ArevaEPRDCPEm Resource

From: BRYAN Martin (EXTERNAL AREVA) [Martin.Bryan.ext@areva.com]
Sent: Wednesday, September 22, 2010 9:16 AM
To: Tesfaye, Getachew
Cc: DELANO Karen (AREVA); ROMINE Judy (AREVA); BENNETT Kathy (AREVA); KOWALSKI David (AREVA)
Subject: Response to U.S. EPR Design Certification Application RAI No. 397, FSAR Ch. 9, Supplement 3
Attachments: RAI 397 Supplement 3 Response US EPR DC.pdf

Getachew,

AREVA NP Inc. provided a technically correct and partial response to one of the three questions of RAI No. 397, and a schedule for the remaining questions, on July 16, 2010. Supplement 1 response to RAI No. 397 was sent on August 31, 2010 to provide a revised schedule. Supplement 2 response to RAI No. 397 was sent on September 10, 2010 to provide a technically correct and complete response to one question and a technically correct and partial response to one question.

The attached file, "RAI 397 Supplement 3 Response US EPR DC.pdf" provides a technically correct and complete response to the remaining question.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which supports the response to RAI 397 Question 09.02.05-36.

The following table indicates the respective pages in the response document, "RAI 397 Supplement 3 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 397 — 09.02.05-36	2	4

This concludes the formal AREVA NP response to RAI 397, and there are no questions from this RAI for which AREVA NP has not provided responses.

Sincerely,

Martin (Marty) C. Bryan
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
Tel: (434) 832-3016
702 561-3528 cell
Martin.Bryan.ext@areva.com

From: BRYAN Martin (External RS/NB)
Sent: Friday, September 10, 2010 11:29 AM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); KOWALSKI David (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 397, FSAR Ch. 9, Supplement 2

Getachew,

AREVA NP Inc. provided a technically correct and partial response to one of the three questions of RAI No. 397, and a schedule for the remaining questions, on July 16, 2010. Supplement 1 response to RAI No. 397 was sent on August 31, 2010 to provide a revised schedule.

The attached file, "RAI 397 Supplement 2 Response US EPR DC.pdf" provides a technically correct and complete response to one question and a technically correct and partial response to one question.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which supports the response to RAI 397 Question 09.02.02-108.

The following table indicates the respective pages in the response document, "RAI 397 Supplement 2 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 397 — 09.02.02-107 (Part b)	2	3
RAI 397 — 09.02.02-108	4	7

The schedule for a technically correct and complete response to the remaining question remains the same and is provided below.

Question #	Response Date
RAI 397 — 09.02.05-36	September 29, 2010

Sincerely,

Martin (Marty) C. Bryan
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AREVA NP Inc.
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Martin.Bryan.ext@areva.com

From: BRYAN Martin (External RS/NB)
Sent: Tuesday, August 31, 2010 9:48 AM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); KOWALSKI David (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 397, FSAR Ch. 9, Supplement 1

Getachew,

AREVA NP Inc. provided a technically correct and partial response to one of the three questions of RAI No. 397, and a schedule for the remaining questions, on July 16, 2010. Since responses to the remaining questions are still being processed, a revised schedule is provided below.

The schedule for technically correct and complete responses to these questions is changed and provided below.

Question #	Response Date
RAI 397 — 09.02.02-107 (Part b)	September 14, 2010
RAI 397 — 09.02.02-108	September 14, 2010
RAI 397 — 09.02.05-36	September 29, 2010

Sincerely,

Martin (Marty) C. Bryan
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
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702 561-3528 cell
Martin.Bryan.ext@areva.com

From: BRYAN Martin (EXT)
Sent: Friday, July 16, 2010 4:31 PM
To: 'Tesfaye, Getachew'
Cc: DELANO Karen V (AREVA NP INC); ROMINE Judy (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); KOWALSKI David J (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 397, FSAR Ch. 9

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 397 Response US EPR DC.pdf" provides a technically correct and partial response to one of the three questions.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which supports the response to RAI 397 Question 09.02.02-107 (Part a).

The following table indicates the respective pages in the response document, "RAI 397 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 397 — 09.02.02-107	2	3
RAI 397 — 09.02.02-108	4	4
RAI 397 — 09.02.05-36	5	6

A complete answer is not provided for the three questions. The schedule for technically correct and complete responses to these questions is provided below.

Question #	Response Date
RAI 397 — 09.02.02-107 (Part b)	August 31, 2010
RAI 397 — 09.02.02-108	August 31, 2010
RAI 397 — 09.02.05-36	August 31, 2010

Sincerely,

Martin (Marty) C. Bryan
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
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From: Tesfaye, Getachew [mailto:Getachew.Tesfaye@nrc.gov]
Sent: Wednesday, June 16, 2010 8:03 AM
To: ZZ-DL-A-USEPR-DL
Cc: Wheeler, Larry; Eul, Ryan; Lee, Samuel; Segala, John; Hearn, Peter; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 397 (4644,4680), FSAR Ch. 9

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on May 4, 2010, and on June 15, 2010, you informed us that the RAI is clear and no further clarification is needed. As a result, no change is made to the draft RAI. The schedule we have established for review of your application assumes technically correct and complete responses within 30 days of receipt of RAIs. For any RAIs that cannot be answered within 30 days, it is expected that a date for receipt of this information will be provided to the staff within the 30 day period so that the staff can assess how this information will impact the published schedule.

Thanks,
Getachew Tesfaye
Sr. Project Manager
NRO/DNRL/NARP
(301) 415-3361

Hearing Identifier: AREVA_EPR_DC_RAIs
Email Number: 2027

Mail Envelope Properties (BC417D9255991046A37DD56CF597DB7107A40A1F)

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From: BRYAN Martin (EXTERNAL AREVA)

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RAI 397 Supplement 3 Response US EPR DC.pdf	178594	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Request for Additional Information No. 397(4644, 4680), Supplement 3

6/16/2010

U.S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 09.02.02 - Reactor Auxiliary Cooling Water Systems
SRP Section: 09.02.05 - Ultimate Heat Sink

Application Section: 9.2

QUESTIONS for Balance of Plant Branch 1 (AP1000/EPR Projects) (SBPA)

Question 09.02.05-36:

Follow-up to RAI 277, Question 09.02.05-21:

Based on the staff's review of the RAI 277, Question 09.02.05-21 response dated September 16, 2009, the applicant did not address the 10 CFR 52.47(a)(24) and (a)(25) regulations for the ultimate heat sink (UHS) emergency make-up water system which state:

"(24) A representative conceptual design for those portions of the plant for which the application does not seek certification, to aid the NRC in its review of the Final Safety Analysis Report (FSAR) and to permit assessment of the adequacy of the interface requirements in paragraph (a)(25) of this section;

(25) The interface requirements to be met by those portions of the plant for which the application does not seek certification. These requirements must be sufficiently detailed to allow completion of the FSAR;"

a. Since the design of the raw water supply system (RWSS) submitted in the response is designated as "non-safety" and supplies only the normal make-up water supply to the UHS, the EPR design certification (DC) application still lacks a description of the safety-related emergency make-up water system to the UHS. Therefore, to comply with 10 CFR 52.47(a)(24), the applicant should revise the FSAR to include a certified or conceptual design for the UHS emergency make-up water system.

b. Also, to comply with 10 CFR 52.47(a)(25), the FSAR, including Chapter 4, "Interface Requirements," of Tier 1, needs to be revised to include sufficiently detailed interface requirements for this system that must be satisfied by combined license applicants when they provide their plant specific RWSS design. Currently, the staff could find only a 300 gpm interface requirement for the safety-related, UHS emergency make-up water system, which has no certified or conceptual design provided. The current interface requirement is not comprehensive in that it does not take into account the temperature and chemistry of potential make-up water sources and their impact on the UHS performing its intended safety function over a period of 30 days. The applicant should address the staff's concern on the comprehensiveness of the interface requirement for the UHS emergency make-up water system.

c. The applicant's response included an FSAR markup including a conceptual design of a non-safety related RWSS in FSAR Section 9.2.9. The sentence "[[Connections to the UHS cooling tower basins are made at safety-related motor operated valves (MOV), identified in Section 9.2.5]]" is notated as "conceptual" design while these MOVs are shown to be part of the standard design in all of the corresponding figures. The applicant should clarify and maintain consistency regarding what portions are conceptual design, and what portions are part of the certified design in figures, tables, and text for FSAR Sections 9.2.1, 9.2.5, and 9.2.9. For figures and tables that include both conceptual design portions and certified design portions, a clear notation should be used to illustrate the distinctions. The applicant should address the apparent discrepancy in the example cited above as well as review the FSAR for other inconsistencies.

d. The opening sentence of FSAR Chapter 9.2.9 provided in the response states that the RWSS provides ultimate heat sink make-up. Figure 9.2.9-1 shows the RWSS supplies only "normal" make-up to the UHS. The applicant should add the word "normal" to the

text portion so that there is clarity that the RWSS does not provide both normal and emergency make-up water to the UHS per the conceptual design provided.

Response to Question 09.02.05-36:

a. The safety-related emergency makeup water system only supplies the emergency makeup water supply to the ultimate heat sink (UHS). The certified portion of the emergency makeup water system is the supply piping and isolation valves downstream of the flange at the building interface as illustrated in U.S. EPR FSAR Tier 2, Figure 9.2.5-1—Ultimate Heat Sink Piping and Instrumentation Diagram.

   Refer to U.S. EPR FSAR Tier 2, Figure 9.2.5-2— [[Conceptual Site-Specific UHS Systems]] for a conceptual diagram of the site-specific portion of the UHS. Also refer to Item No. 2.3-10 and 9.2-1 in U.S. EPR FSAR Tier 2, Table 1.8-2—U.S. EPR Combined License Information Items for a description of associated COL items that are the responsibility of the COL applicant.

   In addition, based on the response to Part b, U.S. EPR FSAR Tier 1, Section 2.7.11-8.0 will be revised to include interface requirements for supply temperature; structures, systems and components (SSC) classifications; and water chemistry.

   The emergency makeup water system components, piping, and isolation valves, which are included within the scope of the design certification, are classified as listed in U.S. EPR FSAR Tier 2, Table 3.2.2-1—Classification Summary. The supply piping and isolation valves are ASME Section III, Class 3 safety-related and Seismic Category 1.

   The safety functions of the emergency makeup water system are described in U.S. EPR FSAR Tier 1, Section 2.7.11 and U.S. EPR FSAR Tier 2, Section 9.2.5.5. U.S. EPR FSAR Tier 2, Section 9.2.5.5 will be revised to include the word “emergency” to clarify which makeup system is being referenced.

b. U.S. EPR FSAR Tier 1, Section 2.7.11 will be revised to include the following interface requirements:

   Item 8.2

   The site specific emergency makeup water system provides water to each ESW cooling tower basin at a temperature below the maximum ESWS supply temperature of 95°F.

   Item 8.3

   The site-specific emergency makeup water system is designed in accordance with ASME Section III, Class 3 safety-related SSC and Seismic Category I requirements.

   Item 8.4

   The site-specific emergency makeup water system provides a means to limit corrosion, scaling, and biological contaminants in order to minimize component fouling for a minimum of 30 days post DBA.

c. The safety-related emergency makeup water system isolation valves (i.e., 30PED10/20/30/40AA019) are included within the scope of the certified design. U.S. EPR FSAR Tier 2, Section 9.2.9 will be revised to include the following:

> "[[Non-safety-related normal makeup water is provided to the UHS cooling tower basins as clean (desalinated) water.]] The certified portion of the normal makeup water system is the supply piping downstream of the flange at the building interface as illustrated in Figure 9.2.5-1. The site-specific portion, conceptually shown in Figure 9.2.5-2, is the responsibility of the COL applicant and is included in the COL information items Tier 2, Table 1.8-2, Item No. 9.2-1. The non-safety-related connections to the UHS cooling tower basins are made at safety-related motor operated valves (MOV), identified in Section 9.2.5. These valves (i.e., 30PED10/20/30/40AA019) close during a DBA on receipt of an accident signal, thereby maintaining UHS cooling tower basin integrity under accident conditions."

d. U.S. EPR FSAR Tier 2, Section 9.2.9 will be revised to include the word '"emergency" to clarify which makeup system is being referenced.

FSAR Impact:

U.S. EPR FSAR Tier 1, Section 2.7.11 and U.S. EPR FSAR Tier 2, Section 9.2.5 and Section 9.2.9 will be revised as described in the response and indicated on the enclosed markup.

U.S. EPR Final Safety Analysis Report Markups

2.7.11 Essential Service Water System

1.0 Description

The essential service water system (ESWS) is a safety-related system that provides cooling water to the component cooling water system (CCWS) heat exchangers, the emergency diesel generator (EDG) heat exchangers, and the essential service water pump building ventilation system (ESWPBVS) room coolers under normal operating, shutdown/cooldown, design basis events. The Ultimate Heat Sink (UHS) dissipates heat rejected from the ESW during normal operation and post accident shutdown.

The ESWS and UHS provide the following safety-related functions~~The ESWS provides the following safety related functions~~:

- The ESWS provides the capability to transfer heat from CCWS and EDG to the environment following an anticipated operational occurrence (AOO) or postulated accident.

- The ESWS provides continued heat transfer from the fuel pool cooling system (FPCPS) via the CCWS as long as any fuel assemblies are in the spent fuel storage pool located outside containment.

- The UHS provides heat removal from the ESWS during normal operation and accident conditions, and transfers that energy to the environment.

- The ESW emergency makeup water system and blowdown system isolation valves provide automatic isolation of the tower basins under DBA conditions to prevent loss of tower water inventory.

- Each UHS cooling tower basin is sized to contain sufficient water to allow for 72 hours of ESW train operation under DBE conditions without addition of makeup water. The water level in the basin at the end of the 72 hour period is sufficient to meet pump minimum suction head (NPSH) requirements.

- After 72 hours have elapsed since the initiation of design basis event, the ESW emergency makeup water system provides water to the ESW system to replenish cooling water lost to evaporation, drift, blowdown and other losses in order to ensure cooling tower basin water levels remain within established limits under DBE conditions.

- The site specific ESW emergency makeup water system will provide this makeup water for at least 27 days following the initial 72 hour post-accident period (balance of 30 day scenario).

The ESWS provides the following non-safety-related functions:

- The ESWS provides the cooling of the system users during all normal plant operating conditions.

- Deleted.

- The ESW normal makeup water system provides makeup water to the ESW system to replenish cooling water lost to evaporation, drift, and other losses in order to ensure cooling tower basin water levels remain within established limits.

- The ESW system provides the means of transferring heat loads from the dedicated CCW heat exchanger under severe accident conditions to ensure containment integrity.

- Freeze protection is provided by diverting ESW return flow directly to the tower basin and controlling fan operation under low load/low ambient temperature conditions.

The non-safety-related dedicated ESWS train provides water as a cooling medium to the non-safety-related dedicated CCWS train heat exchanger and to the division 4 ESWS ESWPBVS room cooler for the removal of reject heat under severe accident conditions.

2.0 Arrangement

2.1 The functional arrangement of the ESWS and UHS is as shown in Figure 2.7.11-1—Essential Service Water System Functional Arrangement. ~~The functional arrangement of the ESWS is as shown on Figure 2.7.11-1—Essential Service Water System Functional Arrangement.~~

2.2 The location of the ESWS equipment is as listed in Table 2.7.11-1—Essential Service Water System Equipment Mechanical Design.

2.3 Physical separation exists between divisions of the ESWS.

2.4 Deleted.

2.5 Deleted.

3.0 Mechanical Design Features

3.1 Deleted.

3.2 Check valves listed in Table 2.7.11-1 will function as listed in Table 2.7.11-1.

3.3 Deleted.

3.4 Components identified as Seismic Category I in Table 2.7.11-1 can withstand seismic design basis loads without a loss of the function listed in Table 2.7.11-1.

3.5 Components listed in Table 2.7.11-1 as ASME Code Section III are designed in accordance with ASME Code Section III requirements.

3.6 Components listed in Table 2.7.11-1 as ASME Code Section III are fabricated in accordance with ASME Code Section III requirements.

3.7 Pressure boundary welds on components listed in Table 2.7.11-1 as ASME Code Section III are in accordance with ASME Code Section III requirements.

3.8 Components listed in Table 2.7.11-1 as ASME Code Section III retain pressure boundary integrity at design pressure.

3.9 Deleted.

3.10 Deleted.

3.11 Deleted.

3.12 ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 is designed in accordance with ASME Code Section III requirements.

3.13 ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 is installed in accordance with an ASME Code Section III Design Report.

3.14 Pressure boundary welds in ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 are in accordance with ASME Code Section III.

3.15 ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 retains pressure boundary integrity at design pressure.

3.16 ESWS piping shown as ASME Code Section III on Figure 2.7.11-1 is installed and inspected in accordance with ASME Code Section III requirements.

3.17 Components listed in Table 2.7.11-1 as ASME Code Section III are installed in accordance with ASME Code Section III requirements.

4.0 I&C Design Features, Displays and Controls

4.1 Displays listed in Table 2.7.11-2— Essential Service Water System Equipment I&C and Electrical Design are retrievable in the main control room (MCR) and the remote shutdown station (RSS) as listed in Table 2.7.11-2.

4.2 The ESWS equipment controls are provided in the MCR and the RSS as listed in Table 2.7.11-2.

4.3 Equipment listed as being controlled by a priority and actuator control system (PACS) module in Table 2.7.11-2 responds to the state requested by a test signal.

4.4 If one ESWS pump (30PEB10/20/30/40 AP001) fails during normal operation, a switchover to the other ESWS train is carried out automatically for the entire cooling train and is initiated by the CCWS Switchover sequence.

4.5 A spurious closure of the ESWS pump discharge valve (30PEB10/20/30/40 AA005) results in a switchover to the other ESWS train automatically for the entire cooling train and is initiated by the CCWS Switchover sequence.

4.6 Deleted.

4.7 Deleted.

5.0 Electrical Power Design Features

5.1 The components designated as Class 1E in Table 2.7.11-2 are powered from the Class 1E division as listed in Table 2.7.11-2 in a normal or alternate feed condition.

5.2 Valves listed in Table 2.7.11-2 fail as-is on loss of power.

5.3 Deleted.

5.4 Items identified in Table 2.7.11-2 as "Dedicated" ESWS motor-operated components are capable of being supplied by a SBODG.

6.0 Environmental Qualifications

6.1 Deleted.

7.0 Equipment and System Performance

7.1 The ESWS UHS as listed in Table 2.7.11-1 has the capacity to remove the design heat load from the CCWS and EDG heat exchangers, and the ESWPBVS room cooler.

7.2 The pumps listed in Table 2.7.11-1 have sufficient net positive suction head available (NPSHA) ~~that is greater than net positive suction head required (NPSHR) at system run-out flow~~.

7.3 Class 1E valves listed in Table 2.7.11-2 can perform the function listed in Table 2.7.11-1 under system operating conditions.

7.4 The ESWS provides for flow testing of the ESWS pumps during plant operation.

7.5 Deleted.

7.6 The ESWS delivers water to the CCWS and EDG heat exchangers and the ESWPBVS room cooler~~s~~.

8.0 Interface Requirements

8.1 The site specific emergency makeup water system provides 300 gpm makeup water to each ESW cooling tower basin to maintain the minimum basin water level.

8.2 The site-specific emergency makeup water system provides water to each ESW cooling tower basin at a temperature below the maximum ESWS supply temperature of 95°F.

8.3 The site-specific emergency makeup water system is designed in accordance with ASME Section III, Class 3 safety-related SSC and Seismic Category I requirements.

8.4 The site-specific emergency makeup water system provides a means to limit corrosion, scaling, and biological contaminants in order to minimize component fouling for a minimum of 30 days post-DBA.

09.02.05-36

Based on the increase in heat removal during a DBA, a temperature of less than or equal to 90°F is maintained in the UHS basin during normal operation, so that the cooling tower basin temperature does not exceed 95°F.

9.2.5.5 Safety Evaluation

The UHS pump buildings and cooling towers are designed to withstand the effects of earthquakes, tornadoes, hurricanes, floods, external missiles and other natural phenomena. Section 3.3, Section 3.4, Section 3.5, Section 3.7 and Section 3.8 provide the basis for the adequacy of the structural design of these structures. The aboveground piping and components are protected by the structures.

The UHS is designed to remain functional after a safe shutdown earthquake (SSE). Section 3.7 and Section 3.9 provide the design loading conditions that are considered. Section 3.5, Section 3.6 and Section 9.5.1 provide the hazards analyses to verify that a safe shutdown, as outlined in Section 7.4, can be achieved and maintained.

The four division design of the UHS provides complete redundancy; therefore a single failure will not compromise the UHS system safety-related functions. Each division of UHS is independent of any other division and does not share components with other divisions or with other nuclear power plant units.

Considering preventative maintenance and a single failure, two UHS divisions may be lost, but the ability to achieve the safe shutdown state under DBA conditions can be reached by the remaining two UHS divisions. In case of LOOP the four UHS cooling towers have power supplied by their respective division EDGs. Isolation valves can isolate non-safety-related portions of the system if necessary without compromising the safety-related function of the system.

The cooling towers must operate for a nominal 30 days following a LOCA without requiring any makeup water to the source or it must be demonstrated that replenishment or use of an alternate or additional water supply can provide continuous capability of the heat sink to perform its safety-related functions. The tower basin contains a minimum 72-hour supply of water. After the initial 72 hours, the site-specific emergency makeup water system will provide sufficient flow rates of makeup water to compensate for system volume losses for the remaining 27 days. The normal and emergency blowdown isolation valves provide automatic isolation of the ESWS from downstream non-safety-related blowdown piping under DBA conditions to prevent loss of ESW inventory. The ESW emergency makeup water system also provides isolation of the normal makeup water system from the tower basins under DBA conditions to prevent loss of ESW inventory.

09.02.05-36

The heat load after 72 hours post-DBA is lower than the peak heat load due to a reduction in the decay heat from the reactor. Consequently, the makeup flow rate required after 72 hours is lower than the peak condition. Since the UHS basin contains

9.2.9 Raw Water Supply System

09.02.05-36

The raw water supply system (RWSS) provides the initial source of water supplied to the plant demineralized water, potable and sanitary water, normal ultimate heat sink makeup, and fire protection systems. The RWSS and the design requirements of the RWSS are site-specific and will be addressed by the COL applicant.

[[The RWSS contains water received from a site-specific natural source and supplies it directly to the points of use where it may be further processed by the receiving plant systems. The raw water for demineralized water, potable water, fire protection, and ultimate heat sink (UHS) normal makeup is preprocessed as required by filtration, reverse osmosis, chemical treatment, and desalinization of brackish raw water sources prior to use.]] The conceptual design of the RWSS is shown in Figure 9.2.9-1—[[Conceptual Site-Specific Raw Water Supply System]].

[[The RWSS does not provide any safety-related function. There is no connection between raw water and the components of other systems that have the potential to contain radiological contamination.]]

09.02.05-36

~~[[Normal non-safety-related makeup water is provided to the UHS cooling tower basins as clean (desalinated) water. Connections to the UHS cooling tower basins are made at safety-related motor operated valves (MOV), identified in Section 9.2.5. These valves close during a DBA on receipt of an accident signal, thereby maintaining UHS cooling tower basin integrity under accident conditions.]]~~[[Non-safety-related normal makeup water is provided to the UHS cooling tower basins as clean (desalinated) water.]] The certified portion of the normal makeup water system is the supply piping downstream of the flange at the building interface as illustrated in Figure 9.2.5-1. The site-specific portion, conceptually shown in Figure 9.2.5-2, is the responsibility of the COL applicant and is included in the COL information in Table 1.8-2, Item No. 9.2-1. The non-safety-related connections to the UHS cooling tower basins are made at safety-related motor operated valves (MOV), identified in Section 9.2.5. These valves (i.e., 30PED10/20/30/40AA019) close during a DBA on receipt of an accident signal, thereby maintaining UHS cooling tower basin integrity under accident conditions.

Testing is conducted during post-construction, pre-commissioning, and startup as necessary to confirm system integrity and proper operation of individual components and the total system. Portions of the system are leak tested to demonstrate proper operation.

Instrumentation is provided for local and remote system monitoring, including alarms for flows, temperatures and pressures, tank level and temperature, UHS makeup flow, demineralized water system feed flow, potable water system feed flow, valve position indication for selected valves, and pump power on/off indication.