From: Ghosh, Amitava
Sent: Thu, 23 Apr 2020 21:22:27 +0000
To: Colaccino, Joseph
Cc: Patel, Pravin
Subject: Management Briefing DEX 4-23-20 Revised Clean
Attachments: Management Briefing DEX 4-23-20 Revised.docx

Hi Joe.

Here is a clean copy. Thanks a lot for everything.

Amit

LAR 20-001, Seismic GAP Between Annex Building and Nuclear Island, Vogtle 3

Background: SNC submitted LAR 20-001 to revise the seismic gap in ITAAC (No. 819, 3.3.0013), Tier 2 and Tier 2* of the license and UFSAR. The proposed gap will be revised from 3" to 2 1/6" between the Annex Building and Nuclear Island (NI) in the North–South direction above-grade El 141' to El 154'. In a previous LAR, the seismic gap between these building was reduced from 4" to 3".

Issues:

- A margin of 1/16" between a Cat I structure (NI) and a non-safety structure (Annex Building) in the North-South direction can reduce further due to continued settlement.
- There is no settlement data between these two structures in the North-South direction and the predicted settlement is significantly different that what has been observed in the licensee document.

Regulatory Bases:

10 CFR Part 50 Appendix A, GDC 2 "Design Bases for Protection Against Natural Phenomena" and GDC 4 "Environmental and Dynamic Effects Design Bases"

SRP 3.7.2 Section I.8 "Interaction of Seismic Cat 1 structure with Non-seismic Structures"

10 CFR Part 52 Appendix D, VIII "Processes for Changes and Departures"

Safety Significance: The seismic gap between Cat 1 and Cat II (Annex Building) structure is small. Potential Safety significance occurs if the gap between Cat 1 and Cat II closes to zero because there is no analysis presented showing that a zero gap will not affect the structural integrity of the CAT I structure by the Licensee.

Staff Review Activities:

While reviewing the LAR, the ESEA staff noted that the margin is extremely small (only 1/16") and decided to audit the SNC documents in the ERR. The staff had two clarification calls to further understand the data provided by SNC.

The staff used information in the ERR to develop their settlement curves (see graph) to characterize the trend in the settlement between the nuclear island and the annex building. Based on these data, the staff concluded that (b)(4)
(b)(4)
(b)(4) . Therefore, the staff has another issue of using the predicted settlement to assess the seismic gap during Safe Shutdown Earthquake (SSE).

Path Forward: SNC needs either (1) to provide a realistically predicted settlement affecting the seismic gap in the North-South direction from the remaining loadings of the completed structures or (2) to address that the zero gap is acceptable based on an analysis demonstrating that a Cat II structure (Annex Building) will not affect the structural integrity of the Cat 1 Nuclear Island during an SSE.

References:

[1] Westinghouse Electric Company, LLC. 2019. E&DCR No. APP-1000-GEF-250, Rev. 0.

[2] P.C. Rizzo Associates, Inc. 2014. Settlement Re-Analysis of the AP1000 Buildings with Consideration to Construction Sequence Vogtle Units 3 and 4. APP-G9-GEF-005, Rev. 5.

(b)(3):16 U.S.C §824o-1(d), (b)(4), (b)(7)(F)

(b)(4)

From: Ghosh, Amitava
Sent: Thu, 23 Apr 2020 21:10:22 +0000
To: Colaccino, Joseph
Cc: Patel, Pravin
Subject: Management Briefing DEX 4-23-20 Revised2
Attachments: Management Briefing DEX 4-23-20 Revised.docx

Good evening Joe.

Here is my revised version. Please comment.

Thanks,

Amit

LAR 20-001, Seismic GAP Between Annex Building and Nuclear Island, Vogtle 3

IssuesBackground: SNC submitted LAR 20-001 to revise the seismic gap in ITAAC (No. 819, 3.3.0013), Tier 2 and Tier 2* of the license and UFSAR. The proposed gap will be revised from 3" to 2 1/6" between the Annex Building and Nuclear Island (NI) in the North–South direction above-grade El 141' to El 154'. In a previous LAR, the seismic gap between these building was reduced from 4" to 3".

Issues:

- A margin of 1/16" between a Cat I structure (NI) and a non-safety structure (Annex Building) in the North-South direction can reduce further due to continued settlement.
- There is no settlement data between these two structures in the North-South direction and the predicted settlement is significantly different that what has been observed in the licensee document.

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Staff Review Activities:

While reviewing the LAR, the ESEA staff noted that the margin is extremely small (only 1/16") and decided to audit the SNC documents in the ERR. The staff had two clarification calls~~, but the staff could not determine the seismic gap predicted in future.~~ to further understand the data provided by SNC.

The staff used information in the ERR to develop their settlement curves (see graph) to characterize the trend in the settlement between the nuclear island and the annex building. Based on these data, t~~Additionally, t~~he staff ~~noted~~ concluded that (b)(4)

(b)(4)

Commented [CJ1]: The issue section should specify the issues with the current LAR review.

Commented [GA2R2]: Text added as suggested.

Commented [CJ3]: Move reg basis and safety significance above staff review while maintaining same order.

Commented [GA4R4]: Text moved.

Commented [CJ5]: See above.

Commented [GA6R6]: Text moved.

Commented [CJ7]: Include in the issue section the significance of this small margin.

Commented [GA8R8]: Text added as suggested.

Commented [CJ9]: I think a more expanded reference to this nonconformance report is necessary.

Commented [GA10R10]: Added references on Page 2.

(b)(4) Therefore, the staff has another issue of using the predicted settlement to assess the seismic gap during Safe Shutdown Earthquake (SSE).

Regulatory Bases:

10 CFR Part 50 Appendix A, GDC 2 "Design Bases for Protection Against Natural Phenomena" and GDC 4 "Environmental and Dynamic Effects Design Bases"

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Path Forward: SNC needs either (1) to provide a realistically predicted settlement affecting the seismic gap in the North-South direction from the remaining loadings of the completed structures or (2) to address that the zero gap is acceptable based on an analysis demonstrating that a Cat II structure (Annex Building) will not affect the structural integrity of the Cat 1 Nuclear Island during an SSE.

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[2] P.C. Rizzo Associates, Inc. 2014. Settlement Re-Analysis of the AP1000 Buildings with Consideration to Construction Sequence Vogtle Units 3 and 4. APP-G9-GEF-005, Rev. 5.

Commented [CJ11]: This issue is not discussed above in the issue section.

Commented [GA12R12]: Text added in the Issue section

Commented [CJ13]: Move reg basis and safety significance above staff review while maintaining same order.

Commented [CJ14]: See above.

Commented [CJ15]: This is not a sufficient path forward. What I want to see is what SNC needs to do to provide information that justifies having a gap on 2 1/16 inch. We have not described that.

Commented [GA16R16]: Text modified to address the path forward.

(b)(3):16 U.S.C §824o-1(d), (b)(4), (b)(7)(F)

(b)(4)