Attachment 1

Open Item 3.5: STPNOC needs to provide sufficient risk-informed justification for application of the categorization process to passive functions (i.e., structural integrity, pressure boundary) of safety-related SSCs. For example, the staff has determined that the categorization process is not sufficiently robust to support the requested exemption from ASME Section XI Inservice Inspection requirements.

Response:

Note: As used in this response, the term "component" includes items such as valves, pumps, vessels, and piping systems. It does not include supports, which are referred to separately. In addition, the term "pressure boundary" includes structural integrity considerations.

STPNOC has two risk-informed processes applicable to risk ranking passive functions. The first process is described in STPNOC's exemption request for plant SSCs (Categorization process). The second process involves risk-informed inservice inspection (RI-ISI), based upon an EPRI methodology (RI-ISI risk ranking process). This process has been endorsed by NRC Regulatory Guide 1.178, "An Approach for Plant-Specific Risk-Informed Decisionmaking: Inservice Inspection of Piping,"

STPNOC has obtained NRC approval for a relief request for RI-ISI of ASME Class 1 butt-welded piping under Regulatory Guide 1.178. In addition, STPNOC has recently submitted a similar relief request for Class 1 socket welded piping and Class 2 piping. STPNOC currently has no plans to submit a relief request for RI-ISI for Class 3 piping.

STPNOC has conservatively evaluated the pressure boundary functions of systems under the categorization process. For each fluid system that has been categorized, pressure boundary has been identified as a separate function and has been risk ranked in accordance with the categorization process. As detailed in the exemption request, this process involves answering five deterministic questions that provide for a consistent and documented approach to evaluating the consequences and likelihood of pressure boundary failures that could impact the capability of the system to perform its safety functions. As evidence of the robustness of this process, STPNOC notes that, based on the categorizations performed to date, the following systems or portions of these systems (as well as the applicable components) are categorized as MSS or HSS for functions related to pressure boundary.

· Chemical & Volume Control
· Air starting system for the Standby Diesel Generator
· Lube oil system for the Standby Diesel Generator
· Feedwater
· Main Steam
· Reactor Coolant
· Residual Heat Removal
· Safety Injection
· Steam Generator Blowdown

STPNOC believes that its categorization process for the exemption is sufficiently robust for categorizing passive functions. However, to resolve this open item, STPNOC agrees to provide the following enhancements to its process for categorizing those functions.

STPNOC's Proposed Exemption for the Pressure Boundary of ASME Class 1 and 2 Components and Supports

For determining the final pressure boundary risk of Class 1 and 2 components for purposes of the exemption from 10 CFR 50.55a(g), STPNOC proposes to use the higher of the RI-ISI risk ranking or the categorization process pressure boundary risk. Since the RI-ISI process applies only to piping, STPNOC would utilize one of the following methods for determining the "RI-ISI" risk for components other than piping:

1) Assign such components the same pressure boundary risk as the associated section of piping. Where the associated piping has more than one risk (e.g., upstream and downstream of a valve), the higher risk will be used; or,

2) Perform a technical evaluation that supports a lower pressure boundary risk, based on such factors as differences in design features and/or degradation mechanisms that are less severe for these components than for the associated piping.

Supports would be assigned the same risk as the final pressure boundary risk of the associated component.

The following matrix summarizes STP's proposal with respect to pressure boundary risk for ASME Class 1 and 2 components:

		Categorization Process Pressure Boundary Risk	
		HSS/MSS	**LSS/NRS**
RI-ISI Risk Rank	**High or Medium**	Final pressure boundary risk of component is High or Medium. Component and its support(s) are not subject to exemption from 10 CFR 50.55a(g). Piping welds are subject to RI-ISI, with a risk rank of High or Medium, as applicable	Final pressure boundary risk of component is High or Medium. Component and its support(s) are not subject to exemption from 10 CFR 50.55a(g). Piping welds are subject to RI-ISI, with a risk rank of High or Medium, as applicable.
	Low	Final pressure boundary risk of component is High or Medium. Component and its support(s) are not subject to exemption from 10 CFR 50.55a(g). Piping welds are subject to RI-ISI, with a risk rank of Low.	Final pressure boundary risk of component is Low. Component and its support(s) are subject to exemption for applications involving pressure boundary considerations, e.g., 10 CFR 50.55a(g).

The NRC has already determined that the RI-ISI process is sufficiently robust for risk ranking of passive functions (i.e., structural integrity and pressure boundary). In addition, STPNOC is not proposing (for purposes of the exemption from 10 CFR 50.55a(g)) to categorize components lower than their RI-ISI risk ranking. Therefore, there is a sufficient technical justification for STPNOC's proposal to exempt Class 1 and 2 components, whose pressure boundary risk has been determined to

be Low under the process described above, from special treatment requirements involving pressure boundary considerations, e.g., ASME Section XI requirements.

STPNOC has performed a comparison of the RI-ISI risk ranking of Class 1 and Class 2 piping against the categorization process pressure boundary risk of the associated systems. Results show that, with one exception, piping that is LSS or NRS under the categorization process is also risk ranked as Low under the RI-ISI methodology. The one exception is on the Auxiliary Feedwater (AF) system, where a small portion of the piping is assigned an RI-ISI risk of Medium compared to the categorization process pressure boundary risk of LSS. As indicated by the above matrix, that portion of the AF system will be assigned a pressure boundary risk of Medium and will not be subject to the exemption for applications involving pressure boundary considerations.

In order to provide additional assurance, STPNOC will perform periodic tests, up to and including tests that are equivalent to the Section XI tests, to ensure that the systems are fully intact and that sufficient safety margin is maintained. These tests will be performed on systems whose components have a final pressure boundary risk of Low under the process described above.

Thus, from a risk-informed perspective, STPNOC concludes that combining the categorization process pressure boundary risk and the RI-ISI risk adequately evaluates the safety significance of the passive functions involving the pressure boundary and structural integrity of Class 1 and 2 components.

STPNOC's Proposed Exemption for the Pressure Boundary of ASME Class 3 Components and Supports

As discussed above, STPNOC is not planning to request relief to extend its RI-ISI risk ranking process to ASME Class 3 components. Therefore, a RI-ISI ranking does not exist for these components. However, for the purpose of the exemption from 10 CFR 50.55a(g) for these components, STPNOC proposes to use the same NRC-endorsed EPRI RI-ISI methodology that has been used for Class 1 and 2 piping. Although the methodology and the resulting risk ranks would be the same as the RI-ISI ranking process, it is referred to herein as the risk informed pipe failure and consequence (RI-PFC) process. STPNOC would apply this methodology to Class 3 systems or portions of systems for which the exemption from 10 CFR 50.55a(g) is desired.

For determining the final pressure boundary risk of Class 3 components for the purposes of the exemption from 10 CFR 50.55a(g), STPNOC proposes to use the higher of the RI-PFC risk ranking or the categorization process pressure boundary risk. Since the RI-PFC process applies only to piping, STPNOC would utilize one of the following methods for determining the RI-PFC risk for components other than piping:

1) Assign such components the same pressure boundary risk as the associated section of piping. Where the associated piping has more than one risk (e.g., upstream and downstream of a valve), the higher risk will be used; or,

2) Perform a technical evaluation that supports a lower pressure boundary risk, based on such factors as differences in design features and/or degradation mechanisms that are less severe for these components than for the associated piping.

Supports would be assigned the same risk as the final pressure boundary risk of the associated component.

The following matrix summarizes STP's proposal with respect to pressure boundary risk for ASME Class 3 components outside containment:

		Categorization Process Pressure Boundary Risk	
		HSS/MSS	**LSS/NRS**
RI-PFC Risk Rank	**High or Medium**	Final pressure boundary risk of component is High or Medium. Component and its support(s) are not subject to exemption from 10 CFR 50.55a(g).	Final pressure boundary risk of component is High or Medium. Component and its support(s) are not subject to exemption from 10 CFR 50.55a(g).
	Low	Final pressure boundary risk of component is High or Medium. Component and its support(s) are not subject to exemption from 10 CFR 50.55a(g).	Final pressure boundary risk of component is Low. Component and its support(s) are subject to exemption for applications involving pressure boundary considerations, e.g., 10 CFR 50.55a(g).

In order to provide additional assurance, STPNOC will perform periodic tests, up to and including tests that are equivalent to the Section XI tests, to ensure that the systems are fully intact and that sufficient safety margin is maintained. These tests will be performed on systems whose components have a final pressure boundary risk of Low under the process described above.

Thus, from a risk-informed perspective, STPNOC concludes that, with the additional evaluations described above, its categorization process adequately evaluates the safety significance of the passive functions involving pressure boundary and structural integrity, of Class 3 components.