263), B-2 (FWV-262), D-2 (FWV-16), and D-3 (FWV-17). The relief line from each of these valves is shown to be within scope of the license renewal. However, the lines from these four valves are not continued on another CR-3 LRA drawing, nor do they terminate at another valve or structure.
	Two FW system relief valves are shown at locations D-7 (FWV-4) and D-9 (FWV-3). However, the relief line from each of these valves (FWV-3 & -4) are not shown on the drawing. Also, the lines are not continued on another CR-3 LRA drawing, nor do they terminate at another valve or structure.

**Request:** Provide sufficient information for the continuation issues identified above to permit the staff to review all portions of the systems within the license renewal boundary as specified in 10 CFR Section 54.21(a)(1).

**Response:**

*CR-3 flow diagrams often do not depict, in their entirety, all relief valve discharge piping, instrument air piping to point of use devices, sample piping/tubing and drain piping. These piping components are included in scope in Class I structures. In addition, CR-3 has revised its methodology for spatial interaction scoping to be more inclusive than the original LRA submittal scope as discussed in the response to RAI 2.1-2 in CR-3 to NRC letter, 3F0909-04, "Crystal*

River Unit 3 – Response to Requests for Additional Information for the Review of the Crystal River Unit 3 Nuclear Generating Plant, License Renewal Application (TAC NO. ME0274),” dated September 18, 2009 (ML092650272). A specific evaluation for each of the identified continuation issues is included in the following table.

<b>LRA Section/ Drawing Number</b>	<b>Continuation Location / Issue</b>	<b>Resolution</b>
<b>2.3.3.24</b>	<b>INDUSTRIAL COOLING SYSTEM</b>	
LRA-302-762-LR, SH01	Four feedwater (FW) system relief valves are shown at locations E-4 (connected to CIHE-2A and 2B), F-3 (near CIV-279), and G-3 (near CIV-280). The relief line from each of these valves is shown to be within scope of the license renewal. However, the lines from these four valves are not continued on another CR-3 LRA drawing, nor do they terminate at another valve or structure.	The unnamed relief valves connected to CIHE-2A and CIHE-2B were factory relief valves provided with these hot water heaters. The discharge flow path from these relief valves is not depicted on plant drawings, but as a matter of design is directed to an area, such as a hub drain, where a discharge would not create a personnel safety hazard. CIHE-2A and CIHE-2B relief valve discharge piping located inside the Intermediate Building (IB) is in the scope of License Renewal.  Relief valves CIV-279 and CIV-280 do not have discharge piping, and discharge directly into the Reactor Building (RB).
<b>2.3.3.26</b>	<b>EFP-3 DIESEL AIR STARTING SYSTEM</b>	
LRA-302-778-LR, SH01	Two lines connected to two solenoid operators in locations C-6 and E-6 are highlighted in scope for license renewal. However they are not continued on another CR-3 LRA drawing, nor do they terminate at another valve or structure.	The two referenced lines are vents for the solenoid valves. There is no continuation on additional CR-3 drawings.
LRA-302-778-LR, SH01	The drawing depicts four lines to the building sump pump as included in scope of license renewal under 10 CFR 54.4(a)(1). The connecting drawing is not noted. Therefore, it is not possible to evaluate the interaction of the sump pump piping on the EFP-3 diesel air starting system. CR-3 LRA drawing 302-114-LR, SH02, depicts an EFP area sump, but it is not clear if this is the building sump referenced on CR-3 LRA drawing 302-778-LR, SH01.	The sump pump is depicted on drawing 302-271-LR, Sheet 9 (G-5) and is part of the Station Drain System. In the case of the drains from the air receiver tanks in the Emergency Feedwater Pump Diesel Air Starting System, the lines are free-ended and routed to an open trench that communicates with the building.
<b>2.3.3.27</b>	<b>DECAY HEAT CLOSED CYCLE COOLING SYSTEM</b>	
LRA-302-631-LR, SH01	Relief valves are shown in structures that contain 10 CFR 54.4(a)(1) components. The discharge path of these relief valves is not indicated. An example of this on the referenced drawing occurs at locations E-3, C-7, D-8, D-9, and B-10. However, similar relief valves	Thermal relief valves and heat exchanger / vessel overpressure protection installation at CR-3 incorporates discharge piping, as needed, to route flow to a local area where it poses no hazard to equipment or personnel. In low pressure, cold water applications, the valve discharge piping may consist of a

	<i>appear in numerous system drawings. Identify the relief path from the relief valves for all systems inside structures that contain 10 CFR 54.4(a)(1) components so that spatial interaction can be evaluated.</i>	<i>single piping fitting, or no discharge piping at all. As a matter of design, discharge piping from these relief valves does not incorporate isolation valves which might block the flow path and defeat the safety function of the valve. Relief valve piping inside Class I structures is in the scope of License Renewal.</i>
<b>2.3.3.29</b>	<b>JACKET COOLING SYSTEM</b>	
LRA-302-283-LR, SH01 & 02	<i>The drawing depicts a pipe line marked 300-1 (shown at D-9 on each drawing) as included in scope of license renewal under 10 CFR 54.4(a)(1). This pipe has an unidentified continuation arrow. Without further information on this interface, it is not possible to evaluate the interaction of the connected piping on the jacket coolant system.</i>	<i>The referenced line was incorrectly highlighted. The "300-1" refers to a piping line class break and does not depict a piping component.</i>
<b>2.3.3.32</b>	<b>DEMINERALIZED WATER SYSTEM</b>	
LRA-302-182-LR, SH01	<i>At F-8, the drawing identifies connected piping in the liquid waste disposal spent resin transfer system at the decant pump suction as included in scope of license renewal under 10 CFR 54.4(a)(2). The associated drawing, 302-681-LR, SH05 does not identify any piping in scope at the decant pump suction.</i>	<i>CR-3 has revised its methodology for spatial interaction scoping to narrowly permit exclusions only in areas where there are no safety related components, that are adequately protected and isolated from other areas of the plant, and are equipped with drain systems which are themselves in the scope of License Renewal. (See RAI 2.1-2 response in CR-3 letter to NRC 3F0909-04, dated September 18, 2009.) Based on these changes, the decant pump suction piping on 302-182-LR, SH01 and 302-681-LR, SH05 is in the scope of License Renewal.</i>
LRA-302-182-LR, SH01	<i>At C-4, the drawing identifies connected piping in the liquid waste disposal reactor coolant subsystem at the deborating demineralizers as included in scope of license renewal under 10 CFR 54.4(a)(2). The associated drawing, 302-681-LR, SH03 identifies this connection as the boundary to an area exclusion where spatial interaction concerns do not exist. Therefore, there is a conflict as to what the applicant is identifying as in scope and what is excluded.</i>	<i>CR-3 has revised its methodology for spatial interaction scoping to narrowly permit exclusions only in areas where there are no safety related components, that are adequately protected and isolated from other areas of the plant, and are equipped with drain systems which are themselves in the scope of License Renewal. (See RAI 2.1-2 response in CR-3 to NRC letter, 3F0909-04, dated September 18, 2009.) Based on these changes, connected piping in the liquid waste disposal reactor coolant subsystem at the deborating demineralizers is included in the scope of License Renewal.</i>
<b>2.3.3.38</b>	<b>INSTRUMENT AIR SYSTEM</b>	
LRA-302-271-LR, SH01	<i>The drawing depicts the backup air system for automatic dump valves (ADVs) as in scope of license renewal under 10 CFR 54.4(a)(2).</i>	<i>The Instrument Air System supply piping to the Main Steam System Atmospheric Dump Valves (ADVs), MSV-25 and MSV-26, is not depicted on additional CR-3</i>

	<p><i>Continuation arrows are depicted in the intermediate building to MSV-25 and MSV-26. However the various air piping to the ADVs is not depicted on any instrument air system drawing or on the main steam drawings. Without a more extensive discussion of the instrument air piping to MSV-25 and MSV-26, it is not possible to validate that all components associated with the backup air system have been included in scope and evaluated for inclusion in an aging management program (AMP).</i></p>	<p><i>flow diagrams, other than the depiction on 302-271-LR, SH01. LRA Section 2.3.3.38 for the Instrument Air System states, "The system also provides high pressure bottled air for backup operational capability of the Main Steam System Atmospheric Dump Valves to meet Station Blackout commitments." The instrument air piping components associated with both the backup air system and the normal air supply to MSV-25 and MSV-26 have been included in scope and evaluated for inclusion in an aging management program (AMP). These instrument air piping components include valves, piping, filter regulators, and tubing connecting to the valve operator and are included in LRA Tables 2.3.3-38 and 2.3.4-12 as "Piping, piping components, piping elements, and tanks."</i></p>
<p><i>LRA-302-271-LR, SH01</i></p>	<p><i>No connection is shown from the instrument air system to the backup air system. A connection through IAV-546 and IAV-548 was expected.</i></p>	<p><i>The Instrument Air System normal supply piping connection with the backup air system for the Main Steam System ADVs is in the scope of License Renewal and is not depicted on additional CR-3 flow diagrams, other than the depiction on 302-271-LR, SH01 (see above response).</i></p>
<p><i>LRA-302-271-LR, SH04</i></p>	<p><i>The drawing depicts an unlabeled drawing continuation mark as in scope of license renewal under 10 CFR 54.4(a)(2) at drawing location E-2. The CR-3 FSAR, Rev 31, drawing shows this connection to the condensate demineralizer system.</i></p> <p><i>This reference is not included with the license renewal drawings.</i></p>	<p><i>The unlabeled continuation at scoping drawing location E-2 is a connection to the Condensate Demineralizer System. FSAR Revision 31 identifies the connection drawing as 302-161, SH03 coming from 302-271, SH04. Flow diagram 302-161, SH03 was not submitted as a flow diagram aid with the LRA submittal since the scoping boundary ends at the first valve in the Condensate Demineralizer System. Instrument Air System supply piping up to the Condensate Demineralizer system is in the scope of License Renewal. These instrument air piping components are included in LRA Table 2.3.3-38 as "Piping, piping components, piping elements, and tanks."</i></p>
<p><i>LRA-302-271-LR, SH04</i></p>	<p><i>The drawing inconsistently depicts American Society of Mechanical Engineers Section III, Class 2 and Class 4 flags on either side of containment penetrations 111 and 112 at location C-9. The depicted labeling confuses the evaluation of the boundaries for 10 CFR 54.4(a)(1) and (a)(2) piping and piping components.</i></p>	<p><i>The Inservice Inspection (ISI) Code Class 2 and Class 4 flags at RB penetrations 111 and 112 identified at locations C-9 and B-9 of 302-271-LR, SH04 are incorrectly depicted. ISI Code Class 2 should be identified on the RB boundary side of the drawing code class symbol. All of the subject piping is in the scope of License Renewal.</i></p>

2.3.3.41	<b>MISCELLANEOUS DRAINS SYSTEM</b>	
LRA-302-114-LR, SH02	<p>The drawing depicts a pipe continuation to a drain as in scope of license renewal at drawing location H-4. It is not clear if this continuation depicts a pipe run or an opening to another drain sump. No boundary flag is depicted. It is not possible to completely evaluate piping that may be in scope of license renewal for spatial interaction without further discussion.</p>	<p>The CR-3 drawing convention for flow diagrams does not depict all drain piping. A plant piping drawing shows the discharge line from MDP-1 connecting to a 6 in. drain pipe located in the same area. All piping in the Miscellaneous Drains System located within the IB, where the MDSU-1 sump is located, is in the scope of License Renewal for spatial interactions.</p>
2.3.3.49	<b>NUCLEAR SERVICE AND DECAY HEAT SEA WATER SYSTEM</b>	
LRA-302-611-LR, SH01	<p>The line leaving valve RWV-111 shown at location F-6 is shown to be within the scope of license renewal. However, it is not continued on another CR-3 LRA drawing, nor is it terminated at another valve or structure.</p>	<p>RWV-111 is a local sample isolation valve for the Nuclear Service and Decay Heat Seawater System, located within the Seawater Room inside the Auxiliary Building (AB). The typical design for local sample points is a sample isolation valve with a length of connected tubing routed to a suitable location for collecting the sample. The sample line connected to RWV-111 is located inside the AB and is in the scope of License Renewal.</p>
LRA-302-611-LR, SH01	<p>The discharge lines from RWV-61 (at location E-3) and RWV-62 (at location E-4) are shown to be within the scope of license renewal. However, the lines from these two valves are not continued on another CR-3 LRA drawing, nor do they terminate at another valve or structure.</p>	<p>Thermal relief valves and heat exchanger/vessel overpressure protection installation at CR-3 incorporates discharge piping, as needed, to route flow to a local area where it poses no hazard to equipment or personnel. In low pressure, cold water applications, the valve discharge piping may consist of a single piping fitting, or no discharge piping at all. As a matter of design, discharge piping from these relief valves does not incorporate isolation valves which might block the flow path and defeat the safety function of the valve. Relief valve piping inside Class I structures is in the scope of License Renewal, as is the case with these DCHE heat exchanger relief valves and discharge piping.</p>
2.3.3.50	<b>STATION AIR SYSTEM</b>	
LRA-302-271-LR, SH09	<p>The drawing depicts connections to fire service valves (FSV-1145, FSV-1146, and FSV-1147) as in scope for license renewal. No connecting piping is depicted for a continued scoping and spatial interaction evaluation.</p>	<p>There are no additional supply piping connections identified on CR-3 flow diagrams for the Station Air System supply to FSV-1145, FSV-1146, and FSV-1147. The Station Air System supplies supervisory air for the Emergency Feedwater Pump Building's pre-action sprinkler systems. The subject Station Air System piping components are in scope and included in LRA Table 2.3.3-50 as "Piping, piping components, piping elements, and tanks."</p>

2.3.3.52	<b>STATION DRAINS SYSTEM</b>	
LRA-302-113-LR, SH02	The line coming into isolation valve SDV-133 at location G-7 is shown to be within the scope of license renewal. However, it is not continued on another CR-3 LRA drawing, nor is it terminated at another valve or structure.	The CR-3 drawing convention for flow diagrams does not depict all drain piping. All piping in the Station Drains System within the IB, including that depicted above the boundary flag on 302-113-LR, SH02, is in the scope of License Renewal.
LRA-302-163-LR, SH01	Instrument air supply to SDV-90 shown at location A-8 is shown to be within the scope of license renewal. However, the line into this valve is not continued on another CR-3 LRA drawing, nor is it terminated at another valve or structure.	The CR-3 drawing convention for flow diagrams does not depict all instrument air supply piping. The instrument air supply piping to SDV-90, located in the AB, is included in the scope of License Renewal.
2.3.3.60	<b>WASTE SAMPLING SYSTEM</b>	
LRA-302-693-LR, SH01	The air supply line to flow control, RM-A6-FC, at location G-5 is shown to be within the scope of license renewal. However, it is not continued on another CR-3 LRA drawing, nor is it terminated at another valve or structure.	The air supply piping for RM-A6-FC from the Instrument Air System to the radiation monitor flow control valve is not depicted on additional CR-3 flow diagrams. This Instrument Air System supply line, located inside the AB, is in scope and included in LRA Table 2.3.3-38 as "Piping, piping components, piping elements, and tanks."
2.3.4.1	<b>CONDENSER AIR REMOVAL SYSTEM</b>	
LRA-302-131-LR, SH01	At location G-3, the applicant shows a line that goes into valve ARV-164. The drawing indicates that this line is within the scope of AMR, but it does not indicate where the line originates from or to what the line connects.	The referenced line is a dilution air inlet for vacuum pump ARP-1A, and originates locally at the vacuum pump skid. This line is in the scope of License Renewal and is included in LRA Table 2.3.4-1 as "Piping, piping components, piping elements, and tanks."
2.3.4.4	<b>CONDENSATE SYSTEM</b>	
LRA-302-101-LR, SH01	Locations B-4 and B-9 show an exhaust line from the main feedwater pumps turbines (FWTB-1A at location B-4, FWTB-1B at location B-9) to an open area of the drawing. These exhaust lines are also labeled "By Foster Wheeler Corp." However, it is not clear if the FWTB exhaust to the atmosphere within the turbine building or to some other component or heat sink. Also, these two lines show no visible means of support or anchor.	Foster-Wheeler Corp supplied the FWTB-1A and 1B exhaust ducts which connect to the Main Condenser. The subject highlighted lines do not indicate components. Instead, the two referenced drawing lines indicate the scope of work to be completed by Foster Wheeler Corp and should not have been highlighted. CR-3 flow diagrams do not identify supports or anchors.
2.3.4.10	<b>MAIN FEEDWATER SYSTEM</b>	
LRA-302-081-LR SH02	Four FW system relief valves are shown at locations B-1 (FWV-263), B-2 (FWV-262), D-2 (FWV-16), and D-3 (FWV-17). The relief line from each of these valves is shown to be within scope of the license renewal. However, the lines from these four	The relief line from each of these four Main Feedwater System relief valves is not continued or identified on additional CR-3 flow diagrams. The subject Main Feedwater System piping components for these relief lines are located in the Turbine Building (TB), are in scope, and

	<i>valves are not continued on another CR-3 LRA drawing, nor do they terminate at another valve or structure.</i>	<i>are included in LRA Table 2.3.4-8 as "Piping, piping components, piping elements, and tanks."</i>
	<i>Two FW system relief valves are shown at locations D-7 (FWV-4) and D-9 (FWV-3). However, the relief line from each of these valves (FWV-3 &amp; -4) are not shown on the drawing. Also, the lines are not continued on another CR-3 LRA drawing, nor do they terminate at another valve or structure.</i>	<i>The relief line from each of these two Main Feedwater System relief valves is not continued or identified on additional CR-3 flow diagrams. The subject Main Feedwater System piping components for these relief lines are located in the TB, are in scope, and are included in LRA Table 2.3.4-8 as "Piping, piping components, piping elements, and tanks."</i>

**RAI 2.3-04 General Items**

Background: 10 CFR Section 54.21(a)(1) requires applicants to identify and list components subject to an AMR. The staff confirms inclusion of all components subject to an AMR by reviewing the components within the license renewal boundary.

Issue: During the scoping and screening review process, several components were found highlighted on CR-3 LRA drawings as being in scope for license renewal, but were not found on the associated tables for mechanical systems in the Scoping and Screening Results-Mechanical Systems section of the CR-3 LRA. Given below is a table that indicates the systems identified with these table inconsistencies.

License Renewal Application (LRA) Section/Drawing Number	Table Location / Issue
<b>2.3.3.22</b>	
<b>CONTROL COMPLEX CHILLED WATER SYSTEM</b>	
LRA-302-756-LR, SH01	The drawing depicts air eliminator and air purger components as included in scope of license renewal under 10 CFR 54.4(a)(1) at the inlet of chilled water pumps CHP-1A and CHP-1B (shown at locations D-5 and E-5 on the drawing). Additionally, a di-electric coupling is shown in scope at B-9 on the drawing in the makeup water supply line. The LRA uses the NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," Revision 1 definition for piping, piping components and piping elements. It is not clear that this definition covers these additional elements in this drawing. Air eliminator, air purger, and di-electric coupling components are not included on Table 2.3.3-22 or Table 3.3.2-22 with intended function

	M-1, pressure boundary.
LRA-302-756-LR, SH01	<p>The drawing depicts the heat exchangers for the post accident sampling system cooler as included in scope of license renewal under 10 CFR 54.4(a)(1). The post accident sampling system cooling coil components are not included on Table 2.3.3-22 or Table 3.3.2-22 with intended function M-1, pressure boundary, and the cooling coils are not included on Table 2.3.3-22 or Table 3.3.2-22 with intended function M-5, heat transfer.</p> <p>The cooling coil components and cooling coils of other air handling heat exchangers cooled by control complex chilled water are included in the AMR under the respective ventilation system. However, an AMR could not be identified for the post accident containment atmospheric sampling system post accident sampling system cooler.</p>
<b>2.3.3.23</b>	
<b>APPENDIX R CHILLED WATER SYSTEM</b>	
LRA-302-756-LR, SH01	<p>The drawing depicts the heat exchangers for the switchgear room air handling units (AHHE-10A and AHHE-10B) as included in scope of license renewal under 10 CFR 54.4(a)(1). These components are actually cooled by the appendix R chilled water system because of the blank flanges installed (F-4/5). The switchgear room cooling coil components are not included on Table 2.3.3-23 or Table 3.3.2-23 with intended function M-1, pressure boundary, and the cooling coils are not included on Table 2.3.3-23 or Table 3.3.2-23 with intended function M-5, heat transfer.</p> <p>The cooling coil components and cooling coils of other air handling heat exchangers cooled by appendix R chilled water are included in the AMR under the respective ventilation system. However, no AMR could be identified for the switchgear room heat exchangers under an associated ventilation system.</p>
<b>2.3.3.24</b>	
<b>INDUSTRIAL COOLING SYSTEM</b>	
LRA-302-762-LR, SH01	<p>The drawing depicts the cooling tower heat exchanger, leak rate test air cooler, reactor cavity cooling coils, and industrial cooler electric water heaters (CIHE-2A and CIHE-2B) as included in scope of license renewal under 10 CFR 54.4(a)(2).</p>

	<p>The cooling coil components are not included on Table 2.3.3-24 or Table 3.3.2-24 with intended function M-1, pressure boundary, and the cooling coils are not included on Table 2.3.3-24 or Table 3.3.2-24 with intended function M-5, heat transfer. No AMR could be identified for these heat exchangers under an associated system.</p>
	<p>The drawing depicts expansion joints, industrial cooler pump casings, and reactor cavity pump casings as included in scope of license renewal under 10 CFR 54.4(a)(2). These components are not included on Table 2.3.3-24 or Table 3.3.2-24 with intended function M-1, pressure boundary. Pump casings and expansion joints are listed separately on other system AMR tables such as the control complex chilled water system.</p>
LRA-302-762-LR, SH03	<p>The drawing highlights a heat exchanger (CIHE-10) in location C-7 of the drawing in scope for license renewal, but it is not included on Table 2.3.3-24 or Table 3.3.2-24 with intended function M05, heat transfer.</p>
<b>2.3.3.25</b>	
<b>CIRCULATING WATER SYSTEM</b>	
LRA-302-201-LR, SH01	<p>The drawing depicts manholes as included in scope of license renewal under 10 CFR 54.4(a)(2) (example shown at B-3 on the drawing). The applicant uses the NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," Revision 1 definition for piping, piping components and piping elements. It is not clear that this definition covers manholes. Manhole components are not included on Table 2.3.3-25 or Table 3.3.2-25 with intended function M-1, pressure boundary.</p>
<b>2.3.3.27</b>	
<b>DECAY HEAT CLOSED CYCLE COOLING SYSTEM</b>	
LRA-302-631-LR, SH01 & 02	<p>The drawing depicts the heat exchangers for the decay heat closed cycle cooling pump motor air handling units (AHHE-30A and AHHE-30B) as included in scope of license renewal under 10 CFR 54.4(a)(1). The cooling coil components are not included on Table 2.3.3-27 or Table 3.3.2-27 with intended function M-1, pressure boundary, and the cooling coils are not included on Table 2.3.3-27 or Table 3.3.2-27 with intended function M-5, heat transfer. No AMR could be</p>

	identified for the decay heat closed cycle cooling pump motor air handling unit heat exchangers under an associated ventilation system.
<b>2.3.3.28</b>	
<b>FUEL OIL SYSTEM</b>	
LRA-302-281-LR, SH01	The drawing depicts the sump pumps (SDP-9A and SDP-9B) and the dirty fuel drain tank as included in scope of license renewal under 10 CFR 54.4(a)(2) and (a)(1), respectively. Other system tanks are specifically identified as part of an AMR. These components are not included on Table 2.3.3-28 or Table 3.3.2-28 with intended function M-1, pressure boundary.
	The drawing depicts the vent cap, screen, and flame arrester for each emergency diesel generator (EDG) fuel storage tank as included in scope of license renewal under 10 CFR 54.4(a)(2). These components are not specifically included on Table 2.3.3-28 nor Table 3.3.2-28, and the components do not meet the CR-3 definition for piping, piping components and piping elements.
<b>2.3.3.29</b>	
<b>JACKET COOLING SYSTEM</b>	
LRA-302-283-LR, SH01 & 02;  LRA-302-284-LR, SH01 & 02;  LRA-302-777 LR, SH01	The drawing depicts diesel engine-driven pumps as included in scope of license renewal under 10 CFR 54.4(a)(1). These components are not included on Table 2.3.3-29 or Table 3.3.2-29 with intended function M-1, pressure boundary. The "CPM" standby coolant pump casings on EDG 1A and 1B are specifically identified in an AMP. Engine-driven and motor-driven pump casings are also depicted as in scope without a specific AMP on: <ul style="list-style-type: none"> <li>• CR-3 LRA drawing 302-285-LR, SH01 and SH02, EDG lube oil piping system schematic diagram</li> <li>• CR-3 LRA drawing 302-775-LR, SH01, EFP-3 lube oil piping system schematic diagram</li> </ul>
LRA-302-283-LR, SH01 & 02	The drawing depicts electric standby heaters as included in scope of license renewal under 10 CFR 54.4(a)(1). These components are included on Table 2.3.3-29 or Table 3.3.2-29 with intended function M-1, pressure boundary. However, there is no consideration of intended function M-5, heat transfer.

<p>LRA-302-284-LR, SH01&amp; 02;</p> <p>LRA-302-285-LR, SH01 &amp; 02</p>	<p>The drawing depicts the heat exchangers for the EDG gearbox oil cooler (DLHE-5 and DLHE-6) as included in scope of license renewal under 10 CFR 54.4(a)(1). The cooling coil components are not included on Table 2.3.3-29 or Table 3.3.2-29 with intended function M-1, pressure boundary, and the cooling coils are not included on Table 2.3.3-29 or Table 3.3.2-29 with intended function M-5, heat transfer. An AMP for the EDG gearbox oil cooler is not included under the lube oil system, either. AMP are specifically identified for the EDG lube oil cooler and the EFP-3 gearbox lube oil cooler.</p>
<p>LRA-302-284-LR, SH01 &amp; 02</p>	<p>The drawing depicts the air filter and turbo-charger for each EDG as included in scope of license renewal under 10 CFR 54.4(a)(1) (shown at location C-2 on each drawing). Neither component is specifically included on Table 2.3.3-29 nor Table 3.3.2-29 with intended function M-1, pressure boundary. The turbo-charger does not meet the CR-3 definition for piping, piping components and piping elements, and the air filter is not listed with intended function M-2, filtration.</p>
<p><b>2.3.3.30</b></p>	
<p><b>DIESEL GENERATOR LUBE OIL SYSTEM</b></p>	
<p>LRA-302-285-LR, SH01 &amp; 02;</p> <p>LRA-302-775-LR, SH01</p>	<p>The drawing depicts the EDG gearbox oil sump housing, the EDG and EFP-3 lube oil sump housing, and the EFP-3 speed increaser housing as included in scope of license renewal under 10 CFR 54.4(a)(1). These components are not included on Table 2.3.3-30 or Table 3.3.2-30 with intended function M-1, pressure boundary. Other system reservoirs are specifically identified.</p>
<p><b>2.3.3.42</b></p>	
<p><b>MAKE UP AND PURIFICATION SYSTEM</b></p>	
<p>LRA-302-661-LR, SH01 &amp; 02</p>	<p>The drawing depicts thermal expansion chamber with rupture seal disc assemblies (MURS-1 at location C-5 on SH01 and MURS-2 at location C-4 on SH02) as in scope of license renewal. These components are not included on Table 2.3.3-42 or Table 3.3.2-42 with intended function M-1, pressure boundary. These components do not appear to meet the CR-3 definition for piping, piping components and piping elements.</p>

LRA-302-661-LR, SH01	The drawing depicts a cabinet shown at location G-2 on the drawing as outside the scope of license renewal. It appears that this component should be included on Table 2.3.3-42 or Table 3.3.2-42 with intended function M-1, pressure boundary.
<b>2.3.3.50</b>	
<b>STATION AIR SYSTEM</b>	
LRA-302-271-LR, SH09	The drawing depicts station air dryers and filter regulators as in scope for license renewal. These components are not included on Table 2.3.3-50 or Table 3.3.2-50 with intended function M-1, pressure boundary. Similar air dryers in the instrument air system are specifically identified as part of an AMP.
<b>2.3.3.51</b>	
<b>SECONDARY SERVICES CLOSED COOLING WATER SYSTEM</b>	
LRA-302-221-LR, SH01	Secondary cycle primary sample cooling water pump, SCP-4, shown at location A-2, is not specifically included in Tables 2.3.3-51 or 3.3.2-51.
	Turbine lubricating oil coolers, TBHE-7A, TBHE-7B, shown at locations C-3 and D-3, respectively, are not specifically included in Tables 2.3.3-51 or 3.3.2-51.
	Feedwater pump turbine lubricating oil coolers, 3A and 3B, shown at locations F-4 and F-6, respectively, are not specifically included in Tables 2.3.3-51 or 3.3.2-51.
	Feedwater booster pump lubricating oil coolers, LOHE-6A and LOHE-6B, shown at locations G-2 and G-1, respectively, are not specifically included in Tables 2.3.3-51 or 3.3.2-51.
	Electro-hydraulic fluid coolers, EHHE-1A and EHHE-1B, shown at locations B-8 and B-9, respectively, are not specifically included in Tables 2.3.3-51 or 3.3.2-51.
	Sample chiller condenser, SSHE-1, shown at location E-3, is not specifically included in Tables 2.3.3-51 or 3.3.2-51.
LRA-302-221-LR, SH02	Generation hydrogen coolers, TBHE-4A through 4D, shown at locations E-4, E-5, E-6, and E-7, respectively, are not specifically included in Tables 2.3.3-51 or 3.3.2-51.
<b>2.3.3.52</b>	
<b>STATION DRAINS</b>	

<b>SYSTEM</b>	
LRA-302-115-LR, SH01	Filter regulator lubricator SA-144-FR shown at location G-6 is not specifically included in Tables 2.3.3-52 or 3.3.2-52.
LRA-302-115-LR, SH01	The diesel pump room floor shown at location H-4 and the diesel pump room wall shown at location G-4 do not identify which diesel they are associated with.
<b>2.3.3.53</b>	
<b>SPENT FUEL COOLING SYSTEM</b>	
LRA-302-115-LR, SH01	Spent fuel pool coolant filters 3A (SFFL-1A at location D-5) and 3B (SFFL-1B at location D-6) are shown to be included in the scope of license renewal. Filter regulator lubricator SA-144-FR shown at location G-6 is not specifically included in Tables 2.3.3-53 or 3.3.2-53.
<b>2.3.3.54</b>	
<b>NUCLEAR SERVICES CLOSED CYCLE COOLING SYSTEM</b>	
LRA-302-601-LR, SH03	Nuclear service closed cycle chemical feed pump and feed tank, SWT-2, at location D-10 is shown to be included in the scope of license renewal. However, the tank is not specifically included in Tables 2.3.3-54 or 3.3.2-54.
	SW demineralizer, SWDM-1, at location E-5 is shown to be included in the scope of license renewal. However, the demineralizer is not specifically included in Tables 2.3.3-54 or 3.3.2-54.
<b>2.3.4.1</b>	
<b>CONDENSER AIR REMOVAL SYSTEM</b>	
LRA-302-131-LR SH01	Tables 2.3.4-1 and 3.4.2-1 of the CR-3 LRA list the condenser vacuum pump heat exchanger and heat transfer surfaces as being included in the AMR. Specific components ART-2 and ART-3, shown at locations G-5 and G-7, are indicated to be within the scope of an AMR. However, components ART-2 and ART-3 are not listed in CR-3 LRA Tables 2.3.4-1 or 3.4.2-1.
LRA-302-131-LR SH01	At location C-4, component ARWT-1 is indicated as being in scope of an AMR. However, ARWT-1 is not included in CR-3 LRA Tables 2.3.4-1 or 3.4.2-1, nor is the component specifically identified (i.e., type, function, etc.).

<b>2.3.4.2</b>	
<b>AUXILIARY STEAM SYSTEM</b>	
LRA-302-114-LR, SH03	The drawing depicts steam traps as in scope of license renewal in numerous drawing locations. These components are not included on Table 2.3.4-2 or Table 3.4.2-2 with intended function M-1, pressure boundary. The applicant should identify steam traps in all systems and verify that they are included in an AMP.

**Request:** Confirm that the above passive, long-lived components are subject to an AMR, and indicate in which component group they are included. If they are not subject to an AMR, justify their exclusion.

**Response:**

*A specific evaluation has been provided for each of the items in the table.*

<b>LRA Section/ Drawing Number</b>	<b>Table Location / Issue</b>	<b>Resolution</b>
<b>2.3.3.22</b>	<b>CONTROL COMPLEX CHILLED WATER SYSTEM</b>	
LRA-302-756-LR, SH01	<i>The drawing depicts air eliminator and air purger components as included in scope of license renewal under 10 CFR 54.4(a)(1) at the inlet of chilled water pumps CHP-1A and CHP-1B (shown at locations D-5 and E-5 on the drawing). Additionally, a di-electric coupling is shown in scope at B-9 on the drawing in the makeup water supply line. The applicant uses the NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," Revision 1 definition for piping, piping components and piping elements. It is not clear that this definition covers these additional elements in this drawing. Air eliminator, air purger, and di-electric coupling components are not included on Table 2.3.3-22 or Table 3.3.2-22 with intended function M-1, pressure boundary.</i>	<i>Air Purger, CHAP-1, is an inline piping component with an upper semi-spherical region that provides a high point for air collection and removal. Air Eliminator, CHAE-1, is a simple float operated device that receives air from the air purger and expels it when sufficient volume has been collected. Both the Purger and Eliminator are piping system components with only the M-1, Pressure-Boundary, intended function, and are included in Table 2.3.3-22 as "Piping, piping components, and piping elements." Di-electric couplings, much like corrosion resistant coatings, are a design feature intended to prevent corrosion. They do not perform an intended function and are not in the scope of License Renewal.</i>
LRA-302-756-LR, SH01	<i>The drawing depicts the heat exchangers for the post accident sampling system cooler as included in scope of license renewal under 10 CFR 54.4(a)(1). The post accident sampling system cooling coil components are not included on Table 2.3.3-22 or Table 3.3.2-22 with intended function M-1, pressure boundary, and the cooling coils are not included on Table 2.3.3-22</i>	<i>The Post Accident Sampling System SW Cooler, SWHE-2, is a plate frame heat exchanger, and has no shell or tubes, per se. This heat exchanger is cooled by the Nuclear Services Closed Cycle Cooling (NSCCC) Water System, and is included in Table 2.3.3-54 as "PASS NSCCC Plate Heat Exchanger" (M-1 function), and "PASS NSCCC Plate Heat</i>

	<p>or Table 3.3.2-22 with intended function M-5, heat transfer. The cooling coil components and cooling coils of other air handling heat exchangers cooled by control complex chilled water are included in the AMR under the respective ventilation system. However, an AMR could not be identified for the post accident containment atmospheric sampling system post accident sampling system cooler.</p>	<p>Exchanger Plates" (M-5 function).</p>
<p><b>2.3.3.23</b></p>	<p align="center"><b>APPENDIX R CHILLED WATER SYSTEM</b></p>	
<p>LRA-302-756-LR, SH01</p>	<p>The drawing depicts the heat exchangers for the switchgear room air handling units (AHHE-10A and AHHE-10B) as included in scope of license renewal under 10 CFR 54.4(a)(1). These components are actually cooled by the appendix R chilled water system because of the blank flanges installed (F-4/5). The switchgear room cooling coil components are not included on Table 2.3.3-23 or Table 3.3.2-23 with intended function M-1, pressure boundary, and the cooling coils are not included on Table 2.3.3-23 or Table 3.3.2-23 with intended function M-5, heat transfer.</p> <p>The cooling coil components and cooling coils of other air handling heat exchangers cooled by appendix R chilled water are included in the AMR under the respective ventilation system. However, no AMR could be identified for the switchgear room heat exchangers under an associated ventilation system.</p>	<p>Cooling the Turbine Building Switchgear is not a License Renewal intended function. These cooling coils are part of the Control Complex Chilled Water System and not the Appendix R Chilled Water System and are included in Table 2.3.3-22 as "Piping, piping components, and piping elements." These components can be further identified by the AMR lines for copper and copper alloys in Table 3.3.2-22 on page 3.3-196.</p>
<p><b>2.3.3.24</b></p>	<p align="center"><b>INDUSTRIAL COOLING SYSTEM</b></p>	
<p>LRA-302-762-LR, SH01</p>	<p>The drawing depicts the cooling tower heat exchanger, leak rate test air cooler, reactor cavity cooling coils, and industrial cooler electric water heaters (CIHE-2A and CIHE-2B) as included in scope of license renewal under 10 CFR 54.4(a)(2). The cooling coil components are not included on Table 2.3.3-24 or Table 3.3.2-24 with intended function M-1, pressure boundary, and the cooling coils are not included on Table 2.3.3-24 or Table 3.3.2-24 with intended function M-5, heat transfer. No AMR could be identified for these heat exchangers under an associated system.</p>	<p>The Industrial Cooling System Cooling Towers (shown on plant drawing 302-762, Sheet 2) are not within the scope of License Renewal. The Leak Rate Test Air Cooler is evaluated as part of the Leak Rate Test System and is depicted on drawing 302-722-LR, Sheet 1. This cooler is within the scope of License Renewal for spatial interaction concerns only and is included in Table 2.3.3-40 as "Piping, piping components, and piping elements" with only an M-1 Pressure-Boundary intended function. The Reactor Building Cavity Cooling Coils are not</p>

		<p>required to function following a Loss of Coolant Accident or Main Steam Line Break, but are required to maintain their pressure boundary during an earthquake to assure containment isolation. The coils are included in Table 2.3.3-24 as "Containment isolation piping and components" with an M-1 Pressure-Boundary intended function. The Industrial Cooler Electric Water Heaters are within the scope of License Renewal for spatial interaction concerns only. The heaters are included in Table 2.3.3-24 as "Piping, piping components, piping elements, and tanks" with only an M-1 Pressure-Boundary intended function.</p>
LRA-302-762-LR, SH01	<p>The drawing depicts expansion joints, industrial cooler pump casings, and reactor cavity pump casings as included in scope of license renewal under 10 CFR 54.4(a)(2). These components are not included on Table 2.3.3-24 or Table 3.3.2-24 with intended function M-1, pressure boundary. Pump casings and expansion joints are listed separately on other system AMR tables such as the control complex chilled water system.</p>	<p>The industrial cooler pump casings, reactor cavity pump casings, and expansion joints depicted as in scope are included in Table 2.3.3-24 as "Piping, piping components, piping elements, and tanks." The expansion joints are further identified by the "Elastomers" material designation on page 3.3-209 of Table 3.3.2-24.</p>
LRA-302-762-LR, SH03	<p>The drawing highlights a heat exchanger (CIHE-10) in location C-7 of the drawing in scope for license renewal, but it is not included on Table 2.3.3-24 or Table 3.3.2-24 with intended function M05, heat transfer.</p>	<p>The Plate Heat Exchanger, CIHE-10, is within the scope of License Renewal for spatial interaction concerns only. The heat exchanger is included in Table 2.3.3-24 as "Piping, piping components, piping elements, and tanks" with only an M-1 Pressure-Boundary intended function.</p>
<b>2.3.3.25</b>	<b>CIRCULATING WATER SYSTEM</b>	
LRA-302-201-LR, SH01	<p>The drawing depicts manholes as included in scope of license renewal under 10 CFR 54.4(a)(2) (example shown at B-3 on the drawing). The applicant uses the NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," Revision 1 definition for piping, piping components and piping elements. It is not clear that this definition covers manholes. Manhole components are not included on Table 2.3.3-25 or Table 3.3.2-25 with intended function M-1, pressure boundary.</p>	<p>There are two types of manholes depicted on drawing 302-201-LR, Sheet 1. There are those at coordinates A-3, A-4, A-6, and A-7 that depict flanged connections to the Circulating Water System piping. These flanges and their associated bolting are included in Table 2.3.3-25 as "Piping, piping components, piping elements, and tanks." The other manholes at coordinates B-3, B-4, B-6, and B-7 provide access to a piping tunnel housing Circulating Water System piping. These manholes are not part of the Circulating Water System, but are civil features addressed in Section 2.4.2.7 of the</p>

		CR-3 LRA.										
<b>2.3.3.27</b>	<b>DECAY HEAT CLOSED CYCLE COOLING SYSTEM</b>											
LRA-302-631-LR, SH01 & 02	The drawing depicts the heat exchangers for the decay heat closed cycle cooling pump motor air handling units (AHHE-30A and AHHE-30B) as included in scope of license renewal under 10 CFR 54.4(a)(1). The cooling coil components are not included on Table 2.3.3-27 or Table 3.3.2-27 with intended function M-1, pressure boundary, and the cooling coils are not included on Table 2.3.3-27 or Table 3.3.2-27 with intended function M-5, heat transfer. No AMR could be identified for the decay heat closed cycle cooling pump motor air handling unit heat exchangers under an associated ventilation system.	The heat exchangers are evaluated in the Decay Heat Closed Cycle Pump Cooling System and not the Decay Heat Closed Cycle Cooling System, and are depicted on drawing 302-751, Sheet 1 (Coordinates G-7 and H-7). The heat exchangers are included in Table 2.3.3-7 as "Decay Heat Closed Cycle Pump Air Supply Cooling Coil Tubes" with an M-5 Heat Transfer intended function and "Decay Heat Closed Cycle Pump Air Supply Cooling Coil Components" with an M-1 Pressure-Boundary intended function.										
<b>2.3.3.28</b>	<b>FUEL OIL SYSTEM</b>											
LRA-302-281-LR, SH01	The drawing depicts the sump pumps (SDP-9A and SDP-9B) and the dirty fuel drain tank as included in scope of license renewal under 10 CFR 54.4(a)(2) and (a)(1), respectively. Other system tanks are specifically identified as part of an AMR. These components are not included on Table 2.3.3-28 or Table 3.3.2-28 with intended function M-1, pressure boundary.	The referenced components are included in Table 2.3.3-28 as "Piping, piping components, piping elements, and tanks."										
LRA-302-281-LR, SH01	The drawing depicts the vent cap, screen, and flame arrester for each emergency diesel generator (EDG) fuel storage tank as included in scope of license renewal under 10 CFR 54.4(a)(2). These components are not specifically included on Table 2.3.3-28 nor Table 3.3.2-28, and the components do not meet the CR-3 definition for piping, piping components and piping elements.	The vent cap, screen, and flame arrester are included in Table 2.3.3-28 as "Piping, piping components, piping elements, and tanks."										
<b>2.3.3.29</b>	<b>JACKET COOLING SYSTEM</b>											
LRA-302-283-LR, SH01 & 02;  LRA-302-284-LR, SH01 & 02;  LRA-302-777 LR, SH01	The drawing depicts diesel engine-driven pumps as included in scope of license renewal under 10 CFR 54.4(a)(1). These components are not included on Table 2.3.3-29 or Table 3.3.2-29 with intended function M-1, pressure boundary. The "CPM" standby coolant pump casings on EDG 1A and 1B are specifically identified in an AMP. Engine-driven and motor-driven pump casings are also depicted as in scope without a specific AMP on:	The pumps, depicted on drawings 302-285-LR, Sheets 1 and 2, and 302-775-LR, Sheet 1, are associated with the Diesel Generator Lube Oil System. These pumps are included in Table 2.3.3-30 as "Piping, piping components, and piping elements."  <table border="0"> <tr> <td>Tag</td> <td>Drawing</td> </tr> <tr> <td>DLP-1</td> <td>302-285-LR, Sheet 1</td> </tr> <tr> <td>DLP-2</td> <td>302-285-LR, Sheet 2</td> </tr> <tr> <td>DLP-3</td> <td>302-285-LR, Sheet 1</td> </tr> <tr> <td>DLP-4</td> <td>302-285-LR, Sheet 2</td> </tr> </table>	Tag	Drawing	DLP-1	302-285-LR, Sheet 1	DLP-2	302-285-LR, Sheet 2	DLP-3	302-285-LR, Sheet 1	DLP-4	302-285-LR, Sheet 2
Tag	Drawing											
DLP-1	302-285-LR, Sheet 1											
DLP-2	302-285-LR, Sheet 2											
DLP-3	302-285-LR, Sheet 1											
DLP-4	302-285-LR, Sheet 2											

	<ul style="list-style-type: none"> <li>• CR-3 LRA drawing 302-285-LR, SH01 and SH02, EDG lube oil piping system schematic diagram</li> <li>• CR-3 LRA drawing 302-775-LR, SH01, EFP-3 lube oil piping system schematic diagram</li> </ul>	<p>DLP-5 302-285-LR, Sheet 1  DLP-6 302-285-LR, Sheet 2  DLP-7 302-285-LR, Sheet 1  DLP-8 302-285-LR, Sheet 2  DLP-9 302-285-LR, Sheet 1  DLP-10 302-285-LR, Sheet 2  DLP-11 302-775-LR, Sheet 1  DLP-12 302-775-LR, Sheet 1  DLP-13 302-775-LR, Sheet 1  DLP-14 302-775-LR, Sheet 1  DLP-15 302-775-LR, Sheet 1  DLP-16 302-775-LR, Sheet 1  DLP-17 302-775-LR, Sheet 1  DLP-18 302-775-LR, Sheet 1</p>
<p>LRA-302-283-LR, SH01 &amp; 02</p>	<p>The drawing depicts electric standby heaters as included in scope of license renewal under 10 CFR 54.4(a)(1). These components are included on Table 2.3.3-29 or Table 3.3.2-29 with intended function M-1, pressure boundary. However, there is no consideration of intended function M-5, heat transfer.</p>	<p>DJHE-1 and DJHE-2 consist of tanks with separate electric heaters. The electric heaters are used to transfer heat to the fluid. Electrical/I&amp;C component/commodity groups are evaluated in Section 2.5 of the LRA.</p>
<p>LRA-302-284-LR, SH01 &amp; 02;  LRA-302-285-LR, SH01 &amp; 02</p>	<p>The drawing depicts the heat exchangers for the EDG gearbox oil cooler (DLHE-5 and DLHE-6) as included in scope of license renewal under 10 CFR 54.4(a)(1). The cooling coil components are not included on Table 2.3.3-29 or Table 3.3.2-29 with intended function M-1, pressure boundary, and the cooling coils are not included on Table 2.3.3-29 or Table 3.3.2-29 with intended function M-5, heat transfer. An AMP for the EDG gearbox oil cooler is not included under the lube oil system, either. AMP are specifically identified for the EDG lube oil cooler and the EFP-3 gearbox lube oil cooler.</p>	<p>The EDG Gearbox Oil Coolers depicted on 302-285-LR, Sheets 1 and 2, (DLHE-5 and DLHE-6, respectively) are included in Table 2.3.3-30 as "EDG Lube Oil Cooler Components" and "EDG Lube Oil Cooler Tubes" that are part of the Diesel Generator Lube Oil System. These commodities also include DLHE-1A, 1B, 2A, and 2B (EDG Lube Oil Coolers shown on 302-285-LR, Sheets 1 and 2, respectively).</p>
<p>LRA-302-284-LR, SH01 &amp; 02</p>	<p>The drawing depicts the air filter and turbo-charger for each EDG as included in scope of license renewal under 10 CFR 54.4(a)(1) (shown at location C-2 on each drawing). Neither component is specifically included on Table 2.3.3-29 nor Table 3.3.2-29 with intended function M-1, pressure boundary. The turbo-charger does not meet the CR-3 definition for piping, piping components and piping elements, and the air filter is not listed with intended function M-2, filtration.</p>	<p>The air filters (AHFL-22A and AHFL-22B) are shown on drawings 302-284-LR, Sheets 1 and 2, respectively. These filters are evaluated as part of the Emergency Diesel Generator Air Handling System in Section 2.3.3.12 of the LRA. These filters are included in Table 2.3.3-12 as "EDG Air Handling Filter Housings." The filter media are screened as replaced. As stated on page 2.1-25 of the LRA: "Commodity group components that are replaced based on qualified life or specified time period (i.e., short-lived components) are not subject to AMR."</p>

		<i>The turbochargers do not require AMR since they are part of a complex assembly and screened as active. A discussion of complex assemblies is provided in the LRA on page 2.1-20.</i>
<b>2.3.3.30</b>	<b>DIESEL GENERATOR LUBE OIL SYSTEM</b>	
<i>LRA-302-285-LR, SH01 &amp; 02;  LRA-302-775-LR, SH01</i>	<i>The drawing depicts the EDG gearbox oil sump housing, the EDG and EFP-3 lube oil sump housing, and the EFP-3 speed increaser housing as included in scope of license renewal under 10 CFR 54.4(a)(1). These components are not included on Table 2.3.3-30 or Table 3.3.2-30 with intended function M-1, pressure boundary. Other system reservoirs are specifically identified.</i>	<i>The sumps shown on drawings 302-285-LR, Sheets 1 and 2, are part of the diesel engine. The sumps do not require AMR since they are part of a complex assembly and screened as active. A discussion of complex assemblies is provided in the LRA on page 2.1-20. The speed increaser housing shown on 302-775-LR, Sheet 1 has been evaluated in the same manner.</i>
<b>2.3.3.42</b>	<b>MAKE UP AND PURIFICATION SYSTEM</b>	
<i>LRA-302-661-LR, SH01 &amp; 02</i>	<i>The drawing depicts thermal expansion chamber with rupture seal disc assemblies (MURS-1 at location C-5 on SH01 and MURS-2 at location C-4 on SH02) as in scope of license renewal. These components are not included on Table 2.3.3-42 or Table 3.3.2-42 with intended function M-1, pressure boundary. These components do not appear to meet the CR-3 definition for piping, piping components and piping elements.</i>	<i>The Rupture Disk Assemblies (expansion chamber and flange), MURS-1 and MURS-2 are included in Table 2.3.3-42 as "Piping, piping components, piping elements, and tanks."</i>
<i>LRA-302-661-LR, SH01</i>	<i>The drawing depicts a cabinet shown at location G-2 on the drawing as outside the scope of license renewal. It appears that this component should be included on Table 2.3.3-42 or Table 3.3.2-42 with intended function M-1, pressure boundary.</i>	<i>The component designated as "LC" at coordinate G-2 on drawing 302-661-LR, Sheet 1 is a "local container." It is a portable container used to collect fluid when draining liquid radiation monitor RM-L1.</i>
<b>2.3.3.50</b>	<b>STATION AIR SYSTEM</b>	
<i>LRA-302-271-LR, SH09</i>	<i>The drawing depicts station air dryers and filter regulators as in scope for license renewal. These components are not included on Table 2.3.3-50 or Table 3.3.2-50 with intended function M-1, pressure boundary. Similar air dryers in the instrument air system are specifically identified as part of an AMP.</i>	<i>The air dryers (SADR-4, -5, and -6) are within the scope of License Renewal for spatial interaction concerns only. The dryers are included in Table 2.3.3-50 as "Piping, piping components, piping elements, and tanks." The filter regulators (SA-134-FR through SA-136-FR and SA-141-FR through SA-144-FR) are considered minor components that are within the scope of License Renewal for spatial interaction concerns only. The filter regulators are included in Table 2.3.3-50 as "Piping, piping components, piping elements, and tanks."</i>

2.3.3.51	<b>SECONDARY SERVICES CLOSED COOLING WATER SYSTEM</b>	
LRA-302-221-LR, SH01	Secondary cycle primary sample cooling water pump, SCP-4, shown at location A-2, is not specifically included in Tables 2.3.3-51 or 3.3.2-51.	The Secondary Cycle Primary Sample Cooling Water Pump, SCP-4, is included in Table 2.3.3-51 as "Piping, piping components, piping elements, and tanks."
LRA-302-221-LR, SH01	Turbine lubricating oil coolers, TBHE-7A, TBHE-7B, shown at locations C-3 and D-3, respectively, are not specifically included in Tables 2.3.3-51 or 3.3.2-51.	The Turbine Lubricating Oil Coolers, TBHE-7A/7B, are not credited with a heat transfer intended function and are included in Table 2.3.3-51 as "Piping, piping components, piping elements, and tanks."
LRA-302-221-LR, SH01	Feedwater pump turbine lubricating oil coolers, 3A and 3B, shown at locations F-4 and F-6, respectively, are not specifically included in Tables 2.3.3-51 or 3.3.2-51.	These Main Feedwater Turbine Lube Oil Coolers, LOHE-2/3/4/5, are evaluated in the Main Feedwater Turbine Lube Oil System. They are included in Table 2.3.4-11 as "Main Feedwater Pump Turbine and Booster Pump Lube Oil Cooler Components" and "Main Feedwater Pump Turbine and Booster Pump Lube Oil Cooler Tubes" with the M-1 Pressure-Boundary and M-5 Heat Transfer intended functions, respectively.
LRA-302-221-LR, SH01	Feedwater booster pump lubricating oil coolers, LOHE-6A and LOHE-6B, shown at locations G-2 and G-1, respectively, are not specifically included in Tables 2.3.3-51 or 3.3.2-51.	These components are evaluated in the Main Feedwater Turbine Lube Oil System. They are included in Table 2.3.4-11 as "Main Feedwater Pump Turbine and Booster Pump Lube Oil Cooler Components" and "Main Feedwater Pump Turbine and Booster Pump Lube Oil Cooler Tubes" with the M-1 Pressure-Boundary and M-5 Heat Transfer intended functions, respectively.
LRA-302-221-LR, SH01	Electro-hydraulic fluid coolers, EHHE-1A and EHHE-1B, shown at locations B-8 and B-9, respectively, are not specifically included in Tables 2.3.3-51 or 3.3.2-51.	The Electro-Hydraulic Fluid Coolers, EHHE-1A/1B, are not credited with a heat transfer intended function and are included in Table 2.3.3-51 as "Piping, piping components, piping elements, and tanks."
LRA-302-221-LR, SH01	Sample chiller condenser, SSHE-1, shown at location E-3, is not specifically included in Tables 2.3.3-51 or 3.3.2-51.	The Sample Chiller Condenser, SSHE-1, is not credited with a heat transfer intended function and is included in Table 2.3.3-51 as "Piping, piping components, piping elements, and tanks."
LRA-302-221-LR, SH02	Generation hydrogen coolers, TBHE-4A through 4D, shown at locations E-4, E-5, E-6, and E-7, respectively, are not specifically included in Tables 2.3.3-51 or 3.3.2-51.	The Turbine Generator Hydrogen Coolers, TBHE-4A/4B/4C/4D, are not credited with a heat transfer intended function and are included in Table 2.3.3-51 as "Piping, piping components, piping elements, and tanks."

2.3.3.52	<b>STATION DRAINS SYSTEM</b>	
LRA-302-115-LR, SH01	Filter regulator lubricator SA-144-FR shown at location G-6 is not specifically included in Tables 2.3.3-52 or 3.3.2-52.	The filter regulator, SA-144-FR, is considered a minor component that is within the scope of License Renewal for spatial interaction concerns only. The filter regulator is included in Table 2.3.3-50 as "Piping, piping components, piping elements, and tanks."
LRA-302-115-LR, SH01	The diesel pump room floor shown at location H-4 and the diesel pump room wall shown at location G-4 do not identify which diesel they are associated with.	EFPB Sump Pump, SDP-12, is located in the Emergency Feedwater Pump Building structure which houses Emergency Feedwater Pump 3.
2.3.3.53	<b>SPENT FUEL COOLING SYSTEM</b>	
LRA-302-115-LR, SH01	Spent fuel pool coolant filters 3A (SFFL-1A at location D-5) and 3B (SFFL-1B at location D-6) are shown to be included in the scope of license renewal. Filter regulator lubricator SA-144-FR shown at location G-6 is not specifically included in Tables 2.3.3-53 or 3.3.2-53.	The Spent Fuel Coolant Filters, SFFL-1A/1B, are shown on drawing 302-621-LR, Sheet 2. Their filter media have been screened as replaced. The filter housings are included in Table 2.3.3-53 as "Piping, piping components, and piping elements."  The filter regulator, SA-144-FR, is considered a minor component that is within the scope of License Renewal for spatial interaction concerns only. The filter regulator is included in Table 2.3.3-50 as "Piping, piping components, piping elements, and tanks."
2.3.3.54	<b>NUCLEAR SERVICES CLOSED CYCLE COOLING SYSTEM</b>	
LRA-302-601-LR, SH03	Nuclear service closed cycle chemical feed pump and feed tank, SWT-2, at location D-10 is shown to be included in the scope of license renewal. However, the tank is not specifically included in Tables 2.3.3-54 or 3.3.2-54.	The Nuclear Service Closed Cycle Chemical Feed Tank, SWT-2, is included in Table 2.3.3-54 as "Piping, piping components, piping elements, and tanks."
LRA-302-601-LR, SH03	SW demineralizer, SWDM-1, at location E-5 is shown to be included in the scope of license renewal. However, the demineralizer is not specifically included in Tables 2.3.3-54 or 3.3.2-54.	The Nuclear Service Closed Cycle Cooling Demineralizer, SWDM-1, is included in Table 2.3.3-54 as "Piping, piping components, piping elements, and tanks."
2.3.4.1	<b>CONDENSER AIR REMOVAL SYSTEM</b>	
LRA-302-131-LR SH01	Tables 2.3.4-1 and 3.4.2-1 of the CR-3 LRA list the condenser vacuum pump heat exchanger and heat transfer surfaces as being included in the AMR. Specific components ART-2 and ART-3, shown at locations G-5 and G-7, are indicated to be within the scope of an AMR. However, components ART-2 and ART-3 are not listed in CR-3 LRA Tables 2.3.4-1 or 3.4.2-1.	The Air Removal Tanks, ART-2/3, are included in LRA Table 2.3.4-1 as "Piping, piping components, piping elements, and tanks."

LRA-302-131-LR SH01	At location C-4, component ARWT-1 is indicated as being in scope of an AMR. However, ARWT-1 is not included in CR-3 LRA Tables 2.3.4-1 or 3.4.2-1, nor is the component specifically identified (i.e., type, function, etc.).	The RM-A12 Water Trap, ARWT-1, is included in LRA Table 2.3.4-1 as "Piping, piping components, piping elements, and tanks."
<b>2.3.4.2</b>	<b>AUXILIARY STEAM SYSTEM</b>	
LRA-302-114-LR, SH03	The drawing depicts steam traps as in scope of license renewal in numerous drawing locations. These components are not included on Table 2.3.4-2 or Table 3.4.2-2 with intended function M-1, pressure boundary. The applicant should identify steam traps in all systems and verify that they are included in an AMP.	The Main Steam System steam traps are within the scope of License Renewal and are included in Table 2.3.4-12 as "Piping, piping components, piping elements, and tanks." The Auxiliary Steam System steam traps are within the scope of License Renewal and are included in Table 2.3.4-2 as "Piping, piping components, piping elements, and tanks." See Tables 3.4.2-12 and 3.4.2-2, respectively, for the aging management review results.

**RAI 2.3-05 General Items**

Background: 10 CFR Section 54.21 (a)(1) requires applicants to identify and list components subject to an AMR. The staff confirms inclusion of all components subject to an AMR by reviewing the components within the license renewal boundary.

Issue: During the scoping and screening review process, several structures were found on the CR-3 LRA drawings that were not included within the scope of license renewal. These structures were sumps, waste collectors, canals, pits, etc. In the table below it is indicated which systems are associated with these structures.

License Renewal Application (LRA) Section / Drawing Number	Sump Location / Issue
<b>2.3.3.34</b>	
<b>FLOOR DRAINS SYSTEM</b>	
LRA-302-683-LR, SH01	Two auxiliary building sumps, WDP-4A and WDP-4B, are shown at location H-4 on the drawing.
LRA-302-683-LR, SH02	Eight sumps are shown on the drawing: (a) reactor building sumps WDP-2A and WDP-2B (location F-3), (b) tendon access gallery sumps SDP-3A and SDP-3B (location H-4), (c) nuclear service area sumps SDP-2A and SDP-2B (location F-6), and (d) decay heat pit sumps WDP-3A and WDP-3B (location H-7).

<b>2.3.3.49</b>	
<b>NUCLEAR SERVICE AND DECAY HEAT SEA WATER SYSTEM</b>	
LRA-302-611-LR, SH02	Two nuclear service cooler area sumps are shown on the drawing: 3A SDP-2A at location D-1 and 3B SDP-2B at location E-1.
<b>2.3.3.52</b>	
<b>STATION DRAINS SYSTEM</b>	
LRA-302-115-LR, SH01	A sump associated with the air operated sump pump, SDP-12, is shown at location H-5 on the drawing.
LRA-302-281-LR, SH01	A sump, SDP-9B, associated with the EDG fuel transfer pumps, 3B (AC motor driven) and 3D (DC motor driven) is shown at location F-6 on the drawing.
LRA-302-281-LR, SH01	The drawing indicates at location F-3 an unidentified structure that is assumed to be a sump associated with the EDG fuel transfer pumps 3A (AC motor driven) and 3C (DC motor driven).
<b>2.3.3.53</b>	
<b>SPENT FUEL COOLING SYSTEM</b>	
LRA-302-621-LR, SH01	The drawing shows two structures at location B-1, the incore instrument pit and the fuel transfer canal, that are not included in the scope of license renewal.

**Request:** Provide justification of the exclusion of the structures identified above from the scope of license renewal and any SSCs inside the sumps or structures.

**Response:**

*As reflected by the response comments for each item listed in the table below, the sumps, pits, and canals in question are located within the following structures: Reactor Building (RB), Auxiliary Building (AB), Intermediate Building (IB), Diesel Generator Building, and Emergency Feedwater Pump Building (EFPB). These structures are within the scope of License Renewal.*

*Sumps, pits, and canals are formed by concrete in each building. As such, the sumps, pits, and canals are included in the "Concrete - Above Grade" commodity listed in LRA Section 2.4, Tables 2.4.1-1, 2.4.2-1, 2.4.2-9, 2.4.2-10 and 2.4.2-13 for the applicable structures. The liner plate for the incore instrument pit and the fuel transfer canal in the RB are included with the "Steel Components: Fuel Pool Liner" Component/Commodity group in LRA Table 2.4.1-1. Sump liners are included in the "Platforms, Pipe Whip Restraints, Jet Impingement Shields, Masonry Wall Supports, and Other Miscellaneous Structures Commodity," listed in LRA Tables 2.4.1-1 and 2.4.2-1.*

CR-3 has revised its methodology for spatial interaction scoping to narrowly permit exclusions only in areas where there are not safety related components, that are adequately protected and isolated from other areas of the plant, and are equipped with drain systems which are themselves in the scope of License Renewal. (See the response to RAI 2.1-2 in CR-3 to NRC letter, 3F0909-04, "Crystal River Unit 3 – Response to Requests for Additional Information for the Review of the Crystal River Unit 3 Nuclear Generating Plant, License Renewal Application (TAC NO. ME0274)," dated September 18, 2009 (ML092650272)). Based on this, all drain system piping and associated components located in the RB, AB, IB, Diesel Generator Building and EFPB have been included in the scope of License Renewal.

<b>LRA Section / Drawing Number</b>	<b>Sump Location / Issue</b>	<b>Response Comments</b>
<b>2.3.3.34</b>	<b>FLOOR DRAINS SYSTEM</b>	
LRA-302-683-LR, SH01	Two auxiliary building sumps, WDP-4A and WDP-4B, are shown at location H-4 on the drawing.	The two components listed, WDP-4A and WDP-4B, are pumps located in the AB sump, WDSU-2.
LRA-302-683-LR, SH02	Eight sumps are shown on the drawing: (a) reactor building sumps WDP-2A and WDP-2B (location F-3), (b) tendon access gallery sumps SDP-3A and SDP-3B (location H-4), (c) nuclear service area sumps SDP-2A and SDP-2B (location F-6), and (d) decay heat pit sumps WDP-3A and WDP-3B (location H-7).	The eight components listed, WDP-2A, WDP-2B, SDP-3A, SDP-3B, SDP-2A, SDP-2B, WDP-3A, and WDP-3B, are pumps located within the four specified sumps. These sumps are located in the RB (RB sump), the IB (tendon access gallery sump), and the AB (nuclear services area sump, decay heat pit sump).
<b>2.3.3.49</b>	<b>NUCLEAR SERVICE AND DECAY HEAT SEA WATER SYSTEM</b>	
LRA-302-611-LR, SH02	Two nuclear service cooler area sumps are shown on the drawing: 3A SDP-2A at location D-1 and 3B SDP-2B at location E-1.	The two components listed, SDP-2A and SDP-2B, are pumps located in sump SDSU-2. Sump SDSU-2 is located in the AB.
<b>2.3.3.52</b>	<b>STATION DRAINS SYSTEM</b>	
LRA-302-115-LR, SH01	A sump associated with the air operated sump pump, SDP-12, is shown at location H-5 on the drawing.	The sump pump listed, SDP-12, is located in sump MDSU-1. Sump MDSU-1 is located in the EFPB.
LRA-302-281-LR, SH01	A sump, SDP-9B, associated with the EDG fuel transfer pumps, 3B (AC motor driven) and 3D (DC motor driven) is shown at location F-6 on the drawing.	The component listed, SDP-9B, is a pump located in a sump in the floor of the Diesel Generator Building.
LRA-302-281-LR, SH01	The drawing indicates at location F-3 an unidentified structure that is assumed to be a sump associated with the EDG fuel transfer pumps 3A (AC motor driven) and 3C (DC motor driven).	The pump, SDP-9A, is located in the Diesel Generator Building. The sump for this pump, shown on drawing LRA-302-281-LR SH01, at location F-3, is located in the floor of Diesel Generator Building, elevation 111 ft. 2 in.
<b>2.3.3.53</b>	<b>SPENT FUEL COOLING SYSTEM</b>	
LRA-302-621-LR, SH01	The drawing shows two structures at location B-1, the incore instrument pit and the fuel transfer canal, that are not included in the scope of license renewal.	These are untagged features of the RB.

**RAI 2.3-06 General Items**

Background: 10 CFR Section 54.21 (a)(1) requires applicants to identify and list components subject to an AMR. The staff confirms inclusion of all components subject to an AMR by reviewing the components within the license renewal boundary.

Issue: The applicant used a definition for piping, piping components, and piping elements that are based on Section IX of NUREG-1801, Volume 2. The CR-3 definition of "Piping, piping components, and piping elements" replaces various combinations of the following: piping, fittings, tubing, flow elements/indicators, filter/demineralizer housings, nozzles, orifices, flex hoses, expansion joints, pump casing and bowl, safe ends, sight glasses, spray head body, strainer housings, thermowells, valve body and bonnet, and closure bolting. However, in the LRA, components such as expansion joints, filters, strainers, and flexible connections are specifically identified in the AMR for one or more mechanical systems, but not the associated tables for other similar mechanical systems.

Also, components that have an intended function in addition to M-1, pressure boundary, such as M-2, filtration, and M-5, heat transfer, are frequently not listed separately with the additional intended function. Rather, these components are frequently only listed under piping components with an M-1 function. Furthermore, some systems list tanks with piping and some systems list tanks separately. The staff is unable to discern a consistent CR-3 methodology for identifying components on the mechanical system AMR tables in the Scoping and Screening Results-Mechanical Systems section of the CR-3 LRA. Consequently, the staff is unable to verify that all components subject to an AMR are adequately represented in the AMR tables. Given below is a table with examples of systems identified with these table inconsistencies.

License Renewal Application (LRA) Section / Drawing Number	Component Listing / Issue
<b>2.3.3.22</b>	
<b>CONTROL COMPLEX CHILLED WATER SYSTEM</b>	
LRA-302-756-LR, SH01	<p>The drawing depicts temporary strainer components as included in scope of license renewal under 10 CFR 54.4(a)(1) at the inlet of chilled water pumps CHP-1A and CHP-1B (shown at locations C-6 and E-6 on the drawing). These components are not included on Table 2.3.3-22 or Table 3.3.2-22 with intended function M-1, pressure boundary, or M-2, filtration. Temporary strainers are also depicted as in scope on:</p> <ul style="list-style-type: none"> <li>• CR-3 LRA drawing 302-762-LR, SH01, industrial cooler water (shown at locations</li> </ul>

	<p>C-2 and D-2 on the drawing)</p> <ul style="list-style-type: none"> <li>• CR-3 LRA drawing 302-631-LR, SH01 and SH02, decay heat closed cycle cooling (shown at location F-1 on SH01 and location E-2 on SH02)</li> </ul>
<b>2.3.3.24</b>	
<b>INDUSTRIAL COOLING SYSTEM</b>	
LRA-302-762-LR, SH01	<p>The drawing depicts expansion joints, industrial cooler pump casings, and reactor cavity pump casings as included in scope of license renewal under 10 CFR 54.4(a)(2). These components are not included on Table 2.3.3-24 or Table 3.3.2-24 with intended function M-1, pressure boundary. Pump casings and expansion joints are listed separately on other system AMP tables such as the control complex chilled water system.</p>
<b>2.3.3.26</b>	
<b>ERP-3 DIESEL AIR STARTING SYSTEM</b>	
LRA-302-778-LR, SH01	<p>The drawing depicts expansion joints as included in scope of license renewal under 10 CFR 54.4(a)(1) on the diesel exhaust line. These components are not included on Table 2.3.3-26 or Table 3.3.2-26 with intended function M-1, pressure boundary. Expansion joints are included as separate component entries in other system tables such as the control complex chilled water system. The applicant should identify expansion joints in all systems and verify that they are included in an AMP.</p>
	<p>The drawing depicts flexible connections as included in scope of license renewal under 10 CFR 54.4(a)(1) on the diesel air start line. These components are not included on Table 2.3.3-26 or Table 3.3.2-26 with intended function M-1, pressure boundary. Flexible connections are included as separate component entries in other system tables such as the reactor building recirculation system. The applicant should identify flexible connections in all systems and verify that they are included in an AMP.</p>
<b>2.3.3.28</b>	
<b>FUEL OIL SYSTEM</b>	
LRA-302-776-LR, SH01	<p>The drawing depicts flexible connections in the drawing as included in scope of license renewal under 10 CFR 54.4(a)(1) on the DDEFW pump</p>

	diesel fuel storage tank. These components are not included on Table 2.3.3-28 or Table 3.3.2-28 with intended function M-1, pressure boundary.
<b>2.3.3.29</b>	
<b>JACKET COOLING SYSTEM</b>	
LRA-302-283-LR, SH01 & 02;  LRA-302-284-LR, SH01 & 02;  LRA-302-777-LR, SH01	The drawing depicts expansion tanks as included in scope of license renewal under 10 CFR 54.4(a)(1). These components are not included on Table 2.3.3-29 or Table 3.3.2-29 with intended function M-1, pressure boundary. Other systems specifically identify major system tanks as part of an AMP.
<b>2.3.3.32</b>	
<b>DEMINERALIZED WATER SYSTEM</b>	
LRA-302-182-LR, SH02	The drawing depicts the auxiliary building condensate and demineralized water storage tank as included in scope of license renewal under 10 CFR 54.4(a)(2) (shown at B-3 on the drawing). This tank is a significant system component and the tank is not specifically included on Table 2.3.3-32 or Table 3.3.2-32 with intended function M-1, pressure boundary. Other systems, such as the fuel oil system, identify significant system tanks that are subject to an AMP separately.
	The drawing depicts the post treatment filter as included in scope of license renewal under 10 CFR 54.4(a)(2) at the discharge of demineralized water pumps DWP-1A and DWP-1B (shown at D-7 on the drawing). The filter is not included on Table 2.3.3-32 or Table 3.3.2-32 with intended function M-2, filtration.
<b>2.3.3.33</b>	
<b>EMERGENCY DIESEL GENERATOR SYSTEM</b>	
LRA-302-282-LR, SH01	Filters are depicted as included in scope of license renewal under 10 CFR 54.4(a)(1) in numerous system drawings. An example of this on the referenced drawing occurs at locations D-1 and D-8. However, similar filters appear in numerous system drawings, and the filters are not specifically included on Table 2.3.3-33 nor Table 3.3.2-33 with intended function M-1, pressure boundary or M-2, filtration. Filters do not appear to meet the CR-3 definition for piping, piping components and piping elements.

	The drawing depicts flexible connections in the drawing as included in scope of license renewal under 10 CFR 54.4(a)(1) at locations E-1 (near EGV-35) and E-8 (near EGV-39). These components are not included on Table 2.3.3-33 or Table 3.3.2-33 with intended function M-1, pressure boundary.
<b>2.3.3.41</b>	
<b>MISCELLANEOUS DRAINS SYSTEM</b>	
LRA-302-114-LR, SH02	The drawing depicts a flash tank as in scope of license renewal at drawing location H-3. Typically, a pressure and temperature change allows entrained steam in the drains to change state to liquid and cool in the flash tank. Table 2.3.3-41 and Table 3.3.2-41 in the LRA only identify components with an intended function of pressure-boundary (M-1). The flash tank is not identified with an intended function of heat transfer (M-5).
<b>2.3.3.42</b>	
<b>MAKE UP AND PURIFICATION SYSTEM</b>	
LRA-302-661-LR, SH01	The drawing depicts Y-strainers as in scope of license renewal at drawing locations E-3 and E-7. These components are not included on Table 2.3.3-42 or Table 3.3.2-42 with intended function M-2, filtration. Strainers are identified in other systems such as the nuclear services closed cycle cooling system. The applicant should identify Y-strainers in all systems and verify that they are included in an AMP.
<b>2.3.3.49</b>	
<b>NUCLEAR SERVICE AND DECAY HEAT SEA WATER SYSTEM</b>	
LRA-302-611-LR, SH01	Expansion joint encapsulation sleeves, RWEJ-1 through RWEJ-10, shown at locations F-2, D-2, F-10, D-9, E-9, D-8, E-8, D-7, E-7 and D-6, respectively, are not specifically included in Tables 2.3.3-49 or 3.3.2-49.

Request: Explain the CR-3 methodology for identifying components on the mechanical system aging management program tables in the scoping and screening results-mechanical systems section of the CR-3 LRA. Justify the exclusion of the listed components with a specific intended function from an AMR. Evaluate all systems for similar excluded components.

**Response:**

*NEI 95-10, Section 4.1, discusses that it may be beneficial to create commodity groups of like structures or components to disposition the entire group with a single aging management review. The basis for group structures or components can be such characteristics as similar design, similar materials of construction, similar aging management practices and similar environments. The Structure and Component Screening process described in Section 2.1.2 of the CR-3 LRA states:*

*During the screening process, some SCs were incorporated into commodity groups based on similarity of their design or materials of construction. Use of commodity groups made it possible to address an entire group of SCs with a single evaluation. This approach is consistent with the changes made in Revision 1 of NUREG-1801, "Generic Aging Lessons Learned (GALL) Report" to enhance its applicability to future plant License Renewal applications. One of these revisions was the simplification and generalization of terms used to make the component/commodity line items more generic and less prescriptive. As an example based on the definitions in Section IX of NUREG-1801, Volume 2, the CR-3 definition of "Piping, piping components, and piping elements" replaces various combinations of the following: piping, fittings, tubing, flow elements/indicators, filter/demineralizer housings, nozzles, orifices, flex hoses, expansion joints, pump casing and bowl, safe ends, sight glasses, spray head body, strainer housings, thermowells, valve body and bonnet, and closure bolting.*

*As with the definition in GALL, Volume 2, Section IX, the list of component types associated with the definition of "piping, piping components, and piping elements" in Section 2.1.2 of the CR-3 LRA was not intended to be prescriptive. Consistent with the methodology recently used and accepted in the Harris Nuclear Plant License Renewal Application, CR-3 utilizes this term to generically address piping system components whose sole component intended function is to provide a pressure boundary. In some cases, components are included that potentially have multiple intended functions, but for the application at hand, have only the "M-1" pressure boundary function. Common examples are found in systems that are only in scope for potential spatial interaction with safety related components. The intended function for components in these systems would be to maintain their pressure boundary so as not to leak; and component level functions for straining/filtration, heat transfer, and flow restriction would not apply. Under this circumstance, the line item "Piping, piping components, and piping elements" would be expanded to include strainer/flow element housings and heat exchanger shells, as applicable. Deference was given to systems having small miscellaneous tanks (expansion chambers, accumulators, etc.) to use the GALL variant "Piping, piping components, piping elements and tanks" to reflect the presence of these components.*

*It is important to note that the term "Piping, piping components, and piping elements" was only used to generically represent piping components having the M-1 intended function. Components/commodities having other component intended functions were broken out into separate line items and associated with the applicable component intended function(s). CR-3 did provide separate listings of major system components to improve in accounting during the review process. The intent was to account for system components consistent with the extent reflected in NUREG-1801 Volume 1 and Volume 2 AMR tables, with additional consideration given to providing line items identifying major system pumps, tanks, and heat exchangers as an aid to reviewers.*

*The following table resolves scoping results for the individual examples provided in this RAI:*

<b>LRA Section / Drawing Number</b>	<b>Component Listing / Issue</b>	<b>Resolution</b>
<b>2.3.3.22</b>	<b>CONTROL COMPLEX CHILLED WATER SYSTEM</b>	
LRA-302-756-LR, SH01	<p>The drawing depicts temporary strainer components as included in scope of license renewal under 10 CFR 54.4(a)(1) at the inlet of chilled water pumps CHP-1A and CHP-1B (shown at locations C-6 and E-6 on the drawing). These components are not included on Table 2.3.3-22 or Table 3.3.2-22 with intended function M-1, pressure boundary, or M-2, filtration. Temporary strainers are also depicted as in scope on:</p> <ul style="list-style-type: none"> <li>• CR-3 LRA drawing 302-762-LR, SH01, industrial cooler water (shown at locations C-2 and D-2 on the drawing)</li> <li>• CR-3 LRA drawing 302-631-LR, SH01 and SH02, decay heat closed cycle cooling (shown at location F-1 on SH01 and location E-2 on SH02)</li> </ul>	<p>The locations identified depict flanged connections provided to facilitate the installation of temporary strainers for startup and / or system maintenance activities. To the extent that temporary strainers may, at some time, be installed at these locations, they are not considered permanent plant equipment, are not long-lived, and therefore not subject to License Renewal requirements.</p>
<b>2.3.3.24</b>	<b>INDUSTRIAL COOLING SYSTEM</b>	
LRA-302-762-LR, SH01	<p>The drawing depicts expansion joints, industrial cooler pump casings, and reactor cavity pump casings as included in scope of license renewal under 10 CFR 54.4(a)(2). These components are not included on Table 2.3.3-24 or Table 3.3.2-24 with intended function M-1, pressure boundary. Pump casings and expansion joints are listed separately on other system AMP tables such as the control complex chilled water system.</p>	<p>The industrial cooler pump casings, reactor cavity pump casings, and expansion joints depicted as in scope are included as "Piping, piping components, piping elements, and tanks" in Table 2.3.3-24. The expansion joints are further identified by the "Elastomers" material designation in aging management review Table 3.3.2-24.</p>
<b>2.3.3.26</b>	<b>EFP-3 DIESEL AIR STARTING SYSTEM</b>	
LRA-302-778-LR, SH01	<p>The drawing depicts expansion joints as included in scope of license renewal under 10 CFR 54.4(a)(1) on the diesel exhaust line. These components are not included on Table 2.3.3-26 or Table 3.3.2-26 with intended function M-1, pressure boundary. Expansion joints are included as separate component entries in other system tables such as the control complex chilled water system. The applicant should identify expansion joints in all systems and verify that they are included in an AMP.</p>	<p>AHEJ-1 is part of the Air Handling Ventilation and Cooling System described in Subsection 2.3.3.1 of the LRA. AHEJ-1 is included as "EFP-3 Diesel Engine Exhaust Expansion Joints and Silencers" in Table 2.3.3-1. AHEJ-2 and AHEJ-3 are part of the Emergency Feedwater Pump Building Ventilation System described in Subsection 2.3.3.18 of the LRA. AHEJ-2 and AHEJ-3 are included as "Expansion Joints" in Table 2.3.3-18.</p>

<p>LRA-302-778-LR, SH01</p>	<p>The drawing depicts flexible connections as included in scope of license renewal under 10 CFR 54.4(a)(1) on the diesel air start line. These components are not included on Table 2.3.3-26 or Table 3.3.2-26 with intended function M-1, pressure boundary. Flexible connections are included as separate component entries in other system tables such as the reactor building recirculation system. The applicant should identify flexible connections in all systems and verify that they are included in an AMP.</p>	<p>The flexible connections shown on drawing 302-778-LR, Sheet 1 are braided hoses and are included as "Piping, piping components, and piping elements" in Table 2.3.3-26 of the LRA.</p>
<p><b>2.3.3.28</b></p>	<p align="center"><b>FUEL OIL SYSTEM</b></p>	
<p>LRA-302-776-LR, SH01</p>	<p>The drawing depicts flexible connections in the drawing as included in scope of license renewal under 10 CFR 54.4(a)(1) on the DDEFW pump diesel fuel storage tank. These components are not included on Table 2.3.3-28 or Table 3.3.2-28 with intended function M-1, pressure boundary.</p>	<p>The flexible connections shown on drawing 302-776-LR, Sheet 1 are braided stainless steel hoses and included as "Piping, piping components, and piping elements" in Table 2.3.3-28 of the LRA.</p>
<p><b>2.3.3.29</b></p>	<p align="center"><b>JACKET COOLING SYSTEM</b></p>	
<p>LRA-302-283-LR, SH01 &amp; 02;  LRA-302-284-LR, SH01 &amp; 02;  LRA-302-777-LR, SH01</p>	<p>The drawing depicts expansion tanks as included in scope of license renewal under 10 CFR 54.4(a)(1). These components are not included on Table 2.3.3-29 or Table 3.3.2-29 with intended function M-1, pressure boundary. Other systems specifically identify major system tanks as part of an AMP.</p>	<p>The expansion tanks are not considered major tanks and are included as "Piping, piping components, piping elements, and tanks" in Table 2.3.3-29 of the LRA.</p>
<p><b>2.3.3.32</b></p>	<p align="center"><b>DEMINERALIZED WATER SYSTEM</b></p>	
<p>LRA-302-182-LR, SH02</p>	<p>The drawing depicts the auxiliary building condensate and demineralized water storage tank as included in scope of license renewal under 10 CFR 54.4(a)(2) (shown at B-3 on the drawing). This tank is a significant system component and the tank is not specifically included on Table 2.3.3-32 or Table 3.3.2-32 with intended function M-1, pressure boundary. Other systems, such as the fuel oil system, identify significant system tanks that are subject to an AMP separately.</p>	<p>Condensate and Demineralized Water Storage Tank, DWT-1, is a non-safety related tank located inside the AB that is in License Renewal scope for spatial interaction only. This tank is included as "Piping, piping components, piping elements, and tanks" in Table 2.3.3-32.</p>
<p>LRA-302-182-LR, SH02</p>	<p>The drawing depicts the post treatment filter as included in scope of license renewal under 10 CFR 54.4(a)(2) at the discharge of demineralized water pumps DWP-1A and DWP-1B (shown at D-7 on the drawing). The filter is not included on Table 2.3.3-32 or Table 3.3.2-32 with intended function M-2, filtration.</p>	<p>DWFL-1 is a non-safety related component located in the AB that is in License Renewal scope for spatial interaction only. Filtration is not an intended function for the post treatment filter. The M-1 pressure boundary associated with the filter housing is included as "Piping, piping components, piping elements, and tanks" in Table 2.3.3-32.</p>

2.3.3.33	<b>EMERGENCY DIESEL GENERATOR SYSTEM</b>	
LRA-302-282-LR, SH01	Filters are depicted as included in scope of license renewal under 10 CFR 54.4(a)(1) in numerous system drawings. An example of this on the referenced drawing occurs at locations D-1 and D-8. However, similar filters appear in numerous system drawings, and the filters are not specifically included on Table 2.3.3-33 nor Table 3.3.2-33 with intended function M-1, pressure boundary or M-2, filtration. Filters do not appear to meet the CR-3 definition for piping, piping components and piping elements.	The filter media for EGFL-1 through 8 have been screened as replaced. As stated on page 2.1-25 of the LRA: "Commodity group components that are replaced based on qualified life or specified time period (i.e., short-lived components) are not subject to AMR." The filter housings are included as "Piping, piping components, piping elements, and tanks" in Table 2.3.3-33 of the LRA.
LRA-302-282-LR, SH01	The drawing depicts flexible connections in the drawing as included in scope of license renewal under 10 CFR 54.4(a)(1) at locations E-1 (near EGV-35) and E-8 (near EGV-39). These components are not included on Table 2.3.3-33 or Table 3.3.2-33 with intended function M-1, pressure boundary.	The flexible connections shown on drawing 302-282-LR, Sheet 1 are braided stainless steel hoses and are included as "Piping, piping components, and piping elements" in Table 2.3.3-33 of the LRA.
2.3.3.41	<b>MISCELLANEOUS DRAINS SYSTEM</b>	
LRA-302-114-LR, SH02	The drawing depicts a flash tank as in scope of license renewal at drawing location H-3. Typically, a pressure and temperature change allows entrained steam in the drains to change state to liquid and cool in the flash tank. Table 2.3.3-41 and Table 3.3.2-41 in the LRA only identify components with an intended function of pressure-boundary (M-1). The flash tank is not identified with an intended function of heat transfer (M-5).	Flash Tank MDT-2 is a non-safety related component located in the IB and is in the scope of License Renewal solely for spatial interaction only. The M-1 pressure boundary associated with the flash tank is addressed within "Piping, piping components, piping elements, and tanks" in Table 2.3.3-41.
2.3.3.42	<b>MAKE UP AND PURIFICATION SYSTEM</b>	
LRA-302-661-LR, SH01	The drawing depicts Y-strainers as in scope of license renewal at drawing locations E-3 and E-7. These components are not included on Table 2.3.3-42 or Table 3.3.2-42 with intended function M-2, filtration. Strainers are identified in other systems such as the nuclear services closed cycle cooling system. The applicant should identify Y-strainers in all systems and verify that they are included in an AMP.	Filtration is not an intended function for Y-strainers at drawing locations E-3 and E-7. The M-1 pressure boundary associated with the strainer housings is addressed within "Piping, piping components, piping elements, and tanks" in Table 2.3.3-42.
2.3.3.49	<b>NUCLEAR SERVICE AND DECAY HEAT SEA WATER SYSTEM</b>	
LRA-302-611-LR, SH01	Expansion joint encapsulation sleeves, RWEJ-1 through RWEJ-10, shown at locations F-2, D-2, F-10, D-9, E-9, D-8, E-8, D-7, E-7 and D-6, respectively, are not specifically included in Tables 2.3.3-49 or 3.3.2-49.	The encapsulation sleeves for expansion joints RWEJ-1 through RWEJ-10 are flanged components constructed of carbon steel, and are included as "Piping, piping components, and piping elements" in Table 2.3.3-49.

**RAI 2.3.3.22-01 Control Complex Chilled Water System**

Background: 10 CFR Section 54.21(a)(1) requires each applicant to describe and justify the methods used to identify and list those structures and components subject to an AMR.

Issue: The LRA includes the control complex chiller lube oil pumps and oil cooler tubes in an AMR. These components are not shown on CR-3 LRA drawing 302-756-LR, SH01. Without a drawing or a more extensive discussion of the system components, it is not possible to validate that all components associated with the lube oil system have been included in scope and evaluated for inclusion in an AMR.

Request: Provide supplemental information for staff to verify that all control complex chilled water lube oil components are included in scope of license renewal under 10 CFR Section 54.21(a)(1) and evaluated for an AMP.

**Response:**

*The CR-3 Control Complex Chiller lubrication system consists of the lubrication oil pumps, oil filter, oil cooler, and interconnecting piping. These skid mounted components are not depicted on CR-3 flow diagrams. The oil cooler has no shell, but rather the tubes transfer heat directly to the refrigerant in the refrigerant reservoir. The lubrication oil filter is a cartridge filter that is replaced regularly, and the short-lived filter cartridge is not subject to aging management. As such, aging management requirements for the lubrication system are limited to the piping system pressure boundary (M-1) function, and the heat transfer (M-5) function for the lube oil cooler tubes. The Control Complex Chiller Lube Oil Pumps and Control Complex Chiller Oil Cooler Tubes are identified individually in component/commodity line items in LRA Table 2.3.3-22. Lube oil piping components having the M-1 intended function, including the oil filter housing, are included in "Piping, piping components, and piping elements."*

**RAI 2.3.3.27-01 Decay Heat Closed Cycle Cooling System**

Background: 10 CFR 54.4(a) requires applicants to identify and list all structures, systems, and components (SSCs) subject to an AMR. The staff confirms inclusion of these SSCs subject to an AMR by reviewing the component types within the license renewal boundary.

Issue: On CR-3 LRA drawing 302-631-LR, SH01, the drawing identifies connected piping to CR-3 LRA drawing 302-181-LR, SH02 as included in scope of license renewal under 10 CFR 54.4(a)(2) through valve DCV-97 at location A-5, but excludes the connection to valve DCV-212 from being in scope for license renewal. CR-3 LRA drawing 302-631-LR, SH02 also depicts connected piping to CR-3 LRA drawing 302-181-LR, SH02 as included in scope of license renewal under 10 CFR 54.4(a)(2) through valve DCV-98 where the connection to valve DCV-213 is excluded from being in scope for license renewal.

Request: Provide explanation for why both DCV-212 and DCV-213 valves are excluded from being in scope of license renewal under 10 CFR 54.4(a)(2).

**Response:**

*Valves DCV-212 and DCV-213 are in the scope of license renewal for 10 CFR 54.4(a)(2), and should have been highlighted on their respective LRA drawings. These valves are represented within "Piping, piping components, and piping elements" in Table 2.3.3-27.*

**RAI 2.3.3.32-01      Demineralized Water System**

**Background:** 10 CFR Section 54.21(a)(1) requires applicants to identify and list components subject to an AMR. The staff confirms inclusion of all components subject to an AMR by reviewing the components within the license renewal boundary.

**Issue:** On CR-3 LRA drawing 302-182-LR, SH01, the drawing identifies numerous area exclusions where spatial interaction concerns do not exist. In the CR-3 LRA, the applicant states that "...non-safety related piping (including air/gas systems) and ducting components located inside seismic Class I structures have been conservatively included in scope unless specific evaluations were performed to justify exclusion." However, the demineralized water system area exclusions are not described in any detail in the CR-3 LRA. Without a more extensive discussion of these area exclusions, it is not possible to validate that all components associated with the demineralized water system have been included in scope and evaluated for inclusion in an AMP.

**Request:** Provide justification for excluding the component types from the scope of license renewal to permit the staff to identify all portions of the systems within the license renewal boundary as specified in 10 CFR 54.21(a)(1).

**Response:**

*CR-3 has revised its methodology for spatial interaction scoping to narrowly permit exclusions only in areas where there are no safety related components, that are adequately protected and isolated from other areas of the plant; and are equipped with drain systems which are themselves in the scope of license renewal (See RAI 2.1-2 response in CR-3 to NRC letter, 3F0909-04, "Crystal River Unit 3 – Response to Requests for Additional Information for the Review of the Crystal River Unit 3 Nuclear Generating Plant, License Renewal Application (TAC NO. ME0274)," dated September 18, 2009 (ML092650272)). Based on these criteria, spatial interaction scoping exclusions associated with the Demineralized Water System are limited to three demineralized water supply valves (DWV-235, DWV-237, and DWV-238) and associated piping located in the Radwaste Processing Area of the AB. The balance of Demineralized Water System piping components located inside Seismic Class 1 Structures has been included in License Renewal scope. These components are represented by the component/commodity group "Piping, piping components, piping elements, and tanks" in Table 2.3.3-32.*

**RAI 2.3.3.38-01      Instrument Air System**

**Background:** 10 CFR Section 54.21(a)(1) requires applicants to identify and list components subject to an AMR. The staff confirms inclusion of all components subject to an AMR by reviewing the components within the license renewal boundary.

**Issue:** On CR-3 LRA drawing 302-271-LR, SH01, the drawing depicts the backup air system for ADVs as in scope of license renewal under 10 CFR 54.4(a)(2) for the instrument air system. However, in LRA Section 2.3.4.16, Main Steam System, the applicant identified the following two 10 CFR 54.4(a)(1) functions for the main steam system:

- The system provides relief capacity to protect the steam generators from overpressurization for a loss of electric power.
- The system controls steam generator pressure and thereby provides a mechanism for controlled decay heat removal for a loss of electrical power, steam line failure, loss of coolant accident, feedwater line break, and steam generator tube failure.

The ADV support of the 10 CFR 54.4(a)(1) functions of the main steam system would seem to indicate that the backup air system should be included as in scope of license renewal under 10 CFR 54.4(a)(1). It follows that equipment in the turbine building may be included as in scope of license renewal under 10 CFR 54.4(a)(2), nonsafety related components that could potentially affect the function of 10 CFR 54.4(a)(1) components.

**Request:** Justify the exclusion of the backup air system as within scope of license renewal under 10 CFR 54.4 (a)(1).

**Response:**

*FSAR Section 10.2.1.4 discusses the atmospheric dump valves (ADV) and states that the atmospheric dump valve relief capacity or control functions are not required to mitigate any limiting FSAR accident. The backup bottled air system for the ADVs provides a backup source of motive power to comply with the operability requirements for the coping period following a Station Blackout (SBO), which is a 10 CFR 54.4 (a)(3) function.*

**RAI 2.3.3.38-02 Instrument Air System**

**Background:** 10 CFR 54.21(a)(1) requires applicants to identify and list all SSCs subject to an AMR. The staff confirms inclusion of these SSCs subject to an AMR by reviewing the component types within the license renewal boundary.

**Issue:** In the response letter to NRC request for additional information, dated May 11, 2009, the applicant provided 10 CFR 54.4(a)(1) and (a)(2) functions for LRA systems. In the instrument air system, the applicant identified an 10 CFR 54.4(a)(1) function that indicates the system contains components associated with air reservoirs that provide an assured source of air to various safety related components. However, the main instrument air receivers were identified on the CR-3 LRA drawings 302-271-LR, SH01 and SH02. No individual component air reservoirs were identified on the drawings or included in the AMR tables for the instrument air system.

**Request:** Provide an explanation on why individual air reservoirs were excluded from being in scope of license renewal under 10 CFR 54.4(a).

**Response:**

*Individual air reservoirs were not excluded from the scope of License Renewal. The referenced air receivers are small passive tanks and are included in the scope of License Renewal in the Air Handling Ventilation and Cooling System, Control Complex Ventilation System, Industrial Cooling System, Circulating Water System, Main Feedwater System, Main Steam System, Make Up & Purification System, Secondary Services Closed Cycle Cooling System, and the Nuclear Services Closed Cycle Cooling System. As an example, the subject Main Steam System air receivers are in scope, and included in LRA Table 2.3.4-12 as "Piping, piping components, piping elements, and tanks."*

**RAI 2.3.3.52-01 Station Drains System**

**Background:** 10 CFR 54.4(a) requires applicants to identify and list all SSCs subject to an AMR. The staff confirms inclusion of these SSCs subject to an AMR by reviewing the component types within the license renewal boundary.

**Issue:** On CR-3 LRA drawing 302-281-LR, SH01, the drawing shows two "2" to Nearest Floor Drain" lines at locations E-3 and E-6. These lines appear to exit the building through a dividing wall and are shown to be within the scope of license renewal. If these lines are fluid-filled and go to the auxiliary building they can affect a safety-related component if they break.

**Request:** Describe where these lines go, and if any additional components should be included in the scope of license renewal.

**Response:**

*The two 2 in. lines routed to the nearest floor drains, shown at locations E-3 and E-6 on drawing 302-281-LR, SH01, exit the Diesel Generator Building into the Clean Maintenance Shop.*

*The portion of these lines that are within the Diesel Generator Building are included in the scope of License Renewal. These piping components are included in LRA Table 2.3.3-52 as "Piping, piping components, and piping elements."*

**RAI 2.3.3.53-01 Spent Fuel Cooling System**

**Background:** 10 CFR 54.21(a)(1) requires applicants to identify and list all SSCs subject to AMR. The staff confirms inclusion of these SSCs subject to an AMR by reviewing the component types within the license renewal boundary.

**Issue:** On CR-3 LRA drawing 302-621-LR, SH01, the drawing indicates two heat exchangers in the spent fuel storage pools "A" and "B" that are not included in the scope of license renewal. Heat exchanger FHX-2 is shown at location B-6 and heat exchanger FHX-3 is shown at location B-9.

**Request:** Provide the function of these heat exchangers and justify their exclusion from being in scope of license renewal under 10 CFR 54.4(a).

**Response:**

*Tag numbers FHX-2 and FHX-3 are not heat exchangers, but fuel pool gates, as denoted by the term "Gate" immediately over FHX-2.*

**RAI 2.3.4.3-01      Condensate Chemical Treatment System**

**Background:** 10 CFR 54.21(a)(1) requires applicants to identify and list all SSCs subject to an AMR. The staff confirms inclusion of these SSCs subject to an AMR by reviewing the component types within the license renewal boundary.

**Issue:** LRA Section 2.3.4.3, states that the condensate chemical treatment system is located within the turbine building, but has components in scope under 10 CFR 54.4 (a)(2), because the system has non-safety related components whose failure could prevent satisfactory accomplishment of the safety related functions. However, LRA Section 2.4.2.18, states that the turbine contains only non safety-related components.

The hydrazine addition tank is part of the chemical treatment system. LRA Figure 2.2-1 indicates that the hydrazine addition tank is within the scope of license renewal; however, 'tank' is not included as mechanical component type in the scope of license renewal. Yet, LRA Section 2.4.2.15, Miscellaneous Structures, describes the hydrazine addition tank foundation as being within the scope of license renewal because of a calculation for non-safety affecting safety identified the tank as required to support a design basis event.

**Request:** Provide an explanation for why the hydrazine tank foundation was included in the scope of license renewal for possible interaction with safety-related components; indicate which safety-related component interacts with the hydrazine addition tank, and provide justification of the exclusion of the hydrazine addition tank on the foundation from the scope of license renewal.

**Response:**

*The Hydrazine Batch Tank, referred to in LRA Section 2.3.4.3, is in the Condensate Chemical Treatment System, and is not in the scope of License Renewal. The Hydrazine Addition Tank is part of the Condensate System and is included in LRA Table 2.3.4-3 as "Piping, piping components, piping elements, and tanks." The Hydrazine Addition Tank is not adjacent to any Class I structure and is therefore not a seismic interaction concern. The topical calculation for 10 CFR 54.4(a)(2) scoping identified the Condensate System as a non-safety related system necessary to support main condenser vacuum during a steam generator tube rupture event. The Hydrazine Addition Tank was included in scope for 10 CFR 54.4(a)(2) as part of the Condensate System. As such, the Hydrazine Addition Tank foundation is within the scope of License Renewal.*

**RAI 2.3.4.3-02          Condensate Chemical Treatment System**

Background: 10 CFR 54.21(a) requires applicants to identify and list all SSCs subject to an AMR. The staff confirms inclusion of these SSCs subject to an AMR by reviewing the component types within the license renewal boundary.

Issue: The LRA stated the 10 CFR 54.4(a)(2) function for this system describes pressure boundary seals that support the control complex habitability envelope. The seals are also considered to be civil components. The LRA does not contain any AMR tables listing mechanical components for the chemical treatment system, but does indicate that there are civil and electrical components in this system that are in scope for license renewal. The LRA does not provide details on what type of components (mechanical or electrical) are associated with these pressure boundary seals.

Request: Identify the components transitioning through these seals; and if they are liquid filled, then justify their exclusion from the scope of license renewal under 10 CFR 54.4(a)(2). Also, identify the LRA table depicting the AMR for these pressure boundary seals.

**Response:**

*The Condensate Chemical Treatment System includes three in-scope civil discipline fire barrier penetration seals located in the control complex. These fire barrier penetration seals are age-managed as identified in LRA Table 3.5.2-6, Containments, Structures, and Component Supports – Summary of Aging Management Evaluation – Control Complex. The Condensate Chemical Treatment System does not contain any liquid-filled piping inside the control complex.*

**RAI 2.3.4.7-01          Condensate Demineralizer System**

Background: 10 CFR 54.21(a)(1) requires applicants to identify and list all SSCs subject to an AMR. The staff confirms inclusion of these SSCs subject to an AMR by reviewing the component types within the license renewal boundary.

Issue: LRA Section 2.3.4.7 refers to an acid/caustic drain line in paragraph 4 that is located in the auxiliary building. The staff could not locate this drain line on the LRA drawings.

Request: Identify this drain line referred to in the text located in the auxiliary building.

**Response:**

*LRA Subsection 2.3.4.7 refers to two drain lines, one acid and one caustic, associated with the Condensate Demineralizer System. These two lines have been cut, capped, and disconnected from the Condensate Demineralizer System.*

*One drain line is associated with a connection to the neutralizer tank and is identified on License Renewal scoping drawings 302-681-LR, Sheet 1 (G-1) and 302-163-LR, Sheet 2 (H-4). This drain line and associated piping components have been brought into the scope of License Renewal per the response to RAI 2.1-2. The response to RAI 2.1-2 was submitted to the NRC*

*in CR-3 letter, 3F0909-04, "Crystal River Unit 3 – Response to Requests for Additional Information for the Review of the Crystal River Unit 3 Nuclear Generating Plant, License Renewal Application (TAC NO. ME0274)," dated September 18, 2009 (ML092650272).*

*The second drain line is associated with a connection to the spare mix tank and is identified on License Renewal scoping drawings 302-671-LR, Sheet 1 (A-1) and 302-163-LR, Sheet 2 (H-4).*

*Since the two cut, capped, and disconnected drain lines could not be verified as non-pressurized in the plant, the lines have been included in scope as non-safety related pressure boundary components in Seismic Class 1 structures having the potential for spatial interactions with safety related SSCs.*

#### **RAI 2.3.4.8-01      Emergency Feedwater System**

**Background:** 10 CFR 54.21(a)(1) requires applicants to identify and list all SSCs subject to an AMR. The staff confirms inclusion of these SSCs subject to an AMR by reviewing the component types within the license renewal boundary.

**Issue:** The main condenser is located within the turbine building and the Emergency Feedwater (EFW) pumps are located within the intermediate building (as noted in FSAR Section 10.5.3). CR-3 LRA Drawing 302-082-LR, SH01 shows a cross-connect between main condenser 3B and the suction for EFW pumps Emergency Feedwater Pump (EFP)-1 and EFP-2. The cross-connect for EFP-1, the motor driven EFW pump, is through a normally-locked-closed motor operated gate valve shown at location F-7 (EFV-2). Similarly, the cross-connect for EFP-2, the turbine driven EFW pump, is also through a normally-locked-closed motor operated gate valve shown at location E-7 (EFV-1).

The condensate-boundary side of both these valves shows a change from ANSI 31.1 ES to ANSI B31.1 Non-Safety Related, and a change from seismic class III to seismic class I. However, where the change between seismic class occurs for these valves (EFV-1, -2) is not indicated on CR-3 LRA drawing 302-082-LR, SH01, nor does it also indicate where the system piping, components, or structures transition from the turbine building to the intermediate building.

**Request:** Provide supplemental information on CR-3 LRA drawing 302-082-LR, SH01 to identify where the condensate system supply line to the EFW pumps enters the intermediate building and if there are any changes in the piping classification.

#### **Response:**

*The condensate supply line to the EFW pumps enters the IB between the connection to the Auxiliary Feedwater Pump (which is installed in the TB) and the tee where it splits to go to EFP-1 and EFP-2 (which is located in the IB).*

*As identified on CR-3 LRA drawing 302-082-LR, SH01, the piping class break from Seismic Class III to Seismic Class I does not occur until the upstream connections to EFV-1 and EFV-2, which are downstream of the tee located inside the IB.*

#### **RAI 2.3.4.16-01      Main Steam System**

Background: 10 CFR 54.21(a)(1) requires applicants to identify and list all SSCs subject to AMR. The staff confirms inclusion of these SSCs subject to an AMR by reviewing the component types within the license renewal boundary.

Issue: On CR-3 LRA drawing 302-011-LR, SH01, there are two unidentified components (RM-G25/G28) shown at locations B-2 and E-2. Both components are attached to an atmospheric line from a normally-closed valve (MSV-25). Both components are shown as being included in the scope of license renewal.

Request: Provide clarification on what the components are and their intended function for being in scope of license renewal under 10 CFR 54.4(a).

**Response:**

*The two components (RM-G25/G28) are main steam line radiation monitors, and are included in the scope of License Renewal in the Radiation Monitoring (RM) system. A sample line from the Main Steam System is routed past the radiation monitors. These two radiation monitors perform a post-accident monitoring function in accordance with Regulatory Guide 1.97.*

*Radiation monitors RM-G25 (MSV-25) and RM-G28 (MSV-26) monitor a sample from the atmospheric dump valve discharge for gamma dose rate and provide confirmatory indication of atmospheric dump valve position during a Steam Generator Tube Rupture.*