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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
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South Texas Project
Units 3 and 4
Docket Nos. 52-012 and 52-013
Response to Request for Additional Information

Attached is the Nuclear Innovation North America, LLC (NINA) response to the NRC staff question in Request for Additional Information (RAI) letter number 435 related to SRP Section 1.05. The attachment to this letter contains the response to the following RAI question:

01.05-21

There are no COLA changes in this submittal.

There are no commitments in this submittal.

If you have any questions, please contact me at (979) 316-3011 or Bill Mookhoek at (979) 316-3014.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 8/15/13

Scott Head
Manager, Regulatory Affairs
NINA STP Units 3&4

Attachment:

RAI 01.05-21

DO91
NRC

STI 33741309

(paper copy)

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RAI 01.05-21

Question**01.05-21**

In regards to the response to RAI 01.05-5, the staff reviewed the applicant's response and determined that the response is insufficient to completely address the staff's concerns. The NRC staff needs sufficient information in order to reach a safety conclusion within the COLA review. The applicant should address the specific provisions in Interim Staff Guidance (ISG) JLD-ISG-2012-01, "Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," (ML12229A174), dated August 29, 2012 that endorses the Nuclear Energy Institute (NEI) 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide". The ISG provides an acceptable method for satisfying Order EA-12-049. As stated in the ISG, other methods may be used to satisfy Order EA-12-049, but these methods will be reviewed by the NRC staff on a case-by-case basis to determine their acceptability. If the applicant proposes to use methods that differ from those in the ISG and endorsed guidance, the applicant should explain why these alternative methods are acceptable.

In response to RAI 422, Question 01.05-5, the applicant submitted "STP 3&4 ABWR FLEX Integrated Plan" to address issues related to Fukushima Near-Term Task Force (NTTF) Recommendation 4.2, "Mitigation". On page 3 of 60 of the FLEX Plan, the first paragraph states: "At STP 3&4, the 20 MWe CTGs are housed in structures which protect them from design floods and site severe weather events.... Although the CTGs are not specifically protected from wind generated missiles, at STP 3&4, the CTGs are located in the Turbine Buildings separated by approximately 900 feet and failure of both due to wind generated missiles is considered to be extremely unlikely. ..."

In the cited paragraph above, the applicant indicates that the Turbine Buildings (TBs) will house Combustion Turbine Generators (CTGs) and protect them from design floods and site severe weather events. It also states that the CTGs are located in the TBs separated by approximately 900 feet and failure of both due to wind generated missiles is considered to be extremely unlikely.

In Chapter 3 of STP 3&4 FSAR (Revision 9), Table 3H.9-1 indicates that only the lateral load resisting system of the TBs will be evaluated against stability and II/I interactions under the effects of extreme environmental conditions including earthquake, tornado and tornado missiles, hurricane and hurricane missiles, and flood. The Table also indicates that the TBs (except for the lateral load resisting system) are not designed against tornado and tornado missiles, hurricane and hurricane missiles, or flood (page 3H-242). Although the likelihood of the simultaneous failure of both CTGs located in the TBs due to tornado- or hurricane generated missiles is low, the CTGs in the TBs are potentially vulnerable to the wind effects of tornado and hurricane.

RAI 01.05-21

The staff requests that the applicant clarify how the statements cited above from the FLEX plan can be reconciled with the information presented in Table 3H.9-1 of the FSAR. Specifically, the applicant is requested to clearly describe in the FLEX plan and updated FSAR how the CTGs located in the TBs are protected against the effects of tornado, hurricane, and flood.

Response

The discussion below is provided to clarify the statements made in the plan relative to CTG protection and the information contained in FSAR Table 3H.9-1.

FSAR 1C.2.2.2 (Specific SBO Design Basis) states that the CTG will be housed in an International Building Code (IBC) structure which is protected from adverse site weather related conditions.

DCD 1C.2.5.10 (CTG- Physical Protection Considerations) states that “[t]he CTG is housed in a building (separate from the building which contains the DGs) above the design flood levels. The building is designed to protect the CTG from site related weather conditions.”

FSAR 3.7.2.8 (Interaction of Non-Seismic Category I Structures, Systems and Components with Seismic Category I Structures, Systems and Components) states that the overall design of non-Category I structures is based on IBC-2006. However, the lateral load resisting system is designed to remain elastic under the extreme environmental loads shown in Table 3H.9-1 using the same loads, load combinations and design codes (i.e. ACI 349 and AISC N690) as those for the adjacent Category I structure. Table 3H.9-1 does not address equipment in the turbine building.

As stated above, Table 3H.9-1 documents that the turbine building will remain elastic under design basis extreme weather conditions. This does not mean that the equipment in the turbine building is necessarily protected from extreme weather conditions; nonetheless, the CTG structures in the turbine building will be designed to withstand site related weather events and will be installed above design flood levels, as required by the DCD. Additionally, although not specifically designed against wind generated missiles, the fact that the two CTGs are separated by approximately 900 feet makes it extremely unlikely that both would be damaged during a single event.

In summary, the statements in Table 3H.9-1 are correct, do not conflict with the statements regarding the CTG protection requirements in the FLEX plan and in other places in the COLA, and therefore do not require reconciliation. There are no COL items related to the CTG protection requirements, and the DCD does not prescribe specific methods for achieving the CTG protection requirements. Furthermore, the present state of the design on STP 3&4 has not progressed to the point that the details of the CTG protection have been finalized. These details are not required to be in the FSAR nor should they be included in the STP 3 & 4 ABWR FLEX Integrated Plan.