your energy partner®
OPPD
Omaha Public Power District
444 South 16th Street Mall
Omaha, NE 68102-2247

10 CFR 50.90

LIC-15-0020
February 13, 2015

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

Fort Calhoun Station, Unit No. 1
Renewed Facility Operating License No. DPR-40
NRC Docket No. 50-285

References: See Attachment 1, Page 5

Subject: Response to NRC Request for Additional Information RE: License Amendment Request to use ASCM-Developed Floor Response Spectra in the Design and Evaluation of Seismic Class I Structures (TAC No. MF4016)

In Reference 1, the Omaha Public Power District (OPPD) requested an amendment to Renewed Facility Operating License No. DPR-40 for Fort Calhoun Station (FCS), Unit No. 1. Specifically, OPPD requested an amendment to permit the use of seismic floor response spectra in the design and evaluation of seismic Class I structures and structural elements attached to structures. As noted in Reference 1, the NRC had approved these spectra for use in piping, and heating, ventilation, and air conditioning (HVAC) design at Fort Calhoun Station.

The purpose of this submittal is to respond to the NRC Request for Additional Information contained in Reference 2 concerning the proposed amendment. OPPD requested and received approval to provide its submittal by February 13, 2015. The attachment to this letter contains the NRC questions and OPPD's responses thereto.

No regulatory commitments are contained in this submittal.

If you should have any questions regarding this submittal or require additional information, please contact Mr. Bill R. Hansher at (402) 533-6894.

A001
NRR

I declare under penalty of perjury that the foregoing is true and correct. Executed on February 13, 2015.

Louis P. Cortopassi
Site Vice President and CNO

LPC/JWC/mle

Attachments:
1. OPPD Response to NRC Request for Additional Information
2. USAR Appendix F Markups
3. USAR Appendix F Clean Pages

c: M. L. Dapas, NRC Regional Administrator, Region IV
C. F. Lyon, NRC Senior Project Manager
S. M. Schneider, NRC Senior Resident Inspector
Director of Consumer Health Services, Department of Regulation and Licensure, Nebraska Health and Human Services, State of Nebraska

OPPD Response to NRC Request for Additional Information

1. **NRC Question**

Section 2.0 of the LAR states, in part, that

Reference 3.6 as identified in USAR [updated safety analysis report]. Appendix F is engineering analysis EA-FC-94-003, "Alternate Seismic Criteria and Methodologies," Revision 0, which has since been updated and is now Revision 1.

a) Please describe the content of engineering analysis EA-FC-94-003, "Alternate Seismic Criteria and Methodologies," and clarify its association with the information provided to the NRC staff at the time of review of FCS ASCM and preparation of the NRC's safety evaluation dated April 16, 1993.

OPPD Response

Engineering Analysis (EA)-FC-94-003 is an evaluation of the Class I structures at Fort Calhoun Station (FCS) including floor response. The EA was the basis of the amended version of the Alternate Seismic Criteria Methodology (ASCM) submitted for NRC review on July 31, 1992 (Reference 3). Reference 3.6 in USAR Appendix F is to EA-FC-94-003, Revision 1, Attachment 2 for use with safety related piping and heating, ventilation, and air conditioning (HVAC) systems. As described in the reply to NRC Question 1.b) below, Reference 3.6 is updated to show a revision to the EA subsequent to NRC approval in 1993 and specifically identify that Attachment 2 of the EA contains the ASCM spectra approved for use at FCS.

Background

In the late 1980s and early 1990s, the ASCM was developed to take advantage of advances in the area of seismic response and analysis of structures and equipment, in particular piping systems. The original seismic design and analysis of FCS structures and equipment was based on methods and criteria that mostly resulted in excessively conservative designs yet occasionally produced non-conservative results. Therefore, it was desired to produce an alternate seismic design basis that gave more uniform results, which could be used to evaluate existing systems for new concerns, or to design new systems without incurring the high costs associated with excessive conservatism or occasionally producing non-conservative results. To allow its use as an alternative to the original design basis, the amended ASCM was submitted to the NRC for review and approval on July 31, 1992.

Discussion

All inputs to the derivation of the ASCM are referenced in the various reports and calculations that are included as Attachments to EA-FC-94-003. The original design basis seismic ground response spectra (GRS) is used for developing the artificial time history motions input to the structural dynamic analysis.

The questions and answers in the amended ASCM submittal (Reference 3) addressed the characteristics used in the development of the model to ensure that the floor response was accurate and appropriate for safety-related structures, systems, and components (SSC). The NRC approved the amended ASCM as documented in the NRC safety evaluation dated April 16, 1993 (Reference 4).

The purpose of LAR 14-05 is to expand the use of ASCM response spectra developed and endorsed for piping and HVAC systems to other structures and structural elements at FCS. The development of the ASCM response spectra is based on the stiffness and damping of the Class I

structures and it is reasonable to apply this methodology to Class I structures. Applying the ASCM to structural elements attached to the structures is reasonable since the structural elements can be evaluated based on their frequencies to identify appropriate seismic accelerations in horizontal and vertical directions.

b) Please discuss whether the updates to EA-FC-94-003 affect any technical information that was provided to the NRC staff at the time of review of FCS ASCM and preparation of the NRC's safety evaluation dated April 16, 1993.

OPPD Response

Other than a single change in 2010, EA-FC-94-003 has not been revised since the NRC safety evaluation (Reference 4) was issued on April 16, 1993. In 2010, EA-FC-94-003 was revised to address a deficiency related to analysis of the above ground steel structure in the Intake Structure. A modeling error resulted in non-conservative spectra above Elevation 1007'-6". The error did not affect any safety related calculations and was addressed in the Corrective Action Program where the extent of condition was evaluated and appropriate corrective actions taken. The change was to Attachment 2 (ASCM) of EA-FC-94-003 where spectra for the Intake Structure, Elevation 1024'-6" were removed. This change did not affect the conclusions of the NRC safety evaluation (Reference 4).

NRC Question

2. Regarding the proposed revision to the USAR, Section 5.11.3 and Appendix F, Section 2.1.4, included in Attachment 1 to the LAR:

a. No NRC question was provided.

b. Figures F-1 and F-2 shown in Appendix F of the FCS USAR are design basis ground response spectra for FCS. The two proposed alternatives, to determine seismic loading, one using ground response spectra and the other using ASCM floor response spectra are not consistent. In addition, the existing wording of the USAR, Section 5.11.3 refers to Appendix F where FCS seismic criteria are outlined. The proposed revision to Section 5.11.3 of the FCS USAR appears to be redundant.

Please provide a discussion relative to the proposed revision of the FCS USAR, Section 5.11.3 and reconcile the apparent inconsistency between the two proposed alternatives.

OPPD Response

OPPD agrees and hereby withdraws the proposed revision to USAR Section 5.11.3. A revised USAR Appendix F is attached to incorporate additional clarifications. The attached Appendix F revision supersedes the change to Appendix F provided by LAR 14-05 (Reference 1) in its entirety. OPPD proposes to allow ASCM to be applied to structures as an alternative to the existing USAR criteria and methodologies. This proposal is similar to the original license change (Reference 3) where ASCM was approved for safety related piping and heating, ventilation, and air conditioning (HVAC) systems as an alternative to the existing USAR criteria and methodologies. The added text clarifies that methodology used to determine in-structure response spectra in the ASCM also applies for determination of seismic loading for major building elements and that the response spectra are acceptable for structural attachments. The added table of damping values for use with ASCM spectra is from Reference 3.

c. **The proposed revision to Appendix F, Section 2.1.4 of the FCS USAR states that:**

An alternative method of determining the seismic loads for a Class 1 structure and structural elements attached to structures is available using the ASCM floor response spectra provided in Reference 3.6. The maximum "g" value from the curve for the building floor at which the structure is anchored is to be used.

The second sentence "The maximum 'g' value from the curve for the building floor at which the structure is anchored is to be used." is not consistent with the seismic analysis methods for piping and heating, ventilation, and air conditioning systems described in the NRC's staff safety evaluation dated April 16, 1993.

Please provide further discussion and reconcile this apparent inconsistency.

OPPD Response

The change to USAR Appendix F submitted with LAR 14-05 (Reference 1) that refers to the seismic "g" value is specific for applications associated with a static analysis. Seismic analysis would use the entire range of the response spectra to determine resulting stresses. The methodology for piping and HVAC systems approved in 1993 (Reference 4) is discussed in USAR Appendix F. The wording of the proposed change to USAR Appendix F, Section 2.1.4 has been revised to allow the seismic response spectra to be used as inputs to seismic analysis. The change to Section 2.1.4 also clarifies that when response spectra from time history analysis of building structures are applied, frequency limitations for the attached structures, systems, and components are optional. For clarity, the change to Section 2.1.4 is also revised to state that it applies to Class I structures in lieu of the original markup provided with LAR 14-05, which referred to these structures as Class 1. Class I is the correct designation.

NRC Question

3. **The OPPD July 31, 1992, letter to the NRC included FCS, Unit 1 in-structure response spectra (ISRS) for the Auxiliary building, Containment building, and containment internal structures. Specifically, the ASCM ISRS in the vertical direction depicts a pronounced second peak at the frequency range of approximately 12 Hertz to 18 Hertz.**

The design basis vertical floor response spectra for the Reactor and Auxiliary buildings are shown in Figures F-22 through F-27 of Appendix F of the FCS USAR. There are several indications in Appendix F of the FCS USAR that for equipment, piping, and electrical raceways, the spacing of restraints and support system was controlled to maintain the lowest vertical and horizontal natural frequencies of the component equal to or greater than 18 Hertz and 6 Hertz, respectively. Thus, limiting the acceleration used for the analysis to approximately zero period acceleration of the floor response spectra.

OPPD has indicated that the ASCM ISRS repr14esent an updated and a more refined version of the FCS original design basis spectra. Please provide information to reconcile the effects of the ASCM ISRS on the existing Class I systems and components, located in Class I structures.

OPPD Response

ASCM vertical spectra were broadened conservatively at the secondary peak. Broadening was based on soil variability for horizontal motion. The upper alluvium is bridged in the vertical

direction due to piles. Therefore, conditions that affect amplification are better controlled for vertical motion than for horizontal. Best estimate spectra for vertical motion are similar to original design shapes for higher frequencies. Additionally, damping values used for original plant designs were conservative. For welded structures, 1% damping would have been applied. And, for bolted structures, 2% damping would have been used. With 1% damping, USAR Figure F-25 would require a spectral acceleration of about 0.28g for 18 Hz for vertical motion in the Auxiliary Building. Application of the more refined ASCM spectra and considering higher damping of 5% and less conservative broadening, 0.28g is a reasonable vertical spectral acceleration for evaluation of past designs at all elevations of the Auxiliary Building when the component frequency is more than 18 Hz. Additionally, spectral displacement at 18 Hz is very small. For 0.5g, the displacement would be only 0.015 inch and considered non-damaging to well-constructed nuclear plant structures and structural attachments.

In summary, vertical spectra in the ASCM, that result from more refined analyses do not yield results that cause concern for existing designs. However, these spectra do introduce conservatisms that OPPD plans to use for future designs.

References

1. Letter from OPPD (L. P. Cortopassi) to NRC (Document Control Desk), *License Amendment Request (LAR) 14-05; Design and Evaluation of Seismic Class I Structures Using ASCM Developed Floor Response Spectra*, dated April 25, 2014 (ML14118A435) (LIC-14-0036)

2. Letter from NRC (C. F. Lyon) to OPPD (L.P. Cortopassi), *Fort Calhoun Station, Unit No. 1 – Request for Additional Information RE: License Amendment Request to use ASCM-Developed Floor Response Spectra in the Design and Evaluation of Seismic Class I Structures (TAC No. MF4016)*, dated December 22, 2014 (ML14353A051) (NRC-14-0138)

3. Letter from OPPD (W. G. Gates) to NRC (Document Control Desk), "Resolution of Remaining NRC Open Items on Alternate Seismic Criteria and Methodologies (ASCM)," dated July 31, 1992 (LIC-92-016R)

4. Letter from NRC (S. Bloom) to OPPD (T. L. Patterson), "Safety Evaluation of Alternate Seismic Criteria and Methodologies – Fort Calhoun Station (TAC No. M71408)," dated April 16, 1993 (NRC-93-0150)

USAR Appendix F Markups

USAR-APPENDIX F

Classification of Structures and Equipment and Seismic Criteria

Rev 10

Safety Classification: Safety

Usage Level: Information

Change No.:	
Reason for Change:	
Preparer:	
Issued:	

Fort Calhoun Station

Piping runs are designed with sufficient flexibility to accept differential movement between structures without exceeding the allowable stress criteria presented in Table F-1. However, the containment and auxiliary building are on a common mat and, therefore, movement between these structures is not significant in contributing to piping stress levels. Estimates of these displacements are available in Reference 6. In addition, seismic anchor motion (SAM) displacements between the Auxiliary Building and the Turbine Building, which are significant were calculated. These displacements can be used for analysis of piping, such as Main Steam and Main Feedwater, which pass between the two structures. (Reference 6)

2.1.3 Damping Factors

Damping factors used in the design of Class I components and structures are shown in Table F-2A and Table F-2B. Table F-2A applies to spectra from Figures F-12 through F-21 or normalized spectra from application of Figures F-28 and F-29 to the ground response spectra in Figures F-1 and F-2. Table F-2B applies to spectra from Reference 3.6. ~~Alternatively, the damping factors of Reference 6 may be used, provided the analysis is performed in accordance with the caveats, requirements, and methods described for the ASCM.~~ Another alternative which may be used for mechanical and electrical equipment is to use the damping factors in GIP-3 (Reference 13), provided the evaluation is performed in accordance with the caveats, requirements and methods described ~~in Reference 11. See~~ Section F.2.2.2 for a discussion of the use and limitations of GIP-3.

Table F-2A Damping Factors for use with Figures in Appendix F

Component or Structure	Percent Damping: Design Earthquake	Percent Damping: Maximum Hypothetical Earthquake
Containment Structure	2.0	2.0
Concrete Support Structures for Reactor Vessel and Steam Generators	2.0	2.0
Steel Assemblies		
Bolted or Riveted	2.0	2.0
Welded	1.0	1.0
Vital Piping Systems	0.5	0.5
Rigid Vault Type Concrete Structures	2.0	5.0
Framed Concrete Structures	5.0	7.0

Table F-2B – Damping Factors for use with ASCM spectra

Component or Structure	Percent Damping: Operating Basis Earthquake	Percent Damping: Safe Shutdown Earthquake
Equipment and large-diameter piping Systems, pipe diameter greater than 12 inches	2.0	3.0
Small-diameter piping systems, diameter equal to or less than 12 inches	1.0	2.0
Welded steel structures	2.0	4.0
Bolted steel structures	4.0	7.0
Prestressed concrete structures	2.0	5.0
Reinforced concrete structures	4.0	7.0

2.1.4 Response Curves

Response curves are shown in Figures F-1 and F-2 for the design and maximum hypothetical earthquakes respectively and were used for the design of Class I components and structures.

The response spectrum concept provides a conservative approach which has been found generally to be satisfactory for other sites with similar sub-surface conditions. The spectra conform to the average spectra developed by Housner (and presented in Reference 1) for frequencies higher than about 0.33 cycles per second. The spectra for frequencies lower than about 0.33 cycles per second were prepared utilizing data presented by Newmark (Reference 2).

The spectra have been 'normalized' to a horizontal ground acceleration of eight percent of gravity ~~for the design earthquake~~ and seventeen percent of gravity ~~for the~~ maximum hypothetical earthquake.

An alternative for determining the seismic loads of Class I structures and structural elements attached to structures is available using the methodology applied for development of ASCM floor response spectra provided in Reference 3.6. The original design basis seismic ground response spectra (GRS) were used for developing the artificial time history motions input to the structural dynamic analysis.

When response spectra from time history analysis of building structures are applied, frequency limitations for the attached structures, systems and components are optional.

2.1.5 Refueling ~~Equipment~~

All refueling equipment (including refueling pool crane) is designed for a seismic loading of .09g vertical and .19g horizontal applied simultaneously. The stress under the combined deadweight live and seismic loads will not exceed the allowable stress of the material. Furthermore, the equipment will withstand a simultaneous vertical acceleration of .13g and a horizontal acceleration of .27g in conjunction with normal loads without exceeding material minimum yield stresses. Guide rollers restrict lateral movement of the refueling machine and the spent fuel handling machine on their rails and have been designed for seismic loads in excess of the above values. In addition, because of its high center of gravity, the spent fuel handling machine is provided with keepers to prevent overturning under seismic shock conditions.

3.0 APPENDIX F REFERENCES

3.1 Nuclear Reactors and Earthquakes, TID-7024, Division of Licensing and Regulation, AEC, Washington, D.C., August, 1963

3.2 Design Criteria for Nuclear Reactors Subjected to Earthquake Hazards, Newmark, N. M., Department of Civil Engineering, University of Illinois, (paper presented in Tokyo, 1968)

3.3 IBM Application Program, H20-0282-1 1130 Continuous System Modeling Program, (1130-CX-13X), Program Reference Manual

3.4 Report to AEC Regulatory Staff, Adequacy of the Structural Criteria for Fort Calhoun Station - Unit No. 1, Omaha Public Power District (Docket No. 50-285), by N. M. Newmark, W. J. Hall and A. J. Hendron, January 12, 1968

3.5 USNRC Safety Evaluation Report of Alternate Seismic Criteria and Methodologies- Fort Calhoun Station, April 16, 1993, TAC No. M71408 (NRC-93-0150)

3.6 EA-FC-94-003, Alternate Seismic Criteria and Methodologies, Rev. ~~01~~ 01, Attachment 2

3.7 USNRC Safety Evaluation Report, Fort Calhoun Station Unit No. 1 - Request for Relief from Modifying Pipe Supports SIS-63/65, SIH-3 and RCH-13 (TAC-No. M95547), OPPD Tracking No. NRC-96-188

3.8 Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Power Plant Equipment, Revision 2, Corrected 02/14/98, Seismic Qualification Utility Group (SQUG), February 1992

3.9 NRC letter to SQUG Members dated May 22, 1992, Supplemental No. 1 to Generic Letter 87-02 transmitting Supplemental Safety Evaluation Report No. 2 (SSER No. 2) on SQUG Generic Implementation Procedure, Revision 2, Corrected February 14, 1992 (GIP-2)

3.10 SQUG Letter to NRC dated August 21, 1992, SQUG Response to Generic Letter 87-02, Supplement 1 and Supplementary Safety Evaluation Report No. 2 on the SQUG GIP

3.11 EA-FC-93-085, NRC USQ A-46 and Seismic IPEEE Resolution

3.12 NRC Letter to OPPD dated July 30, 1998, Fort Calhoun Station, Unit No. 1 - Closeout of Unresolved Safety Issue A-46 (TAC No. M69447), OPPD Tracking No. NRC-98-129

USAR Appendix F Clean Pages

USAR-APPENDIX F

Classification of Structures and Equipment and Seismic Criteria

Rev 10

Safety Classification: Safety

Usage Level: Information

Change No.:	
Reason for Change:	
Preparer:	
Issued:	

Fort Calhoun Station

Piping runs are designed with sufficient flexibility to accept differential movement between structures without exceeding the allowable stress criteria presented in Table F-1. However, the containment and auxiliary building are on a common mat and, therefore, movement between these structures is not significant in contributing to piping stress levels. Estimates of these displacements are available in Reference 6. In addition, seismic anchor motion (SAM) displacements between the Auxiliary Building and the Turbine Building, which are significant were calculated. These displacements can be used for analysis of piping, such as Main Steam and Main Feedwater, which pass between the two structures. (Reference 6)

2.1.3 Damping Factors

Damping factors used in the design of Class I components and structures are shown in Table F-2A and Table F-2B. Table F-2A applies to spectra from Figures F-12 through F-21 or normalized spectra from application of Figures F-28 and F-29 to the ground response spectra in Figures F-1 and F-2. Table F-2B applies to spectra from Reference 3.6. Another alternative which may be used for mechanical and electrical equipment is to use the damping factors in GIP-3 (Reference 13), provided the evaluation is performed in accordance with the caveats, requirements and methods described in Reference 11. See Section F.2.2.2 for a discussion of the use and limitations of GIP-3.

Table F-2A - Damping Factors for use with Figures in Appendix F

Component or Structure	Percent Damping: Design Earthquake	Percent Damping: Maximum Hypothetical Earthquake
Containment Structure	2.0	2.0
Concrete Support Structures for Reactor Vessel and Steam Generators	2.0	2.0
Steel Assemblies		
Bolted or Riveted	2.0	2.0
Welded	1.0	1.0
Vital Piping Systems	0.5	0.5
Rigid Vault Type Concrete Structures	2.0	5.0
Framed Concrete Structures	5.0	7.0

Table F-2B – Damping Factors for use with ASCM spectra

Component or Structure	Percent Damping: Operating Basis Earthquake	Percent Damping: Safe Shutdown Earthquake
Equipment and large-diameter piping Systems, pipe diameter greater than 12 inches	2.0	3.0
Small-diameter piping systems, diameter equal to or less than 12 inches	1.0	2.0
Welded steel structures	2.0	4.0
Bolted steel structures	4.0	7.0
Prestressed concrete structures	2.0	5.0
Reinforced concrete structures	4.0	7.0

2.1.4 Response Curves

Response curves are shown in Figures F-1 and F-2 for the design and maximum hypothetical earthquakes respectively and were used for the design of Class I components and structures.

The response spectrum concept provides a conservative approach which has been found generally to be satisfactory for other sites with similar sub-surface conditions. The spectra conform to the average spectra developed by Housner (and presented in Reference 1) for frequencies higher than about 0.33 cycles per second. The spectra for frequencies lower than about 0.33 cycles per second were prepared utilizing data presented by Newmark (Reference 2).

The spectra have been 'normalized' to a horizontal ground acceleration of eight percent of gravity for the design earthquake and seventeen percent of gravity for the maximum hypothetical earthquake.

An alternative for determining the seismic loads of Class I structures and structural elements attached to structures is available using the methodology applied for development of ASCM floor response spectra provided in Reference 3.6. The original design basis seismic ground response spectra (GRS) were used for developing the artificial time history motions input to the structural dynamic analysis.

When response spectra from time history analysis of building structures are applied, frequency limitations for the attached structures, systems and components are optional.

2.1.5 Refueling Equipment

All refueling equipment (including refueling pool crane) is designed for a seismic loading of .09g vertical and .19g horizontal applied simultaneously. The stress under the combined deadweight live and seismic loads will not exceed the allowable stress of the material. Furthermore, the equipment will withstand a simultaneous vertical acceleration of .13g and a horizontal acceleration of .27g in conjunction with normal loads without exceeding material minimum yield stresses. Guide rollers restrict lateral movement of the refueling machine and the spent fuel handling machine on their rails and have been designed for seismic loads in excess of the above values. In addition, because of its high center of gravity, the spent fuel handling machine is provided with keepers to prevent overturning under seismic shock conditions.

3.0 APPENDIX F REFERENCES

3.1 Nuclear Reactors and Earthquakes, TID-7024, Division of Licensing and Regulation, AEC, Washington, D.C., August, 1963

3.2 Design Criteria for Nuclear Reactors Subjected to Earthquake Hazards, Newmark, N. M., Department of Civil Engineering, University of Illinois, (paper presented in Tokyo, 1968)

3.3 IBM Application Program, H20-0282-1 1130 Continuous System Modeling Program, (1130-CX-13X), Program Reference Manual

3.4 Report to AEC Regulatory Staff, Adequacy of the Structural Criteria for Fort Calhoun Station - Unit No. 1, Omaha Public Power District (Docket No. 50-285), by N. M. Newmark, W. J. Hall and A. J. Hendron, January 12, 1968

3.5 USNRC Safety Evaluation Report of Alternate Seismic Criteria and Methodologies- Fort Calhoun Station, April 16, 1993, TAC No. M71408 (NRC-93-0150)

3.6 EA-FC-94-003, Alternate Seismic Criteria and Methodologies, Rev. 1, Attachment 2

3.7 USNRC Safety Evaluation Report, Fort Calhoun Station Unit No. 1 - Request for Relief from Modifying Pipe Supports SIS-63/65, SIH-3 and RCH-13 (TAC-No. M95547), OPPD Tracking No. NRC-96-188

3.8 Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Power Plant Equipment, Revision 2, Corrected 02/14/98, Seismic Qualification Utility Group (SQUG), February 1992

3.9 NRC letter to SQUG Members dated May 22, 1992, Supplemental No. 1 to Generic Letter 87-02 transmitting Supplemental Safety Evaluation Report No. 2 (SSER No. 2) on SQUG Generic Implementation Procedure, Revision 2, Corrected February 14, 1992 (GIP-2)

3.10 SQUG Letter to NRC dated August 21, 1992, SQUG Response to Generic Letter 87-02, Supplement 1 and Supplementary Safety Evaluation Report No. 2 on the SQUG GIP

3.11 EA-FC-93-085, NRC USQ A-46 and Seismic IPEEE Resolution

3.12 NRC Letter to OPPD dated July 30, 1998, Fort Calhoun Station, Unit No. 1 - Closeout of Unresolved Safety Issue A-46 (TAC No. M69447), OPPD Tracking No. NRC-98-129