Attachment 16
NRC3-13-0036

Supplemental Response to RAI Letter No. 70
(eRAI Tracking No. 6245)
(3 pages)

RAI Question No. 03.08.05-3

NRC RAI 03.08.05-3

In the stability evaluations described in EF3 FSAR Section 3.8.5.5.1, as modified by the markups included with the response to RAI Letter 55 Question 02.05.04-38, it is assumed that the RB/FB and CB are partially embedded in rock, ignoring the backfill. Therefore, it is assumed that seismic base shears and overturning moments are transferred from each structure to the rock by a combination of friction and bearing pressure at the various foundation-rock interfaces.

EF3 FSAR Figure 2.5.4-202, as modified by the markups included with the response to RAI Letter 55 Question 02.05.04-38, indicates that stiff concrete fill is placed in the bottom portion of the gap between the RB/FB and CB, up to elevation 552 ft approximately. The applicant is requested to explain how the seismic load (in the E-W direction) imposed by the CB bearing against the concrete fill is transferred to the underlying rock. Is base friction sufficient to resist the entire load or will a certain fraction of this load be transferred to the adjacent RB/FB? Has this been considered in the design?

The above questions are also appropriate to the potential transfer of seismic loads from the RB/FB to the CB through the concrete fill.

Supplemental Response

The response to this RAI was provided in DTE letter NRC3-12-0007, March 1, 2012 (ML12065A194).

The previous response identified four parts to this RAI as follows:

Part 1 - Explain how the seismic load (in the E-W direction) imposed by the CB bearing against the concrete fill is transferred to the underlying rock.

Part 2 - Is base friction sufficient to resist the entire load or will a certain fraction of this load be transferred to the adjacent RB/FB?

Part 3 - Has this been considered in the design?

Part 4 - The above questions are also appropriate to the potential transfer of seismic loads from the RB/FB to the CB through the concrete fill.

The revised response to this RAI was provided in DTE letter NRC3-13-0032, September 12, 2013 (ML 13259A244). It replaced the previous response to all four parts of this RAI.

This response replaces the previous response in DTE letter NRC-13-0032 to all four parts of this RAI, as provided below.

The stability evaluations of RB/FB and CB are detailed in Sargent & Lundy Report SL-012018, Revision 1 (Attachment 18). In Sargent & Lundy Report SL-012018 it is shown that, with the exception of CB Licensing Basis case (i.e., with no engineered backfill), both the CB and RB/FB are stable against sliding using only the available friction force at the bottom of their respective basemats. For CB with no engineered backfill, in addition to the base friction, lateral bearing resistance along the CB foundation sides by the in-situ rock or concrete fill between the CB and RB/FB is required to meet the minimum required sliding safety factor of 1.10. The concrete fill between the CB and the RB/FB is capable

of providing the required lateral bearing resistance through the friction between the bottom of the concrete fill and the top of the in-situ rock below. The in-situ Bass Islands Group bedrock is also found capable of providing the required lateral bearing resistance.

Therefore, the transfer of seismic loads from one building to the other building through the fill concrete is not required to be considered in the design.

Proposed COLA Revision

Refer to Attachment 10