ArevaEPRDCPEm Resource

From: Pederson Ronda M (AREVA NP INC) [Ronda.Pederson@areva.com]
Sent: Friday, October 16, 2009 8:40 AM
To: Tesfaye, Getachew
Cc: BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC); DUNCAN Leslie E (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 275, FSAR Ch 14, Supplement 1
Attachments: RAI 275 Response Supplement 1 US EPR DC.pdf

Getachew,

AREVA NP Inc. (AREVA NP) provided responses to 6 of the 7 questions of RAI No. 275 on September 21, 2009. The attached file, "RAI 275 Response Supplement 1 US EPR DC.pdf," provides a technically correct and complete response to the remaining question, as committed.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 275, Question 14.03.06-31.

The following table indicates the pages in the response document, "RAI 275 Response Supplement 1 US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 275 — 14.03.06-31	2	3

This concludes the formal AREVA NP response to RAI 275, and there are no questions from this RAI for which AREVA NP has not provided responses.

Sincerely,

Ronda Pederson
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Licensing Manager, U.S. EPR Design Certification
AREVA NP Inc.
An AREVA and Siemens company
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From: WELLS Russell D (AREVA NP INC)
Sent: Monday, September 21, 2009 5:28 PM
To: 'Getachew Tesfaye'
Cc: Pederson Ronda M (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC); GUCWA Len T (EXT); DUNCAN Leslie E (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 275, FSAR Ch 14

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 275 Response US EPR DC.pdf," provides technically correct and complete responses to 6 of the 7 questions.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 275 Questions 14.02-123, 14.02-124, 14.02-125, and 14.03.06-34.

The following table indicates the respective pages in the response document, "RAI 275 Response US EPR DC.pdf," that contains AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 275 — 14.02-123	2	3
RAI 275 — 14.02-124	4	4
RAI 275 — 14.02-125	5	6
RAI 275 — 14.03.06-31	7	7
RAI 275 — 14.03.06-32	8	8
RAI 275 — 14.03.06-33	9	9
RAI 275 — 14.03.06-34	10	10

A complete answer is not provided for 1 of the 7 questions. The schedule for a technically correct and complete response to these questions is provided below.

Question #	Response Date
RAI 275 — 14.03.06-31	October 21, 2009

Sincerely,

(Russ Wells on behalf of)
Ronda Pederson
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From: Tesfaye, Getachew [mailto:Getachew.Tesfaye@nrc.gov]
Sent: Friday, August 21, 2009 2:40 PM
To: ZZ-DL-A-USEPR-DL
Cc: Crane, Samantha; Tomon, John; Peralta, Juan; Kang, Peter; Jenkins, Ronaldo; Miernicki, Michael; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 275 (2019, 3291),FSAR Ch. 14

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on August 12, 2009, and on August 19, 2009, 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: 882

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From: Pederson Ronda M (AREVA NP INC)

Created By: Ronda.Pederson@areva.com

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Response to

Request for Additional Information No. 275, Supplement 1

8/21/2009

U.S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 14.02 - Initial Plant Test Program - Design Certification and New License Applicants
SRP Section: 14.03.06 - Electrical Systems - Inspections, Tests, Analyses, and Acceptance Criteria

Application Section: FSAR Ch 14

QUESTIONS for Quality and Vendor Branch 1 (AP1000/EPR Projects) (CQVP)
QUESTIONS for Electrical Engineering Branch (EEB)

Question 14.03.06-31:

In RAI Question 14.03.06-3, the staff noted that electrical ITAAC tables associated with Chapter 2.5 of FSAR Tier 1 rely mostly on inspections and tests, but little or no analyses. The purpose of ITAAC is to verify that an "as built" facility conforms to the approved plant design and applicable NRC regulations. Thus, the staff requested that analyses (i.e., calculations) be included as a part of ITAAC commitment. The applicant, on November 26, 2008, added necessary analyses throughout the above electrical ITAAC tables on Chapter 2.5, but all those necessary inspections and tests were deleted from the aforementioned tables. Restore those tests or inspections that were deleted from the above electrical ITAAC tables, where applicable, or justify the deletion for each case.

Response to Question 14.03.06-31:

The Response to RAI 116, Question 14.03.06-3 revised U.S. EPR FSAR Tier 1, Section 2.5.1 and Section 2.5.2 to add analyses to ITAAC containing tests. Examples in the Response to RAI 116, Question 14.03.06-3 include U.S. EPR FSAR Tier 1, Table 2.5.1-3, Item 6.3 and Table 2.5.2-3, Item 5.12. In these items, analyses were added to the ITAAC and the test attribute was maintained.

The Response to RAI 260, Question 14.03.03-42 revised ITAAC in U.S. EPR FSAR Tier 1, Section 2.5.1 and Section 2.5.2 to restore inspections where inspections had been replaced with analyses in the Response to RAI 116, Question 14.03.06-3. The inspections requested in this RAI have been addressed in the Response to RAI 260, Question 14.03.03-42 for the Class 1E distribution systems, emergency power supply system (EPSS), and Class 1E uninterruptible power supply system (EUPS).

U.S. EPR FSAR Tier 1, Section 2.5 ITAAC tables for the remaining electrical sections will be revised to add an inspection, test, or analysis, as appropriate, as requested by this question:

- Table 2.5.2-3, an analysis will be added to Item 5.13.
- Table 2.5.3-2, a test will be added to Item 4.4.
- Table 2.5.4-4, a test will be added to Item 5.3.
- Table 2.5.5-1, an inspection will be added to Items 4.3 and 4.4.
- Table 2.5.6-1, an inspection will be added to Item 4.1.
- Table 2.5.7-2, an analysis and inspection will replace the test in Item 5.2.
- Table 2.5.7-2, an inspection will be added to Item 5.3.
- Table 2.5.8-1, an inspection will be added to Item 2.6.
- Table 2.5.11-1, an analysis and inspection will replace the test in Item 3.2.
- Table 2.5.11-1, an inspection will be added to Item 3.3.

The acceptance criteria for inspections will also be further clarified by stating that the analysis acceptance criteria is met for the specified equipment, while the test or inspection acceptance criteria is met for the installed equipment. The following U.S. EPR FSAR Tier 1, Section 2.5 ITAAC tables will be revised to provide this clarification:

- Table 2.5.1-3, Items 5.11, 5.12, 5.14, and 5.15.
- Table 2.5.2-3, Items 5.10, 5.12, and 5.14.
- Table 2.5.7-2, Item 5.1.
- Table 2.5.11-1, Item 3.1.

FSAR Impact:

U.S. EPR FSAR Tier 1, Table 2.5.1-3, Table 2.5.2-3, Table 2.5.3-2, Table 2.5.4-4, Table 2.5.5-1, Table 2.5.6-1, Table 2.5.7-2, Table 2.5.8-1, and Table 2.5.11-1 will be revised as described in the response and indicated on the enclosed markup.

U.S. EPR Final Safety Analysis Report Markups

Table 2.5.1-3—Class 1E Emergency Power Supply System ITAAC (6 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
5.11	EPSS switchgear, load centers, MCCs, and transformers as listed in Table 2.5.1-2 and their feeder breakers and load breakers are sized to supply their load requirements.	a. An analysis will be performed. 14.03.06-31	a. –Equipment sizing studies for the specified EPSS switchgear, load centers, MCCs, and transformers as listed in Table 2.5.1-2, and their feeder breakers and load breakers, concludes their ratings are greater than their analyzed load requirements.~~a. The EPSS switchgear, load centers, MCCs, and transformers as listed in Table 2.5.1-2 and their feeder breakers and load breaker ratings are greater than their analyzed load requirements.~~
		b. An inspection will be performed.	b. The ratings of the installed EPSS switchgear, load centers, MCCs, and transformers as listed in Table 2.5.1-2 and their feeder breakers and load breakers meet the analysis criteria.
5.12	EPSS cables and buses are sized to supply their assigned load requirements.	a. An analysis will be performed. 14.03.06-31	~~b~~a.~~.~~ Equipment sizing studies for the ~~as-built~~specified EPSS cables and buses concludes they are sized to supply analyzed load requirements.~~a. The as-built EPSS cables and buses are sized to supply their analyzed load requirements.~~
		b. An inspection will be performed.	b. The ratings of the installed EPSS cables and buses meet the analysis criteria.

Table 2.5.1-3—Class 1E Emergency Power Supply System ITAAC (6 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
5.14	EPSS switchgear, load centers, MCCs, and transformers listed in Table 2.5.1-2 are rated to withstand fault currents for the time required to clear the fault from its power source.	a. An analysis will be performed. 14.03.06-31	a. Short-circuit studies for the specified EPSS switchgear, load centers, MCCs, and transformers as listed in Table 2.5.1-2 concludes the equipment current capability is greater than the analyzed fault currents for the time required to clear the fault from its power source as determined by circuit interrupting device coordination analysis.~~The current capability of the EPSS switchgear, load centers, MCCs, and transformers as listed in Table 2.5.1-2 are greater than the analyzed fault currents for the time required to clear the fault from its power source as determined by circuit interrupting device coordination analysis.~~
		b. An inspection will be performed.	b. The ratings of the installed EPSS switchgear, load centers, MCCs, and transformers as listed in Table 2.5.1-2 meet the analysis criteria.

Table 2.5.1-3—Class 1E Emergency Power Supply System ITAAC (6 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
5.15	The feeder and load circuit breakers for EPSS switchgear, load centers and MCCs are rated to interrupt fault currents.	a. An analysis will be performed. 14.03.06-31	a. Short-circuit studies for the specified EPSS switchgear, load center, and MCC feeder and load circuit breakers, concludes the current interrupting capability is greater than the analyzed fault currents.~~The current interrupting capability of the feeder and load circuit breakers for the EPSS switchgear, load centers and MCCs are greater than the analyzed fault currents.~~
		b. An inspection will be performed.	b. The ratings of the installed EPSS switchgear, load centers, MCCs feeder and load circuit breakers meet the analysis criteria.
6.1	Each EPSS division has an assigned EDG that provides power if there is a loss of offsite power.	Tests will be performed.	Each EPSS division has an assigned EDG that provides power if there is a loss of offsite power.
6.2	Each EPSS 6.9 kV switchgear offsite power supply circuit breaker is opened by a protection system LOOP signal.	Tests will be performed.	Each EPSS division automatically separates from the offsite power supply on a signal from the protection system.
6.3	The EPSS provides voltages at the supplied safety-related equipment during normal and accident conditions that exceed the minimum required operating voltage of that equipment.	a. An analysis will be performed.	a. The analysis concludes the voltage at the supplied safety-related equipment during normal and accident conditions exceed the minimum required operating voltage of that equipment.
		b. A test will be performed.	b. EPSS bus voltage measurements verify analyzed safety-related terminal voltages.

Table 2.5.2-3—Class 1E Uninterruptible Power Supply ITAAC (5 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
5.7	With the alternate feed installed from EPSS division 4 to division 3; independence is maintained between the load group created by EUPS divisions 3 and 4, and divisions 1 and 2. EUPS divisions 1 and 2 are independent of each other.	Testing will be performed by providing a test signal in each Class 1E division; one division at a time while the alternate feed is installed from EPSS division 4 to division 3.	a. A test signal exists only in the load group created by Class 1E divisions 3 and 4 when the test signal is provided in Class 1E division 3 or 4. b. A test signal exists only in the division under test when the test signal is provided in Class 1E division 1 or 2.
5.8	Deleted.	Deleted.	Deleted.
5.9	Deleted.	Deleted.	Deleted.
5.10	EUPS switchboards, MCCs, transformers, panelboards, and converters as listed in Table 2.5.2-2 and their feeder breakers and load breakers are sized to supply their load requirements.	a. An analysis will be performed. 14.03.06-31 b. An inspection will be performed.	a. Equipment sizing studies for the specified EUPS switchboards, MCCs, and transformers as listed in Table 2.5.2-2, and their feeder breakers and load breakers, concludes their ratings are greater than their analyzed load requirements. ~~a. The EUPS switchboards, MCCs, transformers, panelboards, and converters as listed in Table 2.5.2-2 and their feeder breakers and load breakers are sized to supply their analyzed load requirements.~~ b. The ratings of the installed EUPS switchboards, MCCs, transformers, panelboards, and converters as listed in Table 2.5.2-2 and their feeder breakers and load breakers meet the analysis criteria.

Table 2.5.2-3—Class 1E Uninterruptible Power Supply ITAAC (5 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
5.11	EUPS cables and buses are sized to supply their assigned load requirements.	a. An analysis will be performed. b. An inspection will be performed.	a. Equipment sizing studies for the as-built EUPS cables and buses concludes they are sized to supply analyzed load requirements.~~a. The as-built EUPS cables and buses are sized to supply their analyzed load requirements.~~ b. The ratings of the installed EUPS cables and buses meet the analysis criteria.
5.12	Each EUPS battery is able to provide power for starting and operating design loads for a minimum of two hours when the ac supply to the battery charger is lost.	a. An analysis will be performed. 14.03.06-31 b. A battery discharge test will be performed. 14.03.06-31	a. Analysis concludes the specified~~as-built~~ EUPS battery is able to provide power for starting and operating analyzed design loads for a minimum time of two hours while battery terminal voltage remains above minimum voltage required for the design loads. b. The capacity of the ~~as-built~~installed EUPS battery is equal to or greater than the analyzed battery design duty cycle.
5.13	Each EUPS battery charger supplies assigned EUPS loads while maintaining the respective EUPS battery charged.	a. ~~A battery charger capacity test will be performed.~~An analysis will be performed.	a. ~~Each EUPS battery charger can maintain an output current that can supply the assigned EUPS loads while maintaining the respective EUPS battery charged.~~ Analysis concludes each specified EUPS battery charger rating is greater than the analyzed load requirements.

Table 2.5.2-3—Class 1E Uninterruptible Power Supply ITAAC (5 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
	14.03.06-31	b. A battery charger capacity test will be performed.	b. Each installed EUPS battery charger can maintain an output current that can supply the assigned EUPS loads while maintaining the respective EUPS battery charged.
5.14	The EUPS inverters are sized to power the design EUPS loads on the respective supplied MCC.	a. An analysis will be performed. 14.03.06-31 b. An inspection will be performed.	a. Analysis concludes each specified EUPS inverter rating is greater than the analyzed load requirements. b. The ratings of the installed EUPS inverters meet the analysis criteria.
5.15	EUPS operating voltage remains within the terminal voltage range of the supplied safety-related equipment during the battery duty cycle.	An analysis will be performed.	EUPS operating voltage remains within the terminal voltage range of the supplied safety-related equipment during the battery duty cycle.

Table 2.5.3-2—Station Blackout Alternate AC Source ITAAC (2 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
4.1	The SBODGs are connected to the EPSS Class 1E buses through two in series circuit breakers (one Class 1E circuit breaker at the Class 1E EPSS bus and one non-Class 1E circuit breaker at the non-Class 1E NPSS bus).	An inspection will be performed.	The SBODGs are connected to the EPSS Class 1E buses through two in series circuit breakers (one Class 1E circuit breaker at the Class 1E EPSS bus and one non-Class 1E circuit breaker at the non-Class 1E NPSS bus).
4.2	SBODG #1 is capable of connecting to EPSS divisions 1 and 2.	A test will be performed.	SBODG #1 is capable of starting and being available to connect to EPSS divisions 1 and 2 within 10 minutes of a simulated or actual station blackout.
4.3	SBODG #2 is capable of connecting to EPSS divisions 3 and 4.	A test will be performed.	SBODG #2 is capable of starting and being available to connect to EPSS divisions 3 and 4 buses within 10 minutes of a simulated or actual station blackout.
4.4	Each SBODG output rating is greater than the analyzed loads assigned in the respective EPSS divisions. 14.03.06-31	a. An analysis will be performed. b. A test will be performed	a. Analysis concludes each specified SBODG output rating is greater than the analyzed loads. ~~assigned in the respective EPSS divisions.~~ b. Each installed SBODG provides an output power capacity greater than the analyzed loads.

Table 2.5.4-4—Emergency Diesel Generator ITAAC (~~7~~ 10 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
5.2	The components identified as Class 1E in Table 2.5.4-2 are powered from the Class 1E division listed in Table 2.5.4-2.	A test will be performed for components identified as Class 1E in Table 2.5.4-2 by providing a test signal in each division.	The test signal provided in each division is present at the respective Class 1E components identified in Table 2.5.4-2.
5.3	Each EDG output rating is greater than the analyzed loads assigned in the respective EPSS division and loads capable of being connected to the EPSS division through the alternate feed. 14.03.06-31	a. An analysis will be performed. b. A test will be performed.	~~An analysis concludes:~~ a. Analysis concludes each specified ~~Each~~ EDG output rating is greater than the analyzed loads assigned in the respective EPSS divisions and loads capable of being connected to the EPSS division through the alternate feed. ~~b. Each EDG provides the minimum required operating voltage at the supplied safety-related equipment with the EDG steady-state output voltage at ± 5 percent and steady-state frequency at ± 2 percent of nominal.~~ b. Each installed EDG provides an output power capacity greater than the analyzed loads.
5.4	Valves listed in Table 2.5.4-2 fail to the position as shown in Table 2.5.4-2 on loss of power.	Testing will be performed for the valves listed in Table 2.5.4-2 to verify the position of valves on loss of power.	Following the loss of power, the valves listed in Table 2.5.4-2 fail to the position as shown in Table 2.5.4-2.
6.1	Each EDG is started by a protection system LOOP signal from the respective EPSS division medium voltage bus.	A test will be performed.	Each EDG is started by a protection system LOOP signal from the respective EPSS division medium voltage bus, achieves rated speed and voltage and connects to the assigned EPSS bus in ≤ 15 Seconds.

Table 2.5.5-1—Preferred (Offsite) Power Supply System ITAAC

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	Deleted.~~EATs are separated from each other and the NATs and MSUs.~~	Deleted.~~An inspection will be performed.~~	Deleted.~~Each as-built EAT is separated from the other EAT, MSUs, and NATs by distance or a fire barrier.~~
3.1	Each EAT and NAT has an oil containment system.	An inspection will be performed.	Each EAT and NAT has an oil containment system.
3.2	Each EAT and NAT has a deluge fire protection system.	An inspection will be performed.	Each EAT and NAT has a deluge fire protection system.
4.1	Deleted.	Deleted.	Deleted.
4.2	EAT power cables and instrumentation and control circuits are routed separately from NAT power cables and instrumentation and control circuits.	An inspection will be performed.	The EAT power cables and instrumentation and control circuits are routed separately from NAT power cables and instrumentation and control circuits.
4.3	Each EAT and associated power cables are sized to power the EPSS safety-related and non-safety-related loads. 14.03.06-31	a. An analysis will be performed. b. An inspection will be performed.	a. The analyzed design operating safety-related and non-safety-related loads connected to each EAT and the ~~associated~~ connected cables are within the ~~as-built~~specified EAT and ~~associated~~ power cables capacity. b. The ratings of the installed EATs and connected power cables meet the analysis criteria.
4.4	Each NAT and associated nonsegregated-phase bus is sized to power the connected NPSS non-safety-related loads.	a. An analysis will be performed.	a. The analyzed design operating non-safety-related loads connected to each NAT and the connected nonsegregated-phase bus are within the specified NAT and ~~is within the as-built NAT and associated~~ nonsegregated-phase bus capacity.

Table 2.5.5-1—Preferred (Offsite) Power Supply System ITAAC

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
	14.03.06-31	b. An inspection will be performed.	b. The ratings of the installed NATs and connected nonsegreated-phase bus meet the analysis criteria.

Table 2.5.6-1—Power Transmission System ITAAC

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	Deleted.~~MSUs are separated from the EATs.~~	Deleted.~~An inspection will be performed.~~	Deleted.~~Each as-built MSU is separated from the EATs by distance or a fire barrier.~~
3.1	Each MSU has an oil containment system.	An inspection will be performed.	Each MSU has an oil containment system.
3.2	Each MSU has a deluge fire protection system.	An inspection will be performed.	Each MSU has a deluge fire protection system.
4.1	The MSUs and associated isophase bus are sized to support the main generator rated output at generator rated power factor. 14.03.06-31	a. An analysis will be performed. b. An inspection will be performed.	a. ~~The main generator rated output at rated power factor is within the as-built MSU and associated isophase bus ratings~~Analysis concludes the main generator output at rated power factor is within the specified MSU and connected isophase bus ratings. b. The ratings of the installed main generator, MSU and isophase bus meet the analysis criteria.

Next File

Table 2.5.7-~~3~~2—Non-Class 1E Uninterruptible Power Supply ITAAC (2 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
5.1	Each NUPS battery supplies power for starting and operating design loads for a minimum of two hours when the ac supply to the battery charger is lost.	a. An analysis will be performed. 14.03.06-31	a. Analysis concludes the ~~as-built~~specified NUPS battery is able to provide power for starting and operating analyzed design loads for a minimum time of two hours while battery terminal voltage remains above minimum voltage required for the design loads.
		b. A battery discharge test will be performed.	b. The capacity of the ~~as-built~~installed NUPS battery is equal to or greater than the analyzed battery design duty cycle capacity.
5.2	Each NUPS battery charger supplies assigned NUPS loads while maintaining the respective NUPS battery charged. 14.03.06-31	a. ~~A battery charger capacity test~~An analysis will be performed.	a. ~~Each NUPS battery charger can maintain an output current that can supply the assigned NUPS loads while maintaining the respective NUPS battery charged.~~Analysis concludes each specified NUPS battery charger rating is greater than the analyzed load requirements.
		b. An inspection will be performed.	b. The ratings of the installed NUPS battery chargers meet the analysis criteria.
5.3	The NUPS inverters are sized to power the loads assigned to the respective supplied MCC.	a. An analysis will be performed.	a. Analysis concludes each specified NUPS inverter rating is greater than the analyzed load requirements.

Table 2.5.7-~~3~~2—Non-Class 1E Uninterruptible Power Supply ITAAC (2 Sheets)

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
	14.03.06-31	b. An inspection will be performed.	b. The ratings of the installed NUPS inverters meet the analysis criteria.
5.4	Physical separation exists between Class 1E division reactor trip breakers.	An inspection will be performed.	The reactor trip breakers are located in separate cabinets within the control rod drive mechanism distribution panels
5.5	The reactor trip breakers open when a signal is provided to the shunt trip coil.	A test will be performed.	The reactor trip breakers open when the shunt trip coil is energized.
6.1	The reactor trip breakers open on a protection system signal.	A test will be performed.	The reactor trip breakers open on a protection system signal.

Next File

Table 2.5.8-1—Lightning Protection and Grounding System ITAAC

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	Surge arresters are provided for MSUs, NATs and EATs.	An inspection will be performed.	The surge arresters are provided for MSUs, NATs and EATs.
2.2	Main generator, EDG and SBODG neutrals are connected to the station ground grid.	An inspection will be performed.	The main generator, EDG and SBODG neutrals are connected to the station ground grid.
2.3	AC distribution system transformer neutral points are connected to the station ground grid.	An inspection will be performed.	The ac distribution system transformer neutral points are connected to the station ground grid.
2.4	The ground bus of ac distribution system switchgear, loads centers and MCCs listed in Table 2.5.1-2 is connected to the station ground grid.	An inspection will be performed.	The ground bus of the ac distribution system switchgear, load center and MCCs listed in Table 2.5.1-2 is connected to the station ground grid.
2.5	Plant instrumentation grounding system is connected to the station grounding grid.	An inspection will be performed.	The plant instrumentation grounding system is connected to the station grounding grid.
2.6	Insulation coordination is achieved on surge arrestors on MSUs, NATs, and EATs. 14.03.06-31	a. An analysis will be performed.	a. Analysis concludes: • The lightning impulse protective ratio of the chopped wave withstand to the front-of-wave protection level is equal to or greater than 1.2. • ~~b.~~ The lightning impulse protective ratio of the basic lightning impulse insulation level to the lightning impulse protective level is equal to or greater than 1.2. • ~~c.~~ The switching impulse protective ratio of the basic switching impulse insulation level to the switching impulse protective level is equal to or greater than 1.15.

Table 2.5.8-1—Lightning Protection and Grounding System ITAAC

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
	14.03.06-31	b. An inspection will be performed.	b. The insulation ratings for MSU, NAT, and EAT surge arrestors meet the analysis criteria.

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Table 2.5.11-1—12-Hour Uninterruptible Power Supply System ITAAC

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the 12UPS is as shown on Figure 2.5.11-1.	An inspection of the as-built system will be performed.	The as-built 12UPS conforms to the functional arrangement as shown in Figure 2.5.11-1.
3.1	Each 12UPS battery is able to provide power for starting and operating design loads for a minimum of 12 hours when the ac supply to the battery charger is lost.	a. An analysis will be performed. 14.03.06-31	a. Analysis concludes the ~~as-built~~specified 12UPS battery is able to provide power for starting and operating analyzed design loads for a minimum time of 12 hours while battery terminal voltage remains above minimum voltage required for the design loads.
		b. A battery discharge test will be performed.	b. The capacity of the ~~as-built~~installed 12UPS battery is equal to or greater than the analyzed battery design duty cycle capacity.
3.2	Each 12UPS battery charger supplies assigned 12UPS loads while maintaining the respective 12UPS battery charged. 14.03.06-31	a. ~~A battery charger capacity test~~ An analysis will be performed.	a. ~~Each 12UPS battery charger can maintain an output current that can supply the assigned 12UPS loads while maintaining the respective 12UPS battery charged.~~Analysis concludes each specified 12UPS battery charger rating is greater than the analyzed load requirements.
		b. An inspection will be performed.	b. The ratings of the installed 12UPS battery chargers meet the analysis criteria.
3.3	The 12UPS inverters are sized to power the loads assigned to the respective supplied MCC.	a. An analysis will be performed.	a. Analysis concludes each specified 12UPS inverter rating is greater than the analyzed load requirements.

Table 2.5.11-1—12-Hour Uninterruptible Power Supply System ITAAC

Commitment Wording	Inspections, Tests, Analyses	Acceptance Criteria
14.03.06-31	b. An inspection will be performed.	b. The ratings of the installed 12UPS inverters meet the analysis criteria.

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