



Attachment:

1. Supplemental Information Related to GL 2004-02

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**ATTACHMENT**

**SUPPLEMENTAL INFORMATION RELATED TO GL 2004-02**

**DOMINION NUCLEAR CONNECTICUT, INC.  
MILLSTONE POWER STATION UNIT 3**

In a teleconference with the Nuclear Regulatory Commission (NRC) on May 17, 2017, Dominion Nuclear Connecticut, Inc. (DNC) provided clarifying information related to our response to Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors," for Millstone Power Station Unit 3 (MPS3). Specifically, the NRC asked for a brief summary of the differences in strainer head loss tests M3-2 and M3-6 conducted in 2006 and predicted strainer submergence levels following a loss of coolant accident (LOCA). This attachment provides DNC's response to the NRC's questions and supplements the information provided in previous GL 2004-02 correspondence.

### **Supplemental Information - Differences in Strainer Head Loss Tests M3-2 and M3-6**

Strainer head loss Tests M3-2 and M3-6 were essentially identical except for the dates the tests were performed and strainer fin pitch. Test M3-2 was performed in early in September 2006 and M3-6 was performed in late September 2006. Both tests used Ottawa River water and were affected by biological activity, but the tests performed in late September and in October (Tests M3-6 to M3-10) exhibited elevated head losses due to excessive biological growth and/or formation of air bubbles within the debris bed and test module. Because of the excessive biological activity associated with Tests M3-6 to M3-10, the results of these tests were not used for determining the appropriate strainer area. This information was addressed in the MPS3 RAI 6, Issue 3a response in a letter to NRC dated December 20, 2010 (ML103620562) and the Millstone 3 Reduced-Scale Test Report MIL3-34325-TR-001.

Strainer head loss Tests M3-6 and M3-8 had the same strainer area but different fin pitch. The results of these tests were used in confirming that fin pitch has little effect on thin-bed head loss. Tests M3-7, M3-9, and M3-10 had the same fin pitch but different strainer areas. Test M3-8 had a different fin pitch and strainer area than Tests M3-7, M3-9 and M3-10. However, since fin pitch has little effect on thin-bed head loss, the results of Tests M3-7 to M3-10 were used in confirming that head loss decreases with increasing strainer area.

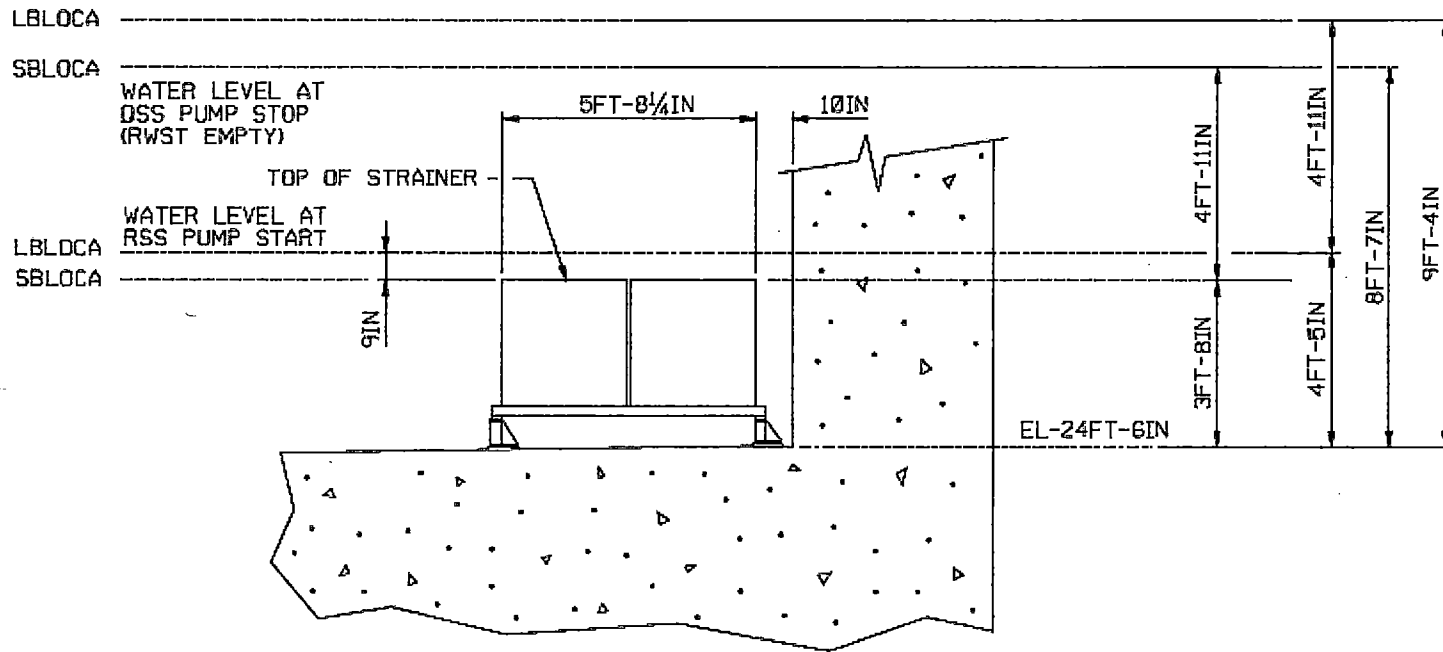
### **Supplemental Information – Predicted strainer submergence levels following a LOCA**

During review of previous MPS3 GL 2004-02 correspondence, DNC determined that information related to the strainer submergence levels was unclear and the submergence levels were not consistently measured from the containment floor.

The sketch below is provided to clarify the predicted strainer submergence levels following a small break LOCA (SBLOCA) and a large break LOCA (LBLOCA). The difference in water levels for the SBLOCA and the LBLOCA is due to addition of reactor coolant system and accumulator water during the LBLOCA. For both

scenarios, water level is depicted when the Recirculation Spray System (RSS) pumps start, and when the Refueling Water Storage Tank (RWST) is empty. The water levels are measured from the containment floor.

The water levels shown in the sketch are updated from those provided in the previous DNC letters dated February 29, 2008, March 13, 2009, and September 16, 2010, due to a revised Analysis of Record (AOR) performed in 2014. The revised AOR was a result of implementation of a design change that 1) replaced the RWST level switches with level switches having less uncertainty, 2) increased the RWST maximum temperature, and 3) increased service water intake temperature.



SECTION B-B

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