

## Response to SDAA Audit Question

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**Question Number:** A-3.9.2-18

**Receipt Date:** 08/28/2023

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**Question:**

This request is a follow-on from audit item (1) of A-3.9.2-10: Identify any of the sensors in the three proposed options capable of detecting cavitation in and around the SGIFRs during reverse flow while operating at DWO conditions nominally below 20% maximum power.

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**Response:**

The purpose of the Comprehensive Vibration Assessment Program (CVAP) initial startup instrumentation is to detect destructive levels of flow-induced vibration (FIV) from known and unknown sources. {{

}}<sup>2(a),(c)</sup> The purpose of the sensors below the SG is to monitor the steam generator primary coolant flow path for FIV and the downcomer for unknown or unanticipated vibration sources.

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}}<sup>2(a),(c)</sup>

Cavitation is a known phenomenon that is analyzed in {{ }}<sup>2(a),(c)</sup>

The analysis shows that cavitation is precluded for a wide range of conditions that could exist during density wave oscillations. For conditions where cavitation is not precluded by analysis, a set of conservative assumptions are used to estimate the possible cavitation erosion effects on tube wall thickness. Due to the conservative assumptions and resulting margins, the CVAP sensors are not benchmarked for the specific purpose of detecting cavitation. However, the broad scope and capabilities of the CVAP startup instrumentation plan may allow cavitation to be detected, if it were to occur.

The CVAP measurement program is supplemented by the inspection program described in {{

}}<sup>2(a),(c)</sup> One of the objectives of inspecting these surfaces is to look at interfaces for evidence of wear, distress, or abnormal corrosion potentially caused by cavitation.

No changes to the SDAA are necessary.