4.2 Scoping for Systems and Structures

4.2.1 Scoping Information Requirements

The following information must be documented in scoping reports in accordance with the requirements of Section 7.0 of LRPP 2.1.

- Identification of all plant systems, structures and commodities by name and designated abbreviation.
- A concise but complete description of all systems, structures and commodities.
- A list of identified functions performed by the identified systems, structures and commodities. (Note, these function may or may not be intended functions.)
- Identification of those functions that are intended functions per the LR Rule.
- Identification of the LR evaluation boundaries for each system, structure and commodities in scope (i.e. those with intended functions).
- Identification of the applicable design or licensing basis references used to make the determinations above.

4.2.2 General Scoping Guidance

System and Structure Scoping shall be conducted in accordance with license renewal procedure, LRPP 2.1, which provides the detailed instructions for performing the scoping step for mechanical systems, structures, and electrical systems. The procedures fully describe the process for scoping under Criteria 1 and 3. Additional guidance for scoping under Criterion 2 is provided below.

a. Criterion 2

While performing scoping activities for Criterion 2 of the LR Rule, consideration of hypothetical failures that could result from system interdependencies may be required.

In order to satisfy Criterion 2 of the LR Rule, those NSR SSCs must be identified (including certain second-, third-, or fourth-level support systems) whose failure can prevent the satisfactory accomplishment of the SR functions identified for Criterion 1 of the LR Rule. In order to identify such systems, a reviewer should consider those failures identified in the CLB, plant specific operating experience, and industry operating experience that is specifically applicable to Point Beach Nuclear Plant. The reviewer need not consider hypothetical failures that are not part of the CLB, and that have not been previously experienced.

In determining the NSR SSCs that are within the scope of the rule, a reviewer should consider the following: 1) non-safety SSCs that are typically identified in the CLB (e.g., HELB, Missiles, Heavy Loads, Flooding etc.), 2) non-safety SSCs that are directly connected to safety related SSCs (e.g., piping segment between SR/NSR interface and first downstream seismic anchor), 3) non-safety SSCs that are <u>not</u> connected to other safety related SSCs. In this case, two potential options exist; a mitigative option (spray shields) or a preventive option (where the aging of the NSR SSC itself needs to be managed).

4.3 <u>Component Screening</u>

4.3.1 Component Screening Information Requirements

The following information must be documented in reports in accordance with the requirements in Section 7.0 of LRPP 2.1.

- Identification of all components within the LR evaluation boundaries for each system, structure, or commodity in scope.

- Identification of all components that are subject to AMR (long-lived and passive) for each system, structure, or commodity in scope.

- Identification of the component intended function(s) for all components subject to AMR.

- Identification of the applicable design or licensing basis references used to make the determinations above.

4.3.2 General Component Screening Guidance

Component screening shall be conducted in accordance with license renewal procedure, LRPP 2-1, which provides the detailed instructions for performing the screening process for mechanical systems, structures, and electrical systems. Additional guidance for performing the component screening process is provided below.

a. Commodities

Commodities are groupings of components that perform the same intended functions and may be associated with many plant systems and structures. While many commodities exist in plant systems and structures, experience has shown that the passive, long-lived commodities requiring aging management review typically include:

- component supports (includes pipe supports/hangers/snubbers/ frames, equipment frames/supports/anchorages/fixed bases/metal spring isolators, duct supports, conduit, junction boxes, cable trays and supports, instrument racks and supports, tubing supports, tanks and heat exchangers frames/saddles, LOCA restraints, and tank ring foundations),

- electrical cables,

- electrical panels,

- ventilation ducts,

- electrical penetration assemblies,

- mechanical penetrations for NSR systems and spare mechanical penetrations,

- containment air locks and hatches,

- pipe valves.

Many commodities (e.g., component supports) are not uniquely identified. Therefore, they may be identified generically and associated with the structure or system in which they reside (e.g.: Piping Frames and Stanchions Inside Containment).

b. System or Structure Evaluation Boundaries

In general, system boundaries are established by using the component designations extracted from CHAMPS. Division of components within the various systems and structures follows typical separation by discipline as follows:

- Piping systems, ventilation systems, mechanical containment penetrations, and containment airlocks and hatches are considered mechanical.

- Electrical distribution systems, electrical penetration assemblies, and cables are considered electrical.

- Plant structures, heavy load handling equipment, component supports, electrical panels and pile foundations are considered civil.

A complete list of components for the system or commodity under review is desired, and since certain components may not be uniquely identified, such as piping and civil/structural components, it becomes necessary to add to the extracted list. Precise system boundaries and interfaces should be determined while defining the License Renewal Evaluation Boundaries for a system, structure, or commodity. If difficulty is encountered while performing this process the Technical Leads should be consulted.

Structural components are typically not identified in CHAMPS. Structures are comprised of many different types of materials such as carbon steel, stainless steel, below grade concrete, above grade concrete, and elastomers. Prior to performing an aging management review, a comprehensive list of structural components

within the LR evaluation boundary must be developed. It is acceptable to use a broad term to represent a large portion of the structure (e.g., all above ground concrete), but enough distinction must be made between structural components to accommodate evaluation of the aging effects. For example, above ground concrete and below ground concrete should be identified separately since different AERMs may be applicable for each. It is also important that structural components that perform no intended function be identified uniquely so that they may be excluded from AMRs.

The boundaries for the component supports commodity should include the structural member transmitting the load to the building structure and the associated attachments to the system, component, and building. For mechanical components, the supports' evaluation boundaries should be established in accordance with the rules governing inspection of component supports (i.e., ASME Section XI, Subsection IWF). The evaluation boundaries should be limited to the portions of the supports within the IWF boundary. For electrical components, the supports' evaluation boundaries should include all supporting elements including mechanical or integral attachments to the building structure.

c. Subcomponents That Perform No Intended Functions

It is likely that many components will be encountered that have sub-components that do not perform any intended functions. For example, thermal insulation may be identified as a sub-component of piping, however, thermal insulation does not perform an intended function since it is not credited for mitigating design basis events or regulated events. No component intended function would be attributed to the sub-component, thus it would not be identified as subject to an AMR. A note in the comment field should be provided stating that the sub-component does not perform an intended function because it is not required for the parent component to perform its component intended function nor is it required for the system to perform its intended function.

d. Active and Passive Sub-components

Some components are comprised of active and passive

sub-components (e.g. air operated valve actuators). In these cases, it may be desirable to divide the component into sub-components, since the active sub-components do not require aging management review.

e. Consumables

The following paragraphs summarize the regulatory positions regarding four categories of consumables: 1) packing, gaskets, component seals, and o-rings, 2) structural sealants, 3) oil, grease, and component filters, and 4) system filters, fire extinguishers, fire hoses, and air packs.

1. Packing, Gaskets, Component Seals, and O-Rings

These items should be considered sub-components. For piping systems, no component intended functions should be attributed to these sub-components (not WSLR) because they are not considered part of the pressure boundary. As stated in ASME, Section III, NB 2121, NC 2121, and ND 2121, packing, gaskets, seals and o-rings are not relied upon for a pressure retaining function in components for which these Code design practices apply. For containment airlocks and hatches, these items are relied on to maintain the pressure boundary of containment, and as such must be considered within the scope of License Renewal (WSLR). Other uses of these items must be considered on a case by case basis and conclusions regarding their component intended functions must be justified.

2. Structural Sealants

Structural sealants may perform functions without moving parts or a change in configuration or properties, and they are not typically replaced on condition. These sealants should be identified as sub-components, and if they are determined to perform component intended functions in support of a larger structure then they must be WSLR and subject to AMR.

3. Oil, Grease, and Component Filters

The reviewer should consider these or other similar materials as consumables that are short-lived. They

should not be identified as sub-components nor are they WSLR since they are periodically replaced.

4. System Filters, Fire Extinguishers, Fire Hoses, and Air Packs

   This category of consumables should be identified as components. These items are typically replaced based on condition and may be addressed without evaluating aging effects by identifying the program that inspects and replaces them.