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July 22, 2010

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

Attention: Mr. Jeffery A. Ciocco

Docket No. 52-021
MHI Ref: UAP-HF-10216

Subject: MHI's Responses to US-APWR DCD RAI No. 581-4582

Reference: 1) "Request for Additional Information No. 581-4582 Revision 2, SRP Section: 03.02.01 – Seismic Classification," dated 5/10/2010.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Response to Request for Additional Information No. 581-4582, Revision 2."

Enclosed are the responses to 4 RAIs contained within Reference 1. This transmittal completes the response to this RAI.

Please contact Dr. C. Keith Paulson, Senior Technical Manager, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of this submittal. His contact information is provided below.

Sincerely,

Y. Ogata

Yoshiki Ogata,
General Manager- APWR Promoting Department
Mitsubishi Heavy Industries, LTD.

Enclosure:

1. Response to Request for Additional Information No. 581-4582, Revision 2

CC: J. A. Ciocco
C. K. Paulson

DC81
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Docket No. 52-021
MHI Ref: UAP-HF-10216

Enclosure 1

UAP-HF-10216
Docket No. 52-021

Response to Request for Additional Information No. 581-4582, Revision 2

July, 2010

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

7/21/2010

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.:	**NO. 581-4582 REVISION 2**
SRP SECTION:	**03.02.01 - SEISMIC CLASSIFICATION**
APPLICATION SECTION:	**3.2.1**
DATE OF RAI ISSUE:	**5/10/2010**

QUESTION NO. 03.02.01-15:

RAI 03.02.01-12 requested clarification on the application of safety-related and important to safety in order to meet the requirements of GDC 2. The response to the RAI clarified the seismic classifications of the SSCs and their relationships to safety-related and important to safety SSCs. The response stated that safety-related SSCs are Seismic Category I SSCs (RG 1.29, position C.1) and non safety-related SSCs are either Seismic Category II or non-seismic SSCs (RG 1.29, positions C.2 and C.4). The response also indicated that important to safety SSCs include safety-related SSCs and additional non safety-related SSCs, and referred to Table 3.2-3 in the DCD for the definition of the requirements. The response also indicated that the fire protection systems are designed to RG 1.189 (RG 1.29 position C.5), radioactive waste management systems designed to RG 1.143, and safety related instrumentation sensing lines designed to RG 1.151. The response indicated that no changes were required to Section 3.2.1 of the DCD.

However, the response does not address seismic requirements for risk-significant non safety-related SSCs that are important to safety or include a DCD revision to replace the term "safety-related" with the more comprehensive term "important to safety" in satisfying GDC 2. The guidance in the memo from Denton clarifies that important to safety SSCs that require special treatment are not limited to safety-related SSCs. Supplemental seismic requirements for important to safety SSCs depend on the safety function and the reliability and integrity assumed in the PRA in response to an earthquake. Enclosure 3 to MHI letter dated 7/14/08 and the response to RAI 17.04-19 identify a list of risk-significant SSCs, but it is not clear if seismic requirements are applied to all non safety-related risk-significant SSCs that are considered important to safety. For example, Quality Group D piping in the refueling water storage system is identified as risk-significant, but it is classified as NS (Non-Seismic). Important to safety SSCs are to include not only safety-related SSCs, but also non safety-related SSCs that are risk-significant. The applicant is requested to clarify if all risk-significant non safety related SSCs are classified as Seismic Category I or II such that they are designed to withstand earthquakes consistent with GDC 2. If that is the case, the applicant is requested to identify those non safety-related or risk-significant SSCs that are designed to withstand earthquakes and confirm that the seismic classification is consistent with assumptions used in the PRA. Also, the term "safety-related" should be replaced with the term "important to safety" in DCD 3.2.1 and 3.1.1.2 in order to satisfy GDC 2.

References:

MHI's Response to US-APWR DCD RAI No. 287-2041; MHI Ref: UAP-HF-09244;

Dated May 21, 2009; ML091480481.

MHI's Response to US-APWR DCD RAI No. 150-1635; MHI Ref: UAP-HF-09080; Dated March 10, 2009; ML090710453.

Memorandum from Harold Denton to NRC Staff, dated November 20, 1981, accession numbers 8201200446 and 8201200448.

Additional Information for Design Completion Plan of US-APWR Piping Systems and Components; MHI Ref: UAP-HF-08123; Dated July 14, 2008; not publicly available. Generic Letter 84-01; NRC Use of the Terms, "Important to Safety" and "Safety Related"; dated January 5, 1984; ML031150515.

ANSWER:

MHI understands that NRC requests what seismic design requirements are applied to risk-significant, non-safety related SSCs that are important to safety. And NRC indicates that the DCD Section 3.2 is not clear which seismic requirements are applied to all non-safety related, risk-significant SSCs that are considered important to safety.

The Harold Denton memos and letter, more importantly specify that by GDC 2, SSCs important to safety must be designed to withstand the effects of natural phenomena, like earthquakes, without the loss of the capability to perform their safety functions. For the earthquake, SSCs important to safety need to be designed with specific seismic design requirements. Also, by GDC 1, SSCs important to safety must meet quality standards commensurate with the importance of their safety functions to be performed, including recognized quality codes, standards and design criteria, such as pertinent quality assurance requirements from 10 CFR 50, Appendix B.

DCD Section 17.4 discusses the Design Reliability Assurance Program (D-RAP) and what is considered in designating an SSC to be risk-significant. SSCs are identified as risk-significant based on the performance of importance analyses, seismic margin analysis, PRA results, engineering judgment, operational experience feedback and meetings conducted by the expert panel, and are treated by the D-RAP. DCD Section 17.4 contains Table 17.4-1, which lists risk-significant SSCs. One rationale for risk-significance includes the seismic event (SM); for which possible failure modes include functional failure by seismic hazard (FS) and structural failure by seismic hazard (SS).

Taking these discussions into consideration, the DCD will be revised to state that the non-safety SSCs that are listed in Table 17.4-1 for seismic event (SM) in the column "Rationale" will be categorized as seismic category II and classified as Equipment Class 5.

Impact on DCD

See Attachment 1 and 2 for a mark-up of DCD Tier 2, Section 1.8 and Section 3.2 changes to be incorporated.

- Revise the first and second paragraphs and add the last paragraph in Subsection 3.2.2.5 to read as follows:

"3.2.2.5 Other Equipment Classes

Equipment Class 5

Equipment Class 5 is assigned to non-safety related components that are not part of the RWMS and not within the purview of RG 1.26 (Reference 3.2-13). Equipment Class 5 is also assigned to

components that are listed as "risk-significant, non-safety related" based on the seismic event in Section 17.4. In addition, this equipment class is also assigned to non-safety related structures and structural components, instrumentation, controls, and electrical components.
Equipment Class 5 SSCs are classified NS or seismic category II. Seismic category II SSCs meet the pertinent QA requirements of 10 CFR 50, Appendix B. Codes and standards, as defined in the design bases, are applied to Equipment Class 5 components.

The COL Applicant is to apply DCD methods of equipment classification and seismic categorization of risk-significant non-safety related SSCs based on their safety role assumed in the PRA and treatment by the D-RAP."

- Add the following Combined License Information in Table 1.8-7and subsection 3.2.3 to read as follows.

COL 3.2(6) The COL Applicant is to apply DCD methods of equipment classification and seismic categorization of risk-significant, non-safety related SSCs based on their safety role assumed in the PRA and treatment by the D-RAP

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

7/21/2010

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.:	**NO. 581-4582 REVISION 2**
SRP SECTION:	**03.02.01 - SEISMIC CLASSIFICATION**
APPLICATION SECTION:	**3.2.1**
DATE OF RAI ISSUE:	**5/10/2010**

QUESTION NO. 03.02.01-16:

DCD Subsection 3.2.2, COL 3.2(4) refers only to safety-related systems and components that are to be identified by the COL applicant. The COL applicant should identify all site-specific SSCs including nonsafety-related SSCs that are not included in the DCD. For example, if the applicant adds a non-safety related site-specific SSC that should be seismic category II, than that item should be included in the COLA. Provide additional information to explain how the COL applicant will be required to identify the seismic classification for all site-specific SSCs, including nonsafety-related SSCs.

ANSWER:

DCD Section 3.2 currently includes two(2) related COL Items. COL item COL 3.2(4) refers to the COL Applicant action to identify site-specific, safety-related systems and components that are designed to perform their safety function during and after an SSE and applicable codes and standards for pressure retaining components; and COL Item COL 3.2(5), which refers to the COL Applicant action to identify equipment class and seismic category of the site-specific, safety-related and non-safety related fluid systems and components (including pressure retaining) and equipment as well as applicable industry codes and standards.
MHI understands that the NRC staff requests to have the appropriate and complete equipment class and seismic category information in the COLA for site-specific, safety-related SSCs that are required to function and maintain their structural integrity during and after the SSE; as well as non-safety related SSCs that must retain their pressure retaining capabilities.

Therefore, a new COL Item will be added to ensure the inclusion of the equipment classification and seismic categorization of risk significant, non-safety related SSCs.

Impact on DCD

See Attachment 1 and 2 for a mark-up of DCD Tier 2, Section 1.8 and Section 3.2 changes to be incorporated.

- Revise the first and second paragraphs and add the last paragraph in Subsection 3.2.2.5 to read as follows:

"3.2.2.5 Other Equipment Classes

Equipment Class 5
Equipment Class 5 is assigned to non-safety related components that are not part of the RWMS and not within the purview of RG 1.26 (Reference 3.2-13). Equipment Class 5 is also assigned to components that are listed as "risk-significant, non-safety related" based on the seismic event in Section 17.4. In addition, this equipment class is also assigned to non-safety related structures and structural components, instrumentation, controls, and electrical components.
Equipment Class 5 SSCs are classified NS or seismic category II. Seismic category II SSCs meet the pertinent QA requirements of 10 CFR 50, Appendix B. Codes and standards, as defined in the design bases, are applied to Equipment Class 5 components.

The COL Applicant is to apply DCD methods of equipment classification and seismic categorization of risk-significant non-safety related SSCs based on their safety role assumed in the PRA and treatment by the D-RAP."

- Add the following Combined License Information in Table 1.8-7and subsection 3.2.3 to read as follows.

COL 3.2(6) The COL Applicant is to apply DCD methods of equipment classification and seismic categorization of risk-significant, non-safety related SSCs based on their safety role assumed in the PRA and treatment by the D-RAP

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

7/21/2010

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.:	**NO. 581-4582 REVISION 2**
SRP SECTION:	**03.02.01 - SEISMIC CLASSIFICATION**
APPLICATION SECTION:	**3.2.1**
DATE OF RAI ISSUE:	**5/10/2010**

QUESTION NO. 03.02.01-17:

RAI 03.02.01-5 requested further information regarding the application of risk insights regarding the leak detection system (LDS) for the reactor coolant pressure boundary (RCPB). The response noted the RCBP LDS is not listed in Table 17.4-1 and indicates that the risk significance of SSCs in the LDS was not considered since the system has a small effect on the probability of a large break LOCA. The response clarified that the RCPB LDS, which is non safety-related but has the important function of monitoring RCBP integrity, is designed to be qualified in accordance with RG 1.45. Section 5.2.5 of the DCD provides a discussion of the Leak Monitoring System (LMS). The LMS consists of several "subsystems" focused on the identification of both identified and unidentified leakage from various SSCs. Section 5.2.5.1 states the LMS is designed in accordance with the requirements of GDC 30 and the guidance of R.G. 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems" and R.G. 1.29, "Seismic Design Classification." Section 5.2.5.5 states the LMS has no safety function but the containment airborne particulate radioactivity monitor subsystem of the LMS is Seismic Category I. There are some non-specific seismic qualification statements in section 5.2.5.5 for the containment airborne gaseous radioactivity monitor, the containment air cooler condensate flow rate monitoring subsystem and the containment sump level and flow monitoring subsystem of the LMS. Table 1.9.1-1 of the DCD also indicates that no exceptions to R.G. 1.45 and 1.29 are identified.

Since the response identified that the LMS has no safety function, additional information is needed to (1) describe what criteria of R.G. 1.29 is being met by the LMS design and function, (2) provide additional information regarding the seismic classification of (a) the containment airborne gaseous radioactivity monitor, (b) the containment air cooler condensate flow rate monitoring subsystem and (c) the containment sump level and flow monitoring subsystem with regard to the statement these three subsystems are "qualified for seismic events not requiring a plant shutdown", and (3) clarify how the Seismic Category I classification of the containment airborne particulate radioactivity monitor subsystem satisfies any supplemental design requirements for the high risk significant LMS.

Reference: MHI's Response to US-APWR DCD RAI No. 287-2041; MHI Ref: UAP-HF- 09223; Dated May 8, 2009; ML091320436.

ANSWER:

(1) Describe what criteria of R.G. 1.29 is being met by the LMS design and function,

RG 1.29 Position 1, item k is met by the containment airborne particulate radioactivity monitor subsystem which provides an actuation signal to a system important to safety.

Containment sump level and flow monitoring system, which while not required to perform a safety function, does have Technical Specification limits and surveillance requirements and is qualified for a safe shutdown earthquake. And containment airborne gaseous radioactivity and condensate flow rate from air coolers, which while not required to perform a safety function, do have Technical Specification limits and surveillance requirements and are qualified to perform their intended function following seismic events that do not require plant shutdown.
This exceeds the guidance of Position 2.4 of RG 1.45 which states "At least one of the leakage monitoring systems required by the plant Technical Specifications ... should be capable of performing its function(s) following any seismic event that does not require plant shutdown".

(2) provide additional information regarding the seismic classification of (a) the containment airborne gaseous radioactivity monitor, (b) the containment air cooler condensate flow rate monitoring subsystem and (c) the containment sump level and flow

As noted above and described in DCD Tier 2 Subsections 5.2.5.4.1.1, 5.2.5.4.1.3 and 5.2.5.4.1.4, the containment sump level and flow monitoring system and the containment airborne gaseous radioactivity monitor are qualified for a safe shutdown earthquake, and the containment air cooler condensate flow rate monitoring system is qualified to perform their intended function following seismic events that do not require plant shutdown.
Qualification is in accordance with the program description in DCD Tier 2 Section 3.10 and US-APWR Technical Report MUAP-08015 US-APWR Equipment Qualification Program.

(3) clarify how the Seismic Category I classification of the containment airborne particulate radioactivity monitor subsystem satisfies any supplemental design requirements for the high risk-significant LMS.

The seismic category 1 classification of the containment airborne particulate radioactivity monitor and containment sump level and flow monitoring system satisfy design requirements that supplement and exceed the guidance of RG 1.45. Furthermore, the containment air cooler condensate flow rate monitoring system and containment airborne gaseous radioactivity monitor are designed to perform their function following a seismic event not requiring a shutdown which satisfy design requirements of RG1.45.The former two leak monitoring systems are designed to perform their function with diversity following a safe shutdown earthquake. The latter two leak monitoring systems are designed to perform their function with diversity following a seismic event not requiring a shutdown, These four leak monitoring systems are designed to subject to Technical Specification limits and surveillance, are consistent with the risk significance of the LMS.

Impact on DCD

There is no impact on the DCD.

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

7/21/2010

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.:	**NO. 581-4582 REVISION 2**
SRP SECTION:	**03.02.01 - SEISMIC CLASSIFICATION**
APPLICATION SECTION:	**3.2.1**
DATE OF RAI ISSUE:	**5/10/2010**

QUESTION NO. 03.02.01-18:

The response to RAI 03.02.01-13 clarified that ITAAC are needed for non-seismic Category I SSCs to verify that their failure will not impair safety-related SSCs. DCD 3.2.1.1.2 states that seismic category II applies to SSCs which perform no safety-related function, and whose continued function is not required, but whose structural failure or interaction could degrade the functioning or integrity of a seismic category I SSC to an unacceptable level, or could result in incapacitating injury to occupants of the control room. Seismic category II SSCs are designed so that the SSE could not cause unacceptable structural interaction or failure with seismic category I SSCs. DCD 3.2.1.1.3 also identifies that NS SSCs are primarily located outside of safety-related buildings or segregated from seismic category I SSCs so that the failure of their structural integrity would not impact the seismic category I SSCs and cause adverse system interactions. If it is determined that a SSC would cause an adverse impact on a seismic category I SSC, then it is designed and/or mounted in accordance with seismic category II requirements to withstand an SSE event so that it could not fail and cause an adverse impact or interaction with the seismic category I SSC. Further, DCD 3.7.2.8 identifies that the COL applicant is to assure that the design or location of any site- specific seismic category I SSCs, for example pipe tunnels or duct banks, will not expose those SSCs to possible impact due to the failure or collapse of non-seismic category I structures, or with any other SSCs that could potentially impact, such as heavy haul route loads, transmission towers, non safety-related storage tanks, etc. Alternately, site-specific seismic category I SSCs are designed for impact loads due to postulated failure of the non-seismic category I SSCs. The applicant is requested to clarify which specific ITAAC is used to verify completion of a systems interaction review.

References: MHI's Response to US-APWR DCD RAI No. 287-2041; MHI Ref: UAP-HF-09223; Dated May 8, 2009; ML091320436.

ANSWER:

The US-APWR does not include a generic ITAAC verifying systems interaction between non-safety and safety SSCs. SRP section 14.3.2 recognizes that seismic interactions between safety and non-safety SSCs can not be evaluated until the plant has been constructed. In this case, the COLA would require a description of a process for verifying acceptable seismic interactions between safety and non-safety SSCs. However, SRP section 14.3 identifies that some non-safety SSCs, which are important to safety, are a special case and should have an ITAAC to verify the design of the system. The US-APWR includes the following standard plant ITAAC to

verify the seismic design of non-safety SSCs.

ITAAC #23 in Tier 1 Table 2.2-4 verifies the as-built structures which are identified as seismic category II are designed as seismic category II buildings.

ITAAC #2b in Tier 1 Table 2.7.6.4-2 verifies the as-built light load handling system is designed as a seismic category II SSC.

ITAAC #2a in Tier 1 Table 2.7.6.5-1 verifies the as-built overhead heavy load handling system is designed as a seismic category II SSC.

Refer to the Response to RAI 580-4584 question 03.02.02-15 for more information on ITAAC verifying systems interaction.

Impact on DCD

There is no impact on the DCD.

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.

Attachment 1
US-APWR DCD Chapter 1 Mark-up

Response to RAI No.581-4582 Revision2

RAI No.581-4582

Table 1.8-2 Compilation of All Combined License Applicant Items for Chapters 1-19 (sheet 3 of 44)

COL ITEM NO.	COL ITEM
COL 3.2(4)	*The COL Applicant is to identify the site-specific, safety-related systems and components that are designed to withstand the effects of earthquakes without loss of capability to perform their safety function; and those site-specific, safety-related fluid systems or portions thereof; as well as the applicable industry codes and standards for pressure-retaining components.*
COL 3.2(5)	*The COL Applicant is to identify the equipment class and seismic category of the site-specific, safety-related and non safety-related fluid systems, components (including pressure retaining), and equipment as well as the applicable industry codes and standards.*
COL 3.2(6)	*The COL Applicant is to apply DCD methods of equipment classification and seismic categorization of risk-significant,non-safety related SSCs based on their safety role assumed in the PRA and treatment by the D-0RAP.*
COL 3.3(1)	*The COL Applicant is responsible for verifying the site-specific basic wind speed is enveloped by the determinations in this section.*
COL 3.3(2)	*These requirements also apply to seismic category I structures provided by the COL Applicant. Similarly, it is the responsibility of the COL Applicant to establish the methods for qualification of tornado effects to preclude damage to safety-related SSCs.*
COL 3.3(3)	*It is the responsibility of the COL Applicant to assure that site-specific structures and components not designed for tornado loads will not impact either the function or integrity of adjacent safety-related SSCs, or generate missiles having more severe effects than those discussed in Subsection 3.5.1.4.*
COL 3.3(4)	*The COL Applicant is to provide the wind load design method and importance factor for site-specific category I and category II buildings and structures.*
COL 3.3(5)	*The COL Applicant is to note the vented and unvented requirements of this subsection to the site-specific category I buildings and structures.*
COL 3.4(1)	*The COL Applicant is to address the site-specific design of plant grading and drainage.*

Attachment 2
US-APWR DCD Chapter 3 Mark-up

Response to RAI No.581-4582 Revision2

RAI No.581-4582

RWMS, but are part of systems or portions of systems that contain or may contain radioactive material.

Equipment Class 4 SSCs are classified as NS or seismic category II. The codes and standards for NRC Quality Group D are applied as follows:

• Pressure Vessels	ASME Code, Section VIII, Division 1 (Reference 3.2-19)
• Piping	ASME B31.1 (Reference 3.2-20)
• Pumps	Manufacturers' standards
• Valves	ASME B31.1 (Reference 3.2-20)
• Atmospheric Storage Tanks	API-650 (Reference 3.2-21), AWWA D-100 (Reference 3.2-22), or ASME B96.1 (Reference 3.2-23)
• 0-15 psig Storage Tanks	API-620 (Reference 3.2-24)
• Supports	Manufacturers' standards

3.2.2.5 Other Equipment Classes

Equipment Class 5

Equipment Class 5 is assigned to non-safety related components that are not part of the RWMS and not within the purview of RG 1.26 (Reference 3.2-13). Equipment Class 5 is also assigned to components that are listed as "risk-significant, non-safety related" based on the seismic event in Section 17.4. Inaddition,this equipment class is also assigned to non-safety related structures and structural components, instrumentation, controls, and electrical components.

Equipment Class 5 SSCs are classified NS or seismic Category II. Seismic Category II SSCs meet the pertinent QA requirements of 10 CFR 50, Appendix B. Codes and standards,as defined in the design bases, are applied to Equipment Class 5 components.

The COL Applicant is to apply DCD methods of equipment classification and seismic categorization of risk-significant non-safety related SSCs based on their safety role assumed in the PRA and treatment by the D-RAP."

Equipment Class 6

Equipment Class 6 is assigned to the components of the RWMS and a part of SGBDS which cover outside the containment isolation valves except for class 3 components.

RAI No.581-4582

COL 3.2(5) *The COL Applicant is to identify the equipment class and seismic category of th site-specific, safety-related and non safety-related fluid systems, components (including pressure retaining), and equipment as well as the applicable industry codes and standards.*

COL 3.2(6) *The COL Applicant is to apply DCD methods of equipment classification and seismic categorization of risk-significant, non-safety related SSCs based on their safety role assumed in the PRA and treatment by the D-RAP*

3.2.1 References

3.2-1 Definitions, Domestic Licensing of Production and Utilization Facilities, Energy. Title 10, Code of Federal Regulations, Part 50.2, U.S. Nuclear Regulatory Commission, Washington, DC.

3.2-2 Design Objectives for Equipment to Control Releases of Radioactive Material in Effluents—Nuclear Power Reactors, Domestic Licensing of Production and Utilization Facilities, Energy. Title 10, Code of Federal Regulations, Part 50.34(a)(1), U.S. Nuclear Regulatory Commission, Washington, DC.

3.2-3 Determination of Exclusion area, Low Population Zone, and Population Center Distance, Reactor Site Criteria, Energy. Title 10, Code of Federal Regulations, Part 100.11, U.S. Nuclear Regulatory Commission, Washington, DC.

3.2-4 General Design Criteria for Nuclear Power Plants, Domestic Licensing of Production and Utilization Facilities, Energy. Title 10, Code of Federal Regulations, Part 50, Appendix A, U.S. Nuclear Regulatory Commission, Washington, DC.

3.2-5 Seismic Design Classification. Regulatory Guide 1.29, Rev. 4, U.S. Nuclear Regulatory Commission, Washington, DC, March 2007.

3.2-6 Earthquake Engineering Criteria for Nuclear Power Plants, Domestic Licensing of Production and Utilization Facilities, Energy. Title 10, Code of Federal Regulations, Part 50, Appendix S, U.S. Nuclear Regulatory Commission, Washington, DC.

3.2-7 Geologic and Seismic Siting Criteria, Reactor Site Criteria, Energy. Title 10, Code of Federal Regulations, Part 100.23, U.S. Nuclear Regulatory Commission, Washington, DC.

3.2-8 Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants, Domestic Licensing of Production and Utilization Facilities, Energy. Title 10, Code of Federal Regulations, Part 50, Appendix B.

3.2-9 Instrument Sensing Lines. Regulatory Guide 1.151, U.S. Nuclear Regulatory Commission, Washington, DC, July 1983.