

**From:** <erachp@comcast.net>  
**To:** Jim Davis <jad@nrc.gov>  
**Date:** Mon, Apr 24, 2006 4:43 PM  
**Subject:** PNPS AMP Questions

Jim,

Per our discussion earlier today, attached are the PNPS AMP audit questions from Bob Jackson, Wayne Pavinich and myself. Please send me a copy of the final list of questions sent to PNPS, including the questions from the NRC team members. It will be good for us all to have a copy. I will distribute the final copies to the ATL team members.

Thanks.

Erach

**CC:** Wayne Pavinich <wapavinich@comcast.net>, Erach Patel <erachp@comcast.net>, Bob Jackson <JacksonWR@msn.com>, Mark Orr <MPORr@atlintl.com>, Peter Wen <pxw@nrc.gov>

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MESSAGE	367	Monday, April 24, 2006 4:43 PM
TEXT.htm	514	
AMP_Audit_Questions_Jackson.wpd		40525
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AMP_Audit_Questions_Pavinich.wpd		10414
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**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

Question Number	Question
B.1.5-01	<p>LRA Appendix B.1.5 (BWR Penetrations) in the Operating Experience states that in January 2005 three 2.5" piping butt welds in SLC system piping, [shop welds RPV-N14-T1 and RPV-N14-T2 and field weld RPV-14-2, were found to be unidentified on inspection drawings and not included in the ISI weld population totals. It also states that weld RPV-14-2 was included in surface examinations of the N14 nozzle safe end weld and safe end extension piece performed in RFO11. It also states that corrective actions included adding the welds to the ISI weld population totals and performing a nozzle surface examination of weld RPV-N14-2 during RFO15.</p> <p><b>QUESTION:</b></p> <p>When was RFO11?</p> <p>Please explain the apparent inconsistency that weld RPV-14-2 was not included in the ISI weld population until RFO15, yet it was included in the N14 surface examinations of N14 nozzle safe end weld and safe end extension piece during RFO11.</p>

**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

B1.5-02	<p>LRA Appendix B.1.5 (BWR Penetrations) under Exceptions states that "surface examinations are not performed on instrument penetration nozzle welds." It further states that inspections to monitor the effects of cracking on the intended function of instrument penetration nozzles (N15A/B and N16A/B) include enhanced visual (VT-2 with insulation removed) examinations during system pressure testing. It also states that a UT exam of the N16B safe end-to-reducer weld is performed every 10 years.</p> <p>However, ASME Section XI, Table IWB-2500-1 and BWRVIP-49 also recommend surface examinations.</p> <p><b>QUESTION:</b></p> <p>A surface examination is capable of finding indications with potential for failure before a through-wall leak can occur. However, a VT-2 examination looks for signs of leakage. Please provide a more detailed discussion and justification of why PNPS's AMP B.1.5, with this exception, is adequate manage the aging of these instrument nozzles during the extended period of operation.</p> <p>What is meant by the phrase "enhanced visual ... examinations"? Exactly what is the enhancement?</p>
B1.5-03	<p>LRA Appendix B.1.5 (BWR Penetrations) includes an "Exception Note" stating that PNPS has implemented risk-informed ISI (RI-ISI) in accordance with ASME Section XI, Code Case N-578.</p> <p><b>QUESTIONS:</b></p> <p>Please compare the number, type, frequency and extent of inspections required for instrument penetration nozzles N15A/B and N16A/B before implementation of RI-ISI and after implementation of RI-ISI.</p> <p>Are N15A/B and N16A/B the only Pilgrim RPV instrument penetrations?</p> <p>Please make available at the audit a copy of ASME Section XI, Code Case N-587.</p>

**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

B1.5-04	<p>GALL Program Description XI.M8 (BWR Penetrations) states that an applicant may use the guidelines of BWRVIP-62 for inspection relief for vessel internal components with hydrogen water chemistry, provided that such relief is submitted under the provisions of 10 CFR 50.55a and approved by the staff.</p> <p>QUESTIONS :</p> <p>Has Pilgrim implemented hydrogen water chemistry?</p> <p>Has Pilgrim requested and/or obtained inspection relief for vessel internal components using the guidelines of BWRVIP-62? If so, please describe the details of the inspection relief requested and/or granted.</p>
B1.5-05	<p>For PNPS AMP B.1.5 (BWR Penetrations), the description of the exception states that a UT exam of N16B safe end-to-reducer weld is performed every 10 years. For this same AMP, the Operating Experience provides relatively recent (RFO15) examination results for weld RPV-N14-2 (SLC nozzle) and for instrument penetration nozzles. The Operating Experience also states that liquid penetrant examination of instrument penetration nozzle N15A in 1990 resulted in no recordable indications. The Operating Experience does not discuss results of the 10-year UT examinations of N16B safe end-to-reducer weld.</p> <p>QUESTIONS:</p> <p>Please discuss results of the 10-year UT examination of N16B safe end-to-reducer weld.</p> <p>For RPV-N14-2 and for instrument penetration nozzles, please discuss the history of examination results that is earlier than RFO15.</p>

**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

B.1.6-01	<p>The PNPS LRA states that the implementing procedure for ASME Section XI inservice inspection and testing will be enhanced to specify that the guidelines of Generic Letter 88-01 or approved BWRVIP-75 "shall be considered" in determining sample expansions if indications are found in Generic Letter 88-01 welds:</p> <p><b>QUESTIONS:</b></p> <p>What is PNPS's current basis for determining sample expansion if indications are found in GL 88-01 welds?</p> <p>In addition the guidelines in Generic Letter 88-01 or approved BWRVIP-75, what other considerations, if any, will PNPS use in determining sample expansion if indications are found in Generic Letter 88-01 welds?</p>
B.1.6-02	<p>Please make available at the audit, in both hard copy and electronic format, the documents that compare the ten elements of PNPS AMP B1.6 (BWR Stress Corrosion Cracking) to the ten elements of GALL AMP XI.M7 (BWR Stress Corrosion Cracking).</p>
B.1.6-03	<p>Please make available at the audit a copy of NUREG-0313, Rev. 2, which is referenced as a basis document in GALL AMP XI.M7 (BWR Stress Corrosion Cracking).</p>

**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

B1.6-04	<p>Under discussion of Operating Experience, PNPS LRA Appendix B.1.6 (BWR Stress Corrosion Cracking) the first paragraph states that "ultrasonic examination of GL 88-01 nozzle safe end welds and austenitic stainless steel reactor coolant piping with 4" and greater nominal diameter and operating temperature greater than 200 deg-F during RFO14 (April 2003) resulted in no recordable indications." The second paragraph states that "ultrasonic examination of nozzle safe end welds and austenitic stainless steel reactor coolant piping with 4" and greater nominal diameter and operating temperature greater than 200 deg-F during RFO15 (April 2005) resulted in no recordable indications."</p> <p><b>QUESTIONS:</b></p> <p>Please discuss the PNPS Operating Experience for GL 88-01 welds earlier than RFO14.</p> <p>Please describe details of any weld repairs or changes of material in replacement components at PNPS to implement the recommendations of NUREG-0313.</p> <p>Please discuss earlier history of detected flaw indications and their evaluations/repairs after implementing the recommendations of NUREG-0313.</p>
B1.6-05	<p>LRA Appendix B.1.6 (BWR Stress Corrosion Cracking) identifies an Exception to NUREG-1801. The exception is described as PNPS' use of the 1998 edition with 2000 addenda of ASME Section XI, Subsection IWB-3600 for flaw evaluation, while NUREG-1801 specifies the 1986 edition of ASME Section XI, Subsection IWB-3600 for flaw evaluation.</p> <p><b>QUESTIONS:</b></p> <p>Please make available at the audit a copies of ASME Section XI, Subsection IWB-3600, the 1986 edition, and the 1998 edition with 2000 addenda.</p> <p>Please identify which specific subsections of IWB-3600 are different between the 1986 edition and 1998 edition with 2000 addenda of ASME Section XI.</p>

**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

<b>B.1.6-06</b>	<p>The Standard Review Plan for License Renewal (NUREG-1800, Rev. 1), Section 3.1.2.4, FSAR Supplement, states that "The [summary] description [of the program in the FSAR supplement] should ... contain any future aging management activities, including enhancements and commitments, to be completed before the period of extended operation."</p> <p>PNPS LRA Appendix B.1.6 (BWR Stress Corrosion Cracking) identifies an enhancement to be initiated prior to the period of extended operation. The LRA states that "The implementing procedure for ASME Section XI inservice inspection and testing will be enhanced to specify that the guidelines in Generic Letter 88-01 or Approved BWRVIP-75 shall be considered in determining sample expansion if indications are found in Generic Letter 88-01 welds.</p> <p>PNPS LRA UFSAR supplement A.2.1.6 (BWR Stress Corrosion Cracking Program) does not include a description of the enhancement to PNPS' implementing procedure for ASME Section XI inservice inspection..</p> <p><b>QUESTION:</b></p> <p>Please include a description of the enhancement to PNPS' implementing procedure for ASME Section XI inservice inspection in the UFSAR Supplement's description, A.2.1.6 (BWR Stress Corrosion Cracking Program).</p>
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**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

B.1.7-01	<p>For examination category B-N-2 , ASME Section XI, Table IWB 2500-1, specifies VT-1 examinations for interior attachment welds within the beltline region. It specifies VT-3 examinations for interior attachment welds beyond the beltline region and for core support structure welds. The guidelines of BWRVIP-48 recommend more stringent inspections for certain attachments. Specifically, the guidelines recommend enhanced visual VT-1 examination of all safety-related attachments and those nonsafety-related attachments identified as being susceptible to IGSCC.</p> <p><b>QUESTION:</b></p> <p>Please confirm that PNPS performs the more stringent inspections of applicable vessel ID attachment welds as recommended in BWRVIP-48.</p> <p>Please provide a descriptive list of the category B-N-2 vessel ID attachment welds that are inspected using the more stringent enhanced VT-1 examination techniques.</p>
B.1.7-02	<p>Please confirm PNPS AMP B.1.7 (BWR Vessel ID Attachment Welds) implements the evaluation guidelines of BWRVIP-14, BWRVIP-59 and BWRVIP-60 for evaluation of crack growth in stainless steel, nickel alloys and low alloy steels, respectively.</p>

**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

B1.8-01	<p>The PNPS LRA states that top guide fluence is projected to exceed the threshold for IASCC prior to the period of extended period of operation. The LRA states that PNPS AMP B.1.8 (BWR Vessel Internals) will be enhanced to inspect ten (10) percent of the top guide locations using enhanced visual inspection technique, EVT-1, within the the first 12 years of the period of extended operation, with one-half of the inspections (50 percent of the locations) to be completed within the first 6 years of the period of extended operation.</p> <p><b>QUESTIONS:</b></p> <p>Please describe PNPS's plans for inspection of top guide locations during the final 8 years of the twenty-year period of extended operation.</p> <p>If no inspections are planned for the final 8 years of operation, please provide a technical basis for not continuing inspection of top guide locations during this part of the period of extended operation.</p>
B.1.8-02	<p>The Standard Review Plan for License Renewal (NUREG-1800, Rev. 1), Section 3.1.2.4, FSAR Supplement, states that "The [summary] description [of the program in the FSAR supplement] should ... contain any future aging management activities, including enhancements and commitments, to be completed before the period of extended operation."</p> <p>PNPS LRA Appendix B.1.8 (BWR Vessel Internals Program) identifies an enhancement to be initiated prior to the period of extended operation. PNPS LRA UFSAR supplement A.2.1.8 (BWR Vessel Internals Program) does not describe this enhancement.</p> <p><b>QUESTION:</b></p> <p>Please include a description of the enhancement to PNPS' AMP B.1.8 in the UFSAR Supplement's description of this program.</p>

**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

B.1.8-03	<p>PNPS LRA Appendix B.1.8 (BWR Vessel Internals) identifies the following described exception to Scope of Program and Detection of Aging Effects: "Inspection of the four top guide hold-down assemblies and four top guide aligner assemblies is not performed at PNPS." An Exception Note states, "PNPS has a plant-specific analysis to account for plant-specific dynamic loading of the top guide hold-down and aligner assemblies, which concludes that less than 20% of the weld area on the top guide hold-down and aligner assemblies is needed to resist load. Therefore, in accordance with Table 3.2 of BWRVIP-26, inspection of the four top guide hold-down assemblies and four top guide aligner assemblies is not performed at PNPS.</p> <p>Questions: Please provide a staff-approved copy of BWRVIP-26, including Table 3.2, stating that inspection of the four top guide hold-down assemblies and four top aligners is not required if 20% or less of the weld area is sufficient to resist vertical loads from the top guide during faulted events.</p> <p>Does the PNPS plant-specific analysis account for the effects of all currently approved or currently requested power uprates for PNPS?</p>
B.1.8-04	Please provide a status summary of current industry activities to develop a delivery system for ultrasonic testing of the hidden welds in PNPS' core spray system.
B.1.8-05	Please provide a status summary of current industry activities to develop a delivery system for ultrasonic testing of the hidden welds in PNPS' jet pump assemblies.

**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

B.1.8-06	<p>LRA Appendix B.1.8 (BWR Vessel Internals, Operating Experience, states that "Previous visual and enhanced visual examinations of vessel internals revealed indications on core spray piping welds, and steam dryer leveling screw tack welds."</p> <p><b>QUESTIONS:</b></p> <p>When were the earlier indications on core spray piping welds and steam dryer level screw tack welds found? What corrective actions were taken?</p>
B.1.8-07	<p>GALL Section XI.M9 (BWR Vessel Internals), Element 4 (Detection of Aging Effects) states: "The applicable and approved BWRVIP guidelines recommend more stringent inspections, such as enhanced VT-1 examinations or ultrasonic methods of volumetric inspection for certain selected components and locations:"</p> <p><b>QUESTION:</b></p> <p>Please confirm that PNPS AMP B.1.8 (BWR Vessel Internals) performs the more stringent inspections recommended in the applicable and approved BWRVIP guidelines, except as documented in PNPS LRA under the discussion of "Exceptions to NUREG-1801."</p>

**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

<b>B.1.16.2-01</b>	<p>The LRA states that PNPS' AMP B.1.16.2 (Inservice Inspection) ISI Program is a plant-specific program encompassing ASME Section XI, Subsections IWA, IWB, IWC, IWD and IWF requirements. The LRA states that the ASME code edition and addenda used for the fourth interval is the 1998 edition with 2000 addenda. The LRA states that PNPS entered its fourth [ten-year] ISI interval on July 1, 2005.</p> <p><b>QUESTIONS:</b></p> <ul style="list-style-type: none"><li>a) Please clarify whether PNPS' AMP B.1.16.2 includes any exceptions or alternatives to the requirements of ASME Section XI, 1998 edition with 2000 addenda, granted or imposed under the provisions of 10 CFR 50.55a.</li><li>b) Please provide a list and a brief description of all PNPS' ISI relief requests (either approved or currently under-review by the NRC) that are applicable for the fourth ISI interval.</li><li>c) For each approved or currently under-review relief request listed in b), please identify which element(s) of the 10-element program described in LRA B.1.16.2 are affected by the relief request.</li><li>d) If any relief requests identified in item c) affect program elements 1 through 7 of LRA B.1.16.2, please provide a technical justification for continuing the current or proposed relief request into the extended interval of operation.</li></ul>
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**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

<b>B.1.16.2-02</b>	<p>The PNPS LRA, Appendix B.1.16.2 (Inservice Inspection), under Scope of Program, states, "The ISI Program manages cracking, loss of material, and reduction of fracture toughness of reactor coolant system piping, components, and supports.</p> <p>LRA Table 3.2.1-3 identifies reactor recirculation pump casings and covers, main steamline flow restrictors and valve bodies (<math>\geq 4</math>" NPS and <math>&lt; 4</math>"NPS) made of CASS as subject to the aging effect of reduction of fracture toughness. The aging management program is either Inservice Inspection or One-Time Inspection.</p> <p>The SRP-LRA (NUREG-1800, Rev.1), Appendix A.1.2.3.4 (Detection of Aging Effects), states that the applicant should "Provide information that links the parameters to be monitored or inspected to the aging effect being managed."</p> <p><b>QUESTIONS:</b></p> <p>Please discuss how the parameters to be monitored by the ISI Program or One-Time Inspection are linked to the aging effect of reduction in fracture toughness?</p> <p>Which valves are subject to the aging effect of reduction in fracture toughness? (Please provide either valve numbers and drawing references or a functional description of the valves.)</p>
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**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

<b>B.1.16.2-03</b>	<p>The SRP-LRA (NUREG-1800, Rev.1), Appendix A.1.2.3.5 (Monitoring and Trending), Paragraph 2, states: ".... The parameter or indicator trended should be described. The methodology for analyzing the inspection or test results against the acceptance criteria should be described.</p> <p>PNPS LRA Appendix B.1.16.2 (Inservice Inspection), Section 5 (Monitoring and Trending), does not describe the parameter(s) or indicator(s) being trended nor the methodology for analyzing the inspection or test results, either explicitly or by reference to specific standards tables.</p> <p><b>QUESTIONS:</b></p> <p>For PNPS plant-specific AMP B.1.16.2, please provide a description of the parameter(s) or indicator(s) being trended and of the methodology for analyzing the inspection or test results.</p>
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**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

<b>B.1.16.2-04</b>	<p>PNPS LRA Appendix B.1.16.2 (Inservice Inspection), Section 6 (Acceptance Criteria), states: "A preservice, or baseline, inspection of program components was performed prior to startup to assure freedom from defects greater than code-allowed. .... Results of inservice inspections are compared, as appropriate, to baseline data, other previous test results, and acceptance criteria of the ASME Section XI, 1998 Edition, 2000 Addenda, for evaluation of any evidence of degradation.</p> <p>10 CFR 50.55a provides that, after evaluation, the Commission may grant relief from a specific ASME Section XI code requirement if the licensee has determined that conformance with that code requirement is impractical for its facility.</p> <p><b>QUESTION:</b></p> <p>Are there any PNPS components within the scope of ASME Section XI, for which preservice, or baseline inspections were performed and for which ASME Section XI requires subsequent inspections, but for which relief from the inspection requirements of ASME Section XI has been granted on the basis that the code requirements are impractical at PNPS?</p> <p>If there are any such PNPS components, please identify them and provide a technical justification that such components will continue to perform their intended function(s) during the period of extended operation.</p>
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**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

B.1.25-01:	<p>The PNPS AMP B.1.25 (Reactor Head Closure Studs) states gives as examples of preventive measures to mitigate cracking "rust inhibitors, stable lubricants, appropriate materials."</p> <p><b>QUESTIONS:</b></p> <p>At PNPS what rust inhibitors and lubricants are approved for used on the reactor head closure studs, nuts, washers, and bushings?</p> <p>What is encompassed by the words "appropriate materials"?</p>
B.1.25-02:	<p>The PNPS LRA, AMP B.1.25 (Reactor Head Closure Studs), Operating Experience states that volumetric examination of 18 reactor head closure studs and visual examination of 18 nuts and 18 washers was performed during RF015 (April, 2005).</p> <p><b>QUESTIONS:</b></p> <p>What is the fraction of total reactor head closure studs represented by the 18 studs examine during RVO15?</p> <p>Are all studs, nuts and washers examined during each 10-year ISI interval?</p> <p>Are the studs, nuts and washers examined during RF015 original equipment that has been in use since initial startup of the plant? If not, what is the approximate average length of time that these items have been in used in operation.</p>

**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

B.1.25-03	<p>The PNPS LRA, AMP B.1.25 (Reactor Head Closure Studs), Operating Experience states that no new recordable indications were found for the studs, nuts and washers examined during RFO15.</p> <p><b>QUESTIONS:</b>            What is the examination history related to earlier refueling outages? Have indications been found in previous examinations?</p> <p>If indications were found, what corrective actions were taken?</p>
B.1.25-04	<p>RG 1.65 (Materials and Inspections for Reactor Vessel Closure Studs), which is referenced in and is a basis for GALL Program XI.M3 (Reactor Head Closure Studs), states that "visual and surface examinations may fail to reveal unacceptable defects, especially if the studs are examined in an untensioned condition." It also states that "a [volumetric examination] technique has been developed in which a transducer is lowered into the stud bolt center hole and an ultrasonic radial scan is used for the ultrasonic examination."</p> <p><b>QUESTIONS:</b>            With regard to reactor head closure studs that are removed for examination, does PNPS perform the surface examination with the studs in a tensioned or untensioned condition?</p> <p>Has PNPS performed any radial ultrasonic scans of its reactor vessel closure studs?</p>
Generic-WR J-01	Please make available at the audit a copy of ASME Section XI, the 1998 edition with 2000 addenda.
Generic-WR J-02	Please make available at the audit a copy of each of the BWRVIP manuals referenced in the PNPS LRA.

**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

Generic -  
WRJ - 03

In the PNPS LRA Operating Experience section for several AMPs (e.g. B.1.5; B.1.6; B.1.7; B.1.8; B.1.25) describes only the results of relatively recent inspection during RFO14 (April 2003) and RFO15 (April 2005). In most cases, inspection results for these refueling outage are negative (no recordable indications). Then the LRA makes a statement such as "Absence of recordable indications on the vessel attachment welds provides evidence that the program is effective for managing aging of the component during the period of extended operation."

LR-SRP (NUREG-1800, Rev. 1) in Appendix A, Section A.1.2.3.10 (Branch Technical Position RLSB-1, Operating Experience) states that "the operating experience of aging management programs, including past corrective actions resulting in program enhancements or additional programs, should be considered. .... This information can show where an existing program has succeeded and where it has failed (if at all) in intercepting aging degradation in a timely manner."

**QUESTION:**

For those AMPs where only the negative inspection results of RFO14 and RFO15 inspections are presented in the LRA, please provide additional discussion of inspection results from earlier refueling outages (approximately 10-15 years of history). If historical inspection results have found indications at some times in the past, please provide additional discussion of what corrective actions were been taken.

**Questions Related to PNPS Aging Management Programs  
Prepared by Bob Jackson**

Generic - WRJ-04	<p>The Standard Review Plan for License Renewal (NUREG-1800, Rev. 1), Section 3.0.1, states that "Enhancements are revisions or additions to existing aging management programs that the applicant commits to implement prior to the period of extended operation."</p> <p>In describing enhancements, the PNPS LRA typically says, "The following enhancement will be initiated prior to the period of extended operation."</p> <p>In describing an enhancement as something to be "initiated", rather than "implemented", prior to the period of extended operation, the LRA wording appears is ambiguous with regard to whether the enhancement will be fully implemented prior to the period of extended operation.</p> <p><b>QUESTION:</b></p> <p>Please clarify or resolve this ambiguity in the LRA description of enhancements.</p>

## **Pilgrim Nuclear Power Station**

Questions for the AMP site audit visit from Erach Patel

### **I. AMP B.1.13.1 - Fire Protection**

1. Provide justification why carbon dioxide fire suppression system is not subject to aging management review.
2. The exception taken for element 4 about the inspection frequency for penetration seals should also apply to element 3 for the same reason that it applies to element 4. Please justify why this exception does not apply to element 3.
3. The two enhancements identified in B.1.13.1 write-up are not included in the FSAR Supplement Appendix A.1.13. NUREG-1800, SRP for license renewal, section 3.X.3.4, FSAR Supplement, states the following:

As noted in Table 3.X-2, an applicant need not incorporate the implementation schedule into its FSAR. However, the reviewer should confirm that the applicant has identified and committed in the license renewal application to any future aging management activities, including enhancements and commitments to be completed before entering the period of extended operation. The staff expects to impose a license condition on any renewed license to ensure that the applicant will complete these activities no later than the committed date.

The enhancements should be included in the Appendix A write-up.

### **2. AMP B.1.13.2 - Fire Water System**

1. NUREG-1800, SRP for license renewal, section 3.X.3.4, FSAR Supplement, states the following:

As noted in Table 3.X-2, an applicant need not incorporate the implementation schedule into its FSAR. However, the reviewer should confirm that the applicant has identified and committed in the license renewal application to any future aging management activities, including enhancements and commitments to be completed before entering the period of extended operation. The staff expects to impose a license condition on any renewed license to ensure that the applicant will complete these activities no later than the committed date.

- a) The enhancement for wall thickness evaluation of fire protection piping is identified in the Appendix A write-up in the present tense, meaning the inspections are being performed. However, the enhancement is addressed in the Appendix B write-up is in the future tense, meaning the inspections will be performed in the future (before the end of the current operating term). The Appendix A write-up should be revised to address this future commitment.
- b) The enhancement for revising procedures to include inspections of hose reels for corrosion is not addressed in the Appendix A write-up. The Appendix A write-up should be revised to address this future commitment.

### **3. AMP B.1.12 - Fatigue Monitoring**

1. FSAR Supplement section A.2.1.12 references section 4.2.6 for location of the transient cycles that are tracked by this program. However, section 4.2.6 addresses RPV Axial Weld Failure Probability. Should section 4.3.1, Table 4.3-2 be referenced instead?

### **4. AMP B.1.23 - One-Time Inspection**

1. Please provide a list of systems in element of "Scope of Activity", where One-Time Inspection will be performed.

2. NUREG-1800, SRP for license renewal, section 3.X.3.4, FSAR Supplement, states the following:

As noted in Table 3.X-2, an applicant need not incorporate the implementation schedule into its FSAR. However, the reviewer should confirm that the applicant has identified and committed in the license renewal application to any future aging management activities, including enhancements and commitments to be completed before entering the period of extended operation. The staff expects to impose a license condition on any renewed license to ensure that the applicant will complete these activities no later than the committed date.

The One-Time Inspection program is a new program that will be implemented prior to period of extended operation. Please justify why this commitment is not included in the FSAR Supplement write-up in Appendix A.1.25.

### **5. AMP B.1.32.1 - Water Chemistry Control - Auxillary Systems**

1. Per SRP Appendix A1, section A1.2.3.4, the frequency of sampling water chemistry should be identified. PNPS Appendix B.1.32-1, element 4 does not identify the frequency. Please identify the frequency.

### **6. AMP B.1.32.3 - Water Chemistry Control - Closed Cycle Cooling Water**

1. The exception taken for element 4 about the performance and functional testing should also apply to element 3 for the same reason that it applies to element 4. Please justify why this exception does not apply to element 3.

## **Pilgrim Nuclear Power Station**

Questions for the AMP site audit visit from Wayne Pavinich.

### **I. AMP B.1.10.1 - Diesel Fuel Monitoring**

1. Provide justification for not cleaning and visually inspecting the security diesel generator fuel storage tank on a periodic basis.
2. Provide justification for not using all ASTM specifications.
3. Provide justification of the " $\geq$  60% of nominal thickness" acceptance criterion.
4. Will all tank bottoms be subjected to 100% UT inspection?
5. If reduction of thickness is discovered during UT, will microbiological activity be monitored and biocide added in the future? If not, provide a justification for not doing so.
6. NUREG-1800, SRP for license renewal, section 3.X.3.4, FSAR Supplement, states the following:

As noted in Table 3.X-2, an applicant need not incorporate the implementation schedule into its FSAR. However, the reviewer should confirm that the applicant has identified and committed in the license renewal application to any future aging management activities, including enhancements and commitments to be completed before entering the period of extended operation. The staff expects to impose a license condition on any renewed license to ensure that the applicant will complete these activities no later than the committed date.

The enhancements identified in the B.1.10 write-up are not included in the FSAR Supplement Appendix A.2.1.10. The Appendix A write-up should be revised to address these commitments.

### **2. AMP B.1.15 - Heat Exchanger Monitoring**

1. What method(s) will be used to detect localized corrosion? Identify areas to be inspected and frequency of inspections for localized corrosion.
2. Provide additional details describing the methods that will be used establish sample size and frequency.
3. Provide details on data collection.
4. Provide details describing the methods to assess remaining component life for loss of material using inspection results such that timely mitigative action can be made.
5. Provide more details on how acceptance criteria will be established.
6. Although this is a new program, provide operating experience with respect to heat exchanger wall thinning and other degradation resulting from adherence to GL 89-13.

### **3. AMP B.1.17 - Instrument Air Quality**

1. Provide a list of components or systems that are subject to the Instrument Air Quality Program.
2. General questions. What commitments were made as a result of the PNPS response to NRC GL 88-14? What industry standards are used for preventative actions and detection of aging effects?
3. Provide details describing the methods that determine deteriorating air quality.
4. Provide the basis for the acceptance criteria for dew point, oil mist and particulate including any industry standards invoked.
5. NUREG-1800, SRP for license renewal, section 3.X.3.4, FSAR Supplement, states the following:

As noted in Table 3.X-2, an applicant need not incorporate the implementation schedule into its FSAR. However, the reviewer should confirm that the applicant has identified and committed in the license renewal application to any future aging management activities, including enhancements and commitments to be completed before entering the period of extended operation. The staff expects to impose a license condition on any renewed license to ensure that the applicant will complete these activities no later than the committed date.

The enhancements identified in the B.1.17 write-up are not included in the FSAR Supplement Appendix A.2.1.19. The Appendix A write-up should be revised to address these commitments.

#### **4. AMP B.1.22 - Oil Analysis Program**

1. Provide justification for not monitoring the flashpoint of oil that is not regularly changed.
2. Provide acceptance criteria for water and particulate contamination and viscosity and the basis of the limits.
3. NUREG-1800, SRP for license renewal, section 3.X.3.4, FSAR Supplement, states the following:

As noted in Table 3.X-2, an applicant need not incorporate the implementation schedule into its FSAR. However, the reviewer should confirm that the applicant has identified and committed in the license renewal application to any future aging management activities, including enhancements and commitments to be completed before entering the period of extended operation. The staff expects to impose a license condition on any renewed license to ensure that the applicant will complete these activities no later than the committed date.

The enhancements identified in the B.1.22 write-up are not included in the FSAR Supplement Appendix A.2.1.24. The Appendix A write-up should be revised to address these commitments.

#### **5. AMP B.1.24 - Periodic Surveillance and Preventative Maintenance**

1. Provide any codes and standards used for detection of aging effects.
  
2. NUREG-1800, SRP for license renewal, section 3.X.3.4, FSAR Supplement, states the following:

As noted in Table 3.X-2, an applicant need not incorporate the implementation schedule into its FSAR. However, the reviewer should confirm that the applicant has identified and committed in the license renewal application to any future aging management activities, including enhancements and commitments to be completed before entering the period of extended operation. The staff expects to impose a license condition on any renewed license to ensure that the applicant will complete these activities no later than the committed date.

The enhancements identified in the B.1.24 write-up are not included in the FSAR Supplement Appendix A.2.1.26. The Appendix A write-up should be revised to address these commitments.

3. Provide trending methods.

#### **6. AMP B.1.28 - Service Water Integrity**

1. Identify applications where components are not coated or lined and the materials of construction.