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Your ref: Project Number 740
Our ref: DCP/NRC1982

August 23, 2007

Subject: AP1000 COL Responses to Requests for Additional Information (TR #93)

In support of Combined License application pre-application activities, Westinghouse is submitting responses to NRC requests for additional information (RAI) on AP1000 Standard Combined License Technical Report 93, APP-GW-GLR-073, Rev. 0, Tier 1, Table 2.2.1-1 Electrical Penetration Changes. These RAI responses are submitted as part of the NuStart Bellefonte COL Project (NRC Project Number 740). The information included in the responses is generic and is expected to apply to all COL applications referencing the AP1000 Design Certification.

The responses are provided for request for additional information RAI-TR93-ICE2-06 and RAI-TR93-ICE2-07. These responses complete all requests received to date for Technical Report 93.

Pursuant to 10 CFR 50.30(b), the responses to requests for additional information on Technical Report 93 are submitted as Enclosure 1 under the attached Oath of Affirmation.

Questions or requests for additional information related to the content and preparation of these responses should be directed to Westinghouse. Please send copies of such questions or requests to the prospective applicants for combined licenses referencing the AP1000 Design Certification. A representative for each applicant is included on the cc: list of this letter.

Very truly yours,

Monte D Battley FOR

A. Sterdis, Manager
Licensing and Customer Interface
Regulatory Affairs and Standardization

D079

NRO

/Attachment

1. "Oath of Affirmation," dated August 23, 2007

/Enclosure

1. Responses to Requests for Additional Information on Technical Report No. 93

cc:	D. Jaffe	-	U.S. NRC	1E	1A
	E. McKenna	-	U.S. NRC	1E	1A
	S. Adams	-	Westinghouse	1E	1A
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	P. Hastings	-	Duke Power	1E	1A
	C. Ionescu	-	Progress Energy	1E	1A
	D. Lindgren	-	Westinghouse	1E	1A
	A. Monroe	-	SCANA	1E	1A
	M. Moran	-	Florida Power & Light	1E	1A
	C. Pierce	-	Southern Company	1E	1A
	E. Schmiech	-	Westinghouse	1E	1A
	G. Zinke	-	NuStart/Entergy	1E	1A
	Da Li	-	Westinghouse	1E	1A

ATTACHMENT 1

"Oath of Affirmation"

ATTACHMENT 1

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of:	)
NuStart Bellefonte COL Project	)
NRC Project Number 740	)

APPLICATION FOR REVIEW OF
"AP1000 GENERAL COMBINED LICENSE INFORMATION"
FOR COL APPLICATION PRE-APPLICATION REVIEW

W. E. Cummins, being duly sworn, states that he is Vice President, Regulatory Affairs & Standardization, for Westinghouse Electric Company; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission this document; that all statements made and matters set forth therein are true and correct to the best of his knowledge, information and belief.

W. E. Cummins
Vice President
Regulatory Affairs & Standardization

Subscribed and sworn to
before me this 23rd day
of August 2007.

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Patricia S. Aston, Notary Public
Murrysville Boro, Westmoreland County
My Commission Expires July 11, 2011
Member, Pennsylvania Association of Notaries

Notary Public

ENCLOSURE 1

Responses to Requests for Additional Information on Technical Report No. 93

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-TR93-ICE2-06
Revision: 0

Question:

On July 17, 2007, in response to RAI -TR93-ICE2-01, you stated that "Procedures for periodic testing of protective devices that provide penetration overcurrent protection are part of the plant operations and maintenance programs." The staff notes that the limiting conditions for operation (LCO) and surveillance requirements (SR) for penetration overcurrent protective devices were initially included in standard technical specifications (STS). By a letter from Thomas E. Murley, Director, Nuclear Reactor Regulation to Walter S. Wilgus, Chairman, B&W Owners group, dated May 9, 1988, NRC approved the LCO and SR for Containment Penetration Conductor Overcurrent Protective Devices to be relocated from STS to other licensee controlled document. Please indicate the licensee controlled document where the information will be included. In addition, please provide the following:

a) Will the above procedures cover both Class 1E and non-Class 1E protective devices that provide penetration overcurrent protection?

b) Will the above procedures be consistent with the requirements of STS 5.4, Appendix B, Criterion 5, and 10 CFR 50.65?

c) Provide details regarding Limiting Conditions for Operation (LCO) and surveillance requirements (SR) including test frequency.

d) The information regarding LCO and SR should be included in the DCD Tier 2, Section 8.3.1.1.6.

Westinghouse Response:

As noted above, the AP1000 Certified Technical Specification does not include, and is not required to include testing of Containment Penetrations overcurrent protective devices provided the procedure commitments are relocated in another licensee controlled document. DCD Rev. 16, Section 8.3.3 includes a COL information item commitment for the COL applicant to establish plant procedures required for periodic testing of containment penetration protective devices. This information will be provided to the NRC as a part of the COL application process.

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

Design Control Document (DCD) Revision:
None

PRA Revision:
None

Technical Report (TR) Revision:
None

AP1000 TECHNICAL REPORT REVIEW
Response to Request For Additional Information (RAI)

RAI Response Number: RAI-TR93-ICE2-07
Revision: 0

Question:

In response to RAI-TR93-ICE2-03 and 05, you stated that DCD Tier 1, Section 2, System Based Design description and ITAAC Table 2.2.1-3, Item 4a and 5 identify penetrations (both Class 1E and non-Class 1E) as ASME code Section III and seismic Category I. Per DCD Tier 1,Table 2.2.1-1, non-Class 1E penetrations are qualified for Harsh environment. Item 6.a of ITAAC Table 2.2.1-3 provides design commitment, inspections, test, analysis and acceptance criteria for Class 1E equipment qualification for harsh environment. Discuss how the non-Class 1E penetrations will be qualified for harsh environment. Also, provide an explanation why Item 6.b will not be modified for non-Class 1E penetrations. Explain why 6.c is not required a revision in light of non-Class 1E cables will be associated with non-Class 1E penetrations.

Westinghouse Response:

Consistent with the harsh environmental qualification requirement for the electrical penetrations in the AP1000 DCD tier 2, Section 3.11, Table 3.11-1, WEC will add a new item 6d to the ITAAC, section 2.2.1, Table 2.2.1-3 to address harsh environment qualification requirement for non-Class 1E electrical penetrations. Note that non-Class 1E penetrations need to be qualified for maintaining their isolation integrity (containment integrity) but not for functional capability as there are no additional safety-related functions associated with these penetrations.

Item 6b identifies Class 1E components and does not require modification to include non-Class 1E components that may need to be qualified for harsh environment. Non-Class 1E electrical penetrations are not considered Class 1E components.

Item 6c states that, "Separation is provided between CNS Class 1E divisions, and between Class 1E divisions and non-Class 1E cable". This is consistent with IEEE Standard 317 (Electric Penetration Assemblies in Containment Structures for Nuclear Power Generating Stations, 1983) and Reg. 1.65, therefore this item does not require a revision.

Design Control Document (DCD) Revision:
The proposed revision to the DCD Tier 1 ITAAC is attached with this RAI response.

PRA Revision:
None

Technical Report (TR) Revision:
None

2.2.1 Containment System

Design Description

The containment system (CNS) is the collection of boundaries that separates the containment atmosphere from the outside environment during design basis accidents.

The CNS is as shown in Figure 2.2.1-1 and the component locations of the CNS are as shown in Table 2.2.1-4.

1. The functional arrangement of the CNS and associated systems is as described in the Design Description of this Section 2.2.1.

2. a) The components identified in Table 2.2.1-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements.

   b) The piping identified in Table 2.2.1-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements.

3. a) Pressure boundary welds in components identified in Table 2.2.1-1 as ASME Code Section III meet ASME Code Section III requirements.

   b) Pressure boundary welds in piping identified in Table 2.2.1-2 as ASME Code Section III meet ASME Code Section III requirements.

4. a) The components identified in Table 2.2.1-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure.

   b) The piping identified in Table 2.2.1-2 as ASME Code Section III retains its pressure boundary integrity at its design pressure.

5. The seismic Category I equipment identified in Table 2.2.1-1 can withstand seismic design basis loads without loss of structural integrity and safety function.

6. a) The Class 1E equipment identified in Table 2.2.1-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

   b) The Class 1E components identified in Table 2.2.1-1 are powered from their respective Class 1E division.

   c) Separation is provided between CNS Class 1E divisions, and between Class 1E divisions and non-Class 1E cable.

   d) The non-Class 1E electrical penetrations indentified in Table 2.2.1-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of containment pressure boundary integrity.

Table 2.2.1-3 (cont.)
Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
6.a) The Class 1E equipment identified in Table 2.2.1-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.	i) Type tests, analyses, or a combination of type tests and analyses will be performed on Class 1E equipment located in a harsh environment.	i) A report exists and concludes that the Class 1E equipment identified in Table 2.2.1-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.
	ii) Inspection will be performed of the as-installed Class 1E equipment and the associated wiring, cables, and terminations located in a harsh environment.	ii) A report exists and concludes that the as-installed Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.2.1-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.
6.b) The Class 1E components identified in Table 2.2.1-1 are powered from their respective Class 1E division.	Testing will be performed by providing a simulated test signal in each Class 1E division.	A simulated test signal exists at the Class 1E equipment identified in Table 2.2.1-1 when the assigned Class 1E division is provided the test signal.
6.c) Separation is provided between CNS Class 1E divisions, and between Class 1E divisions and non-Class 1E cable.	See Tier 1 Material, Table 3.3-6, item 7.d.	See Tier 1 Material, Table 3.3-6, item 7.d.
6.d) The non-Class 1E electrical penetrations indentified in Table 2.2.1-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of containment pressure boundary integrity.	i) Type tests, analyses, or a combination of type tests and analyses will be performed on non-Class 1E electrical penetrations located in a harsh environment.	i) A report exists and concludes that the non-Class 1E electrical penetrations identified in Table 2.2.1-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of containment pressure boundary integrity.
	ii) Inspection will be performed of the as-installed non-Class 1E electrical penetrations located in a	ii) A report exists and concludes that the as-installed non-Class 1E electrical penetrations identified in

2. System Based Design Descriptions and ITAAC **AP1000 Design Control Document**

Table 2.2.1-3 (cont.)
Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
	harsh environment.	Table 2.2.1-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.
7. The CNS provides the safety-related function of containment isolation for containment boundary integrity and provides a barrier against the release of fission products to the atmosphere.	i) A containment integrated leak rate test will be performed. ii) Testing will be performed to demonstrate that remotely operated containment isolation valves close within the required response times.	i) The leakage rate from containment for the integrated leak rate test is less than L_a. ii) The containment purge isolation valves (VFS-PL-V003, -V004, -V009, and -V010) close within 20 seconds, SGS valves SGS-PL-V040A/B and SGS-PL-V057A/B are covered in Tier 1 Material, subsection 2.2.4, Table 2.2.4-4 (item 11.b.ii) and all other containment isolation valves close within 60 seconds upon receipt of an actuation signal.