VYNPS LRA - All AMP/AMR Audit Items, Rev. 3

Item	Request	Response	Status
1	A-K-01 Please explain where the commitments for the various AMP enhancements to bring the particular AMP in conformance to the GALL Report recommendations are made? How are these commitments tracked to closure?	The LRA, Appendix B identifies the commitments for AMP enhancements. Consistent with how other NRC commitments are tracked, VY will enter the commitments associated with License Renewal into PCRS corrective action database as Work Tracking (WT) items. We will do this when requested by the LR Project Manager who has a tracking item to define how all planned actions are tracked.	Closed
2	B.1.1-L-01 Program Description Item - The GALL states, "Gray cast iron, which is included under the definition of steel, is also subject to a loss of material due to selective leaching, which is an aging effect managed under Chapter XI.M33, 'Selective Leaching of Materials'." The LRA states, "This program includes (a) preventive measures to mitigate corrosion and (b) inspections to manage effects of corrosion on the pressure-retaining capability of buried carbon steel, stainless steel, and gray cast iron components." Are gray cast iron components included in the VYNPS selective leaching program?	Yes, gray cast iron components subject to aging management review are included in the VYNPS selective leaching program. Reference LRA Section B.1.25 and Table 3.3.2-8.	Closed
3	B.1.1-L-02 Program Description Item - The LRA states, "A focused inspection will be performed within the first 10 years of the period of extended operation...." What is the extent of the focused inspection at the start of the period of extended operation? Modified Question: Program Description Item -The LRA states, "A focused inspection will be performed within the first 10 years of extended operation... " On what areas will the "focused inspection" be focused?	If a focused inspection is required during the first 10 years of the period of extended operation, it will be conducted in accordance with the criteria of NUREG-1801, Section XI.M34, Buried Piping and Tanks Inspection. In section 4 of XI.M34 it states that any credited inspection should be performed in areas with the highest likelihood of corrosion problems, and in areas with a history of corrosion problems. This defines the focused inspection that will be performed at VYNPS which will also include buried piping that has experienced external corrosion problems and areas that have conditions such as exposure to groundwater that could increase the likelihood of corrosion of buried piping.	Closed
4	B.1.1-L-03 Scope of Program Element - The GALL Report states, "The program relies on preventive measures such as coating, wrapping and periodic inspection for loss of material caused by corrosion of the external surface of buried steel piping and tanks." The LRA states, "The VYNPS program does not inspect tanks. There are no buried steel tanks subject to aging management review." What is the basis for including piping but excluding tanks?	The basis for exclusion of tanks from the Buried Piping Inspection Program is that none of the metal tanks subject to aging management review are buried. Therefore, aging of tanks is managed by other programs. Reference LRA Sections 3.2.2.2.9 and 3.4.2.2.5, and Section 3.3 Tables (The only buried tank in the auxiliary systems is fiberglass.) [LAP 4/12/06] These were discussed in interview and the responses were subsequently written.	Closed

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5	B.1.1-L-04 Parameters Monitored/Inspected Element - The GALL Report states, "Coatings and wrappings are inspected by visual techniques." The LRA states, "Guidance for performing examinations of buried piping will be enhanced to specify that coating degradation and corrosion are attributes to be evaluated." What is the VYNPS commitment number associated with this enhancement? Buried piping is visually examined for evidence of corrosion damage or coating defects." A review of PP 7030, Section 4.3, does not identify the parameters that pertain to corrosion damage or coating defects. Is this the guidance that VY intends to enhance?	License Renewal Commitment #1 Vermont Yankee will enhance PP 7030, Structures Monitoring Program Procedure, to provide additional guidelines for inspections of buried pipe and underground structures. Attributes to be considered will include: 1. improved definition of the scope of underground piping inspections 2. define the condition of coatings to be inspected, including adhesion and discontinuities. 3. define the need to inspect piping underneath failed coatings 4. provide acceptance criteria, including removal of rust and an evaluation of remaining wall thickness against the minimum wall thickness requirements 5. provide instructions to notify Engineering for an inspection of any underground structures unearthed during excavation of piping.	Accepted
6	B.1.1-L-05 Detection of Aging Effects Element - The GALL Report states, "Inspections substituted for inspections requiring excavation solely for the purpose of inspection. Methods such as phased array UT technology provide indication of wall thickness for buried piping without excavation. Use of such methods to identify the effects of aging is preferable to excavation for visual inspection, which could result in damage to coatings or wrappings." How are buried components that cannot be examined by UT, due to, e.g., either material or size, examined?	Buried components are inspected when excavated during maintenance. The exception merely states that alternate methods may be used to inspect buried components. Reference LRA Section B.1.1.	Closed
7	B.1.2-P-1 Exceptions granted under the current license are not assumed to apply to period of extended operation. Please confirm that the excepted weld is outside the scope of license renewal. Also, explain why it need not be inspected at least once in each inspection interval.	As indicated in LRA Tables 3.3.2-13-5 and 3.3.2-13-36, the excepted welded connection is subject to aging management review for potential spatial interaction in accordance with 10 CFR 50.54 (a)(2). As stated in LRA Section B.1.2, exception Note 1, the welded connection need not be inspected because it is in a section of piping that is Safety Class 0 and has no license renewal function in accordance with 10 CFR 54.4 (a)(1) or (a)(3).	Closed
8	B.1.7-H-01 BWRVIP utilities have made a commitment that the NRC will be notified by a BWRVIP licensee of their decision to not fully implement a BWRVIP report, as approved by the NRC staff, within 45 days of the reports approval. Please clarify the exceptions for not fully implementing BWRVIP report by VYNPS. Did VYNPS define any new cases of not fully implementing BWRVIP in the VYNPS LRA?	The BWR Vessel Internals Program includes provisions to notify the NRC if VYNPS does not implement a BWRVIP recommendation. Exceptions to the NUREG-1801 programs that invoke specific BWRVIP reports are identified in Appendix B of the LRA. Reference LRA Section B.1.7 and LRPD-02 (AMPER) Section 4.7 The IVVI program procedure is ENN-DC-135, and the current revision includes the requirements of BWRVIP 94 Revision 1. VY has prepared a technical justification to defer the jet pump beam examinations to align with the refueling outage schedule as allowed by BWRVIP-94 (Revision in place at time of deviation). The BWRVIP requirements are based on 24 month cycles while VY is on a 18 month cycle. The UT examinations of the Jet Pump beams are scheduled for the next refueling outage RFO 26 (2007). BWRVIP 94 Revision 1, Section 3.5 provides guidance on the reporting requirements. A BWRVIP letter dated 12/20/2005 requires implementation by 8/1/2006. This is also addressed in the latest revision of ENN-DC-135.	Closed

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9	B.1.7-H-02 In the VYNPS LRA, pages B-28 & C-5, an exception to BWRVIP-25 is taken. UT & Enhanced VT-1 examinations are used to detect cracking and verify the integrity of a critical number of rim hold-down bolts. VT-3 examination is used to detect general condition. Please provide further justification for the aging management of the cracking, since VT-3 cannot detect cracking. If EVT-1 cannot be performed, please provide alternative for review and approval.	License Renewal Commitment # 29. RAI B.1.7-H-02 This exception came from TJ-2004-01 in PP 7027. The BWR Core Plate Inspection and Flaw Evaluation Guideline (BWRVIP-25) recommended a UT or EVT-1 examinations of core plate rim hold-down bolts for all plants that have not installed core plate wedges. These bolts are the only location in the core plate requiring inspection. Utilities have determined the EVT-1 examinations are extremely difficult to perform and are of limited value. The Inspection committee of the BWRVIP has attempted to develop a UT technique, and has had limited success. However, the UT examination can only be performed on a limited number of existing bolt configurations and delivery hardware for the inspection equipment has not been developed. VY will either install core plate wedges or complete an analysis, including TLAA, to support continued inspection in accordance with BWRVIP- 25. CLOSED TO RAI B.1.7-H-02	Closed
10	B.1.7-H-03 In the VYNPS LRA, page B-29, the applicant identified a VT-3 examination as a baseline. The baseline inspection described in BWRVIP is the first inspection that satisfies the guidelines in BWRVIP. Since VT-3 does not satisfy the BWRVIP guidelines, the inspection cited does not provide a baseline. Please explain how the BWRVIP guideline will be met.	The response to this question is the same as above (e.g. Question 9), i.e. the UT inspection is challenging and the BWRVIP is working developing an inspection method.	Closed
11	B.1.7-H-04 In the VYNPS LRA, page B-27, (BWRVIP-76) Recent industry experience indicates that partial through-wall cracks from the inside diameter are possible. (They have been detected at Plant Hatch.) How will cracking initiated from the inside surface of VYNPS's core shroud welds H1, H2, and H3 be managed? Continuous question: Does applicant plan to revise LRA? If yes, Please provide the exact wording for LRA supplement.	LRA Amendment Accessible regions of the core shroud welds H1,H2 & H3 are UT examined IAW BWRVIP-76. Portions of the total accessible regions of H1,H2 & H3 are characterized as design reliant analysis performed by the shroud repair designer determined the minimum design reliant weld lengths. LRA Section B.1.7 will be changed as follows: 1. The exception to the BWR vessel internals program related to the core shroud (page B-27) will be deleted. 2. Exception Note #1 on page B- 29 will be deleted.	Accepted

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12	B.1.7-H-05 In the VYNPS LRA, page B-28 (BWRVIP-18 and BWRVIP-41) BWRVIP-18 states that inspection technique development needed for the thermal sleeve welds is being addressed by the BWRVIP inspection committee as a high priority item (since 1996). The Final License Renewal SER for BWRVIP-41 states that aging management review of the nozzle thermal sleeve (jet pump inaccessible welds) will be provided by individual applicants. Please provide plant-specific justification/commitment to demonstrate that these inaccessible welds (BWRVIP-18,4) will be adequately managed during the period of extended operation.	License Renewal Commitment #36 VYNPS will inspect the hidden jet pump thermal sleeve and core spray thermal sleeve welds in accordance with BWRVIP-18 and 41 once the technology is developed and approved by the NRC. If technology has not been developed and approved by the NRC at least two years prior to the period of extended operation, VYNPS will initiate plant-specific action to resolve this issue. That plant specific action may be justification that the welds do not require inspection by expanding the discussions summarized below. The VYNPS hidden jet pump welds (TS-1&2) are far enough into the nozzle that failure at these welds would not result in the thermal sleeve disengaging from the nozzle. With the thermal sleeve still engaged, structural integrity of the rest of the jet pump is maintained. If the VYNPS jet pump thermal sleeve or riser piping severed, it would be detected through jet pump monitoring, and the unit would be shut down to effect a repair of the break. The effects of short operation on the affected jet pump nozzle would be evaluated. The VYNPS hidden core spray welds (CSTS-1,2&3) are far enough into the nozzle that failure at these welds would not result in the thermal sleeve disengaging from the nozzle. With the thermal sleeve still engaged, structural integrity of the rest of the core spray ring header is maintained. If the VYNPS core spray thermal sleeve or ring header piping is severed, it would be detected through the core spray sparger break detection monitoring system. The unit would be shutdown to effect repair of the break. If the core spray system is operated during this time, the effect of that operation on the affected core spray nozzle would be evaluated. The VYNPS hidden core spray welds (CSTS-1,2&3) are far enough into the nozzle that failure at these welds would not result in the thermal sleeve disengaging from the nozzle. With the thermal sleeve still engaged, structural integrity of the rest of the core spray ring header is maintained. If the VYNPS core spray thermal sleeve or ring header piping is severed, it would be detected through the core spray sparger break detection monitoring system. Once the technology is developed VY will inspect these welds IAW BWRVIP-18. If technology has not been developed and approved by the NRC at least two years prior to the period of extended operation, VYNPS will initiate plant-specific action to resolve this issue. That plant specific action may be justification that the welds do not require inspection by expanding the discussions summarized below. The VYNPS hidden jet pump welds (TS-1&2) are far enough into the nozzle that failure at these welds would not result in the thermal sleeve disengaging from the nozzle. With the thermal sleeve still engaged, structural integrity of the rest of the jet pump is maintained. If the VYNPS jet pump thermal sleeve or riser piping severed, it would be detected through jet pump monitoring, and the unit would be shut down to effect a repair of the break. The effects of short operation on the affected jet pump nozzle would be evaluated. The VYNPS hidden core spray welds (CSTS-1,2&3) are far enough into the nozzle that failure at these welds would not result in the thermal sleeve disengaging from the nozzle. With the thermal sleeve still engaged, structural integrity of the rest of	Accepted

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13	B.1.7-H-06 In the VYNPS LRA, page B-28 (BWRVIP-41) The VYNPS LRA states that flaws were identified through UT examinations. Please provide detailed inspection evaluation, scope expansion and corrective action information for the staff's review.	TE-2003-0021 from Appendix C of PP 7027 will be provided during on-site audit. References used to prepare TE-2003-0021 will be available for on-site review upon request. Flaw evaluations were performed for the jet pump (JP) diffuser welds, JP riser welds, and the core spray collar welds. The JP riser flaw evaluation calculation number is VYC-2400. The core spray collar weld flaw evaluation report number is VY-RPT-05-00015. 100% of the JP diffuser welds were inspected by UT in RFO 21 (1999). The flawed diffuser welds were re-inspected by UT in RFO 23 (2002) with little change in flaw sizes. 26 of 30 JP riser welds were UT inspected in RFO 20 (1998) and 4 welds were inspected by VT-1 with cleaning. The flawed riser welds were re-inspected by UT in RFO 22 (2001) with no crack growth on 2 welds and two previous indications were determined to be due to UT transducer lift-off. 100 % of the core spray collar welds were examined by UT in 1996. The flawed collar welds were re-inspected by UT in RFO 22 (2001) with no change in flaw sizes. The flawed JP diffuser/riser welds and the Core Spray collar welds are scheduled to be inspected by UT during RFO 26 (2007). Future re-inspections will be performed in accordance with BWRVIP requirements.	Closed
14	B.1.7-H-07 In the VYNPS LRA, page B-31 (BWRVIP-26) The VYNPS LRA states that an inspection will be performed for the first 12 years of the period of extended operation (PEO). Please clarify what inspections (if any) will be performed for the remaining PEO. Need commitment for the re-inspection. Need word.	License Renewal Commitment #2 NUREG-1801 requires inspection of 5% of the Top Guide during the first six years of the period of extended operation, and inspection of an additional 5% during the second 6 years of the period of extended operation. VYNPS has committed to these examinations in the current LRA. In response to the discussions relative to this question, VYNPS will inspect an additional 5% of the Top Guide during the third 6 years of the period of extended operation. (Commitment #2)	Accepted

Item	Request	Response	Status
15	B.1.8-L-01 Operating Experience Element - The LRA states, "A QA audit in 2001 revealed latent non-compliance with station administrative and Appendix J implementing procedures." Please clarify the meaning of 'latent" in this context. Added:Scope of Program item. Are any other examinations/tests performed, in addition to the integrated leakage rate and the local leakage rate tests?	No additional tests or examinations are performed under the Containment Leak Rate Testing Program. The term latent in this context means: not currently affecting program effectiveness, but with the potential for affecting program effictiveness if not corrected. While technical details were followed, administrative processes, associated with test record retention, were implemented outside the established requirements. This procedural non-compliance, if not corrected, could have diminished the effectiveness of the program. Reference VYNPS Audit Report VT-2001-26.	Closed
16	B.1.9-K-01 Please demonstrate that the guidelines provided in D2276 are consistent with or more stringent than the guidelines provided in D6217 to justify the use of D2276 only.	ASTM D2276 provides guidance on determining particulate contamination using a field monitor. It provides for rapid assessment of changes in contamination level without the time delay required for rigorous laboratory procedures. It also provides a laboratory filtration method using a 0.8 micron filter. ASTM D6217 provides guidance on determining particulate contamination by sample filtration at an off-site laboratory. Neither method contains acceptance criteria or is more stringent than the other. Thus, there is no reason to use both methods. Since ASTM D2276 is an accepted method of determining particulates and is a method recommended by ASTM D975, to which VYNPS is committed by Technical Specifications, the D2276 method is used at VYNPS.	Closed
17	B.1.9-K-02 Are the guidelines provided in D4057 addressed in this program? If not, please justify excluding this standard as an exception to the GALL Report recommendations.	As stated in the program description in LRA Section B.1.9, sampling and analysis activities are in accordance with technical specifications on fuel oil purity and the guidelines of ASTM standards D4057-88 and D975-02 (or later revisions of these standards). Reference LRA Section B.1.9, Program Description.	Closed
18	B.1.9-K-03 Please indicate what additives, if any, are provided by the fuel oil supplier. Please provide a copy of a recent fuel oil procurement specification or supplier declaration which indicates what fuel oil additives are included as well as any tests that may have been performed by the fuel oil supplier or by VYNPS.	Vermont Yankee purchases un-dyed, low sulfur #2 diesel fuel for use in safety-related systems. Additives are not used by Vermont Yankee or the fuel supplier. The diesel fuel currently comes from Ultramar (a Canadian refinery) to a local supplier. The refinery blends fuel to meet a given specification and may use some additives such as cetane enhancers. Refinery use of additives is not described in their specification and is outside the control of the end user. Biocides have never been added to the onsite fuel supply.	Closed

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19	B.1.9-K-04 Please provide the technical justification for not adding fuel oil additives.	As stated in LRA Section B.1.9, exception note 2, plant operating experience has not indicated a need for additives. Reference LRA Section B.1.9, exception note 2. Fuel additives are generally required for three reasons. These are to maintain the stability of the fuel oil, change the properties of the fuel oil (e.g. increase the ignition quality) or to prevent bacterial or mold growth in the fuel oil. The addition of biocides may degrade some of the other fuel oil properties such as increasing the filterable solids loading. For the past 10 years, VYNPS has been buying high quality fuel oil from Ultramar in Canada. Our deliveries are timed to the arrival of new rail cars in Vermont from this refinery. We specify very high quality fuel oil and ensure that it and the delivery trucks do not contain any contaminants. Monthly analyses of diesel fuel oil from the top, middle and bottom of the Main Fuel Oil Storage Tank have not produced any indications of fuel oil deterioration or the presence of water or sediment. Since mold and bacteria grow in the water fuel oil interface, we have no need for biocides. Diesel generator performance associated with the quality of the diesel fuel oil has been excellent. Thus, there is no need for fuel oil additives.	Closed
20	B.1.9-K-05 Please describe what parameters are monitored or inspected and indicate what guidance is used for fuel oil sampling. Please provide a copy of a representative plant procedure for fuel oil sampling.	The Diesel Fuel Monitoring Program monitors fuel quality and levels of water in the fuel oil. ASTM D4057-88 (or a later revision of this standard), Standard Practice for Manual Sampling of Petroleum and Petroleum Products, is used for guidance on oil sampling. Safety-related diesel fuel oil is analyzed according to ASTM D975-02 (or a later revision of this standard). ASTM D1796 is used to check for water and sediment. Determination of particulates is according to ASTM Standard D2276. Reference LRPD-02 (AMPER) Section 4.9. Exceptions to NUREG-1801 Section XI.M30 parameters monitored/inspected are described in LRA Section B.1.9. Procedure OP-4613 is available for on-site review in the program basis document.	Closed
21	B.1.9-K-06 Is multi-level sampling used to detect the presence of contaminants in the fuel oil and, if not, please provide the technical justification for the approach used at the plant?	As stated in LRA Section B.1.9, the Diesel Fuel Monitoring Program is consistent with NUREG-1801, Section XI.M30 for the detection of aging effects attribute. As described in NUREG-1801, periodic multi-level sampling is used to provide assurance that fuel oil contaminants are below unacceptable levels. Reference LRA Section B.1.9 and LRPD-02 (AMPER) Section 4.9.	Closed

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22	B.1.9-K-07 Are the interior surfaces of the fuel oil tanks visually inspected and, if so, provide a copy of a representative plant procedure used for the tank inspection?	As stated in LRA Section B.1.9, the Diesel Fuel Monitoring Program is consistent with NUREG-1801, Section XI.M30 for the detection of aging effects attribute. As described in NUREG-1801, the fuel oil storage tank is periodically drained, cleaned and visually inspected to detect potential degradation. Reference LRA Section B.1.9 and LRPD-02 (AMPER) Section 4.9. PM Activity 3 of PM Basis M118 is available for on-site review in the program basis document. The diesel day tanks are 800 gallon tanks located above ground and adjacent to the emergency diesels in separate rooms. The design of the tanks does not provide access for cleaning. The fuel oil for these tanks is supplied from the Main Fuel Oil Storage Tank. The suction for the transfer pumps is located 4" off of the bottom of the tank. Chemistry samples both the Main Tank and the Day Tanks from the bottom of the tanks. Water and/or sediment in the Main Storage Tank would be detected prior to it being transferred to the Day Tanks. Each of the Emergency Diesel Generators is run for 4 hours monthly with each diesel using approximately 200 gallons of fuel oil per hour. This ensures that the fuel oil is turned over every month and that there are no stability issues. There have been no indications of water and sediment in the quarterly analyses from these tanks. Since VYNPS is sampling from the bottom of these tanks and has not detected problems with the fuel oil, there is no reason to drain and clean the tanks. The John Deere Diesel Generator (JDDG) is run under load monthly for 1 hour. This diesel uses 10 gallons per hour and the surveillance requires verification of auto feed. The fire pump diesel is operated during monthly and quarterly surveillance tests. Thus, the fuel in the metal tanks associated with the JDDG and fire pump diesels is turned over frequently.	Closed
23	B.1.9-K-08 Are UT measurements conducted on the fuel oil tank bottoms? How often are these measurements taken and provide a copy of a representative plant procedure which governs these measurements?	A 1996 ultrasonic thickness measurement of the fuel oil storage tank bottom surface revealed no significant degradation. The Diesel Fuel Monitoring Program includes an enhancement to perform UT measurements of the fuel oil storage tank bottom surface every 10 years during the period of extended operation. Reference LRA Section B.1.9. WO 94-08951, with the results of the 1996 UT measurement, is available for on-site review in the program basis document.	Closed
24	B.1.9-K-09 How often are the fuel oil in the tanks sampled? Is this data trended and what criteria is used to initiate corrective actions?	The Diesel Fuel Monitoring Program is consistent with NUREG-1801, Section XI.M30 for the monitoring and trending attribute. As described in NUREG-1801, monitoring (sampling) and trending occurs at least quarterly, and in accordance with VYNPS Technical Specifications (monthly). Reference LRA Section B.1.9 and Technical Specification 4.10.C.2. Filterable solids acceptance criterion is = 10 mg/l. Water and sediment acceptance criterion is = 0.05%, UT acceptance criterion will be = 60% nominal thickness. Reference LRA Section B.1.9 and LRPD-02 (AMPER) Section 4.9.	Closed
25	B.1.9-K-10 Have there been any component failures related to the quality of the fuel oil which led to the loss of intended function?	The review of plant operating experience did not reveal any component failures related to the quality of the fuel oil that led to the loss of intended function. Reference LRA Section B.1.9 and LRPD-05 (OE Report).	Closed

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26	B.1.10-N-01 The results of the EQ of electrical equipment in LRA Section 4.4. indicate equipment identified in the TLAA. The important attributes of a re-analysis are the analytical methods, the data collection, the reduction methods, the underlying assumptions, the acceptance criteria, and corrective actions. Provide information on these important attributes of re-analysis of an aging evaluation of electrical equipment identified in the TLAA to extend the qualification under 10 CFR 50.49(e).	LRA Amendment LRA Appendix B.1.10 will be revised to add the following: VYNPS may perform re-analysis of an aging evaluation in order to extend the qualification of electrical components under 10 CFR 50.49 on a routine basis as part of the plant's EQ program. Important attributes for the re-analysis of an aging evaluation include analytical methods, data collection and reduction methods, underlying assumptions, acceptance criteria, and corrective actions. VYNPS may apply this re-analysis program to EQ components now qualified for the current operating term. A re-analysis program that meets the conditions defined in the GALL report for important attributes, is an acceptable AMP for license renewal under option 10 CFR 54.21(c)(1)(iii). EQ Component Re-analysis Attributes The re-analysis of an aging evaluation is normally performed to extend the qualification by reducing excess conservatism incorporated in the prior evaluation. Reanalysis of an aging evaluation to extend the qualification of a component is performed on a routine basis pursuant to 10 CFR 50.49(e) as part of an EQ program. While a component life limiting condition may be due to thermal, radiation, or cyclical aging, the vast majority of component aging limits are based on thermal conditions. Conservatism may exist in aging evaluation parameters, such as the assumed ambient temperature of the component, an unrealistically low activation energy, or in the application of a component (de-energized versus energized). The re-analysis of an aging evaluation is documented according to the station's quality assurance program requirements that require the verification of assumptions and conclusions. As already noted, important attributes of a re-analysis include analytical methods, data collection and reduction methods, underlying assumptions, acceptance criteria, and corrective actions (if acceptance criteria are not met). These attributes are discussed below. Analytical Methods: The analytical models used in the re-analysis of an aging evaluation are the same as those previously applied during the prior evaluation. The Arrhenius methodology is an acceptable thermal model for performing a thermal aging evaluation. The analytical method used for a radiation aging evaluation is to demonstrate qualification for the total integrated dose (that is, normal radiation dose for the projected installed life plus accident radiation dose). For license renewal, one acceptable method of establishing the 60-year normal radiation dose is to multiply the 40-year normal radiation dose by 1.5 (that is, 60 years/40 years). The result is added to the accident radiation dose to obtain the total integrated dose for the component. For cyclical aging, a similar approach may be used. Other models may be justified on a case-by-case basis. Data Collection and Reduction Methods: Reducing excess conservatism in the component service conditions (for example, temperature, radiation, cycles) used in the prior aging evaluation is the chief method used for a re-analysis. Temperature data used in an aging evaluation is to be conservative and based on plant design temperatures or on actual plant temperature data. When used, plant temperature data can be obtained in several ways, including monitors used for Technical Specification compliance, other installed monitors, measurements made by plant operators during rounds, and	Accepted

		temperature sensors on large motors (while the motor is not running). A representative number of temperature measurements are conservatively evaluated to establish the temperatures used in an aging evaluation. Plant temperature data may be used in an aging evaluation in different ways, such as (a) directly applying the plant temperature data in the evaluation, or (b) using the plant temperature data to demonstrate conservatism when using plant design temperatures for an evaluation. Any changes to material activation energy values as part of a re-analysis are to be justified on a plant-specific basis. Similar methods of reducing excess conservatism in the component service conditions used in prior aging evaluations can be used for radiation and cyclical aging. Underlying Assumptions: EQ component aging evaluations contain sufficient conservatism to account for most environmental changes occurring due to plant modifications and events. When unexpected adverse conditions are identified during operational or maintenance activities that affect the normal operating environment of a qualified component, the affected EQ component is evaluated and appropriate corrective actions are taken that may include changes to the qualification bases and conclusions. Acceptance Criteria and Corrective Actions: The re-analysis of an aging evaluation could extend the qualification of the component. If the qualification cannot be extended by re-analysis, the component is to be refurbished, replaced, or re-qualified prior to exceeding the period for which the current qualification remains valid. A re-analysis is to be performed in a timely manner (that is, sufficient time is available to refurbish, replace, or re-qualify the component if the re-analysis is unsuccessful).	
27	B.1.10-N-02 GALL X.E1, Environment Qualification (EQ) of Electric Components, under "Parameter Monitored/Inspected" states that EQ component qualified life is not based on condition or performance monitoring. However, pursuant to Regulatory Guide 1.89, Rev. 1, such monitoring programs are an acceptable basis to modify a qualified life through analysis. Monitoring or inspection of certain environmental conditions or component parameters may be used to ensure that the component is within the bounds of its qualified basis, or as a means to modify the qualified life. Provide a detailed description of a monitoring program to modify the qualified life of EQ components through re-analysis and how the actual operating environment is determined.	The EQ program (10 CFR 50.49) does not require environmental monitoring, because the EQ components are qualified based on conservative bounding plant environments. The VYNPS EQ program, consistent with GALL X.E1, ensures that the components covered by the program are replaced at the end of the qualified life or the qualified life is modified by analysis in accordance with the applicable regulations governing the program.	Closed

Item	Request	Response	Status
28	B.1.10-N-03 Discuss operating experience of the existing EQ program. Show where an existing program has succeeded and where it has failed in identifying aging degradation in a timely manner.	The EQ program is a qualification program that assures SSCs are replaced prior to exceeding qualified life beyond that date when unacceptable aging degradation may occur. The review of OE identified no conditions in which the program failed to identify unacceptable aging degradation. License Event Report (LER) 97-20 notified the NRC staff of program deficiencies including non-conservative analytical methods. Supplementary and confirmatory analyses were completed because conditions in the EQ analyses were determined to be non-conservative. This OE demonstrates that the corrective action process is used to document program deficiencies and track corrective actions when necessary. QA audits in 2000 and 2002 identified deficiencies related to maintenance and content of program documentation. A 2004 QA audit and engineering program health report determined the program is effective and being administered and maintained in a manner that meets regulatory requirements and commitments.	Closed
29	B.1.11-P-1 Please clarify the basis for excluding the impact of environmental factors for critical locations during the period of extended operation.	License Renewal Commitment # 27 The impact of environmental factors on fatigue at critical locations during the period of extended operation will be addressed as stated in the following commitment. Prior to entering the period of extended operation, for each of the seven locations that may exceed a CUF of 1.0 when considering environmental effects, VYNPS will implement one or more of the following: (1) further refinement of the fatigue analyses to lower the predicted CUFs to less than 1.0; (2) management of fatigue at the affected locations by an inspection program that has been reviewed and approved by the NRC (e.g., periodic non-destructive examination of the affected locations at inspection intervals to be determined by a method acceptable to the NRC); (3) repair or replacement of the affected locations. Should VYNPS select the option to manage environmental-assisted fatigue during the period of extended operation, details of the aging management program such as scope, qualification, method, and frequency will be provided to the NRC prior to the period of extended operation. Reference LRA Section 4.3.	Accepted
30	B.1.12.1-L-01 Program Description Item - The GALL states, "The AMP also includes periodic inspection and testing of the halon/carbon dioxide (CO2) fire suppression system." The LRA does not address the halon/carbon dioxide (CO2) fire suppression system. On what basis does the LRA not address the halon/carbon dioxide (CO2) fire suppression system?	License Renewal Commitment #30. LRA Amendment The Halon 1301 suppression system provides fire suppression only for the computer room. There are no Appendix A, SER commitments or Appendix R commitments requiring the Halon 1301 suppression system. Therefore, it is not subject to aging management review. Aging effects for components in the CO2 system are managed by the System Walkdown Program. Reference LRA Section B.1.12.1, exception note 1; LRA Table 3.3.2-9; and AMRM-17 (Aging Management Review of the Fire Protection - Water System). VY will perform CO2 system walkdowns every 6 months starting no later than the beginning of the period of extended operation. (LR Commitment #30)	Accepted

Item	Request	Response	Status
31	B.1.12.1-L-02 Scope of Program Element - The GALL states, "The AMP also includes management of the aging effects on the intended function of the halon/CO2 fire suppression system." The LRA states, "This program is not necessary to manage aging effects for halon fire protection system components." What program will manage aging effects on halon system components?	The computer room fire suppression is provided by a Halon 1301 suppression system. There are no Appendix A, SER commitments or Appendix R commitments requiring the Halon 1301 suppression system. Therefore, it is not subject to aging management review. Reference AMRM-17 (Aging Management Review of the Fire Protection - Water System).	Closed
32	B.1.12.1-L-03 The LRA states "the Halon 1301 suppression system is not subject to aging management review. Aging effects for components in the CO2 system are managed by the System Walkdown Program." Explain rational for why the Halon 1301 suppression system is not subject to review.	The computer room fire suppression is provided by a Halon 1301 suppression system. There are no Appendix A, SER commitments or Appendix R commitments requiring the Halon 1301 suppression system. Therefore, it is not subject to aging management review. Reference AMRM-17 (Aging Management Review of the Fire Protection - Water System).	Closed
33	B.1.12.1-L-04 Parameters Monitored/Inspected Element - The GALL Report states, "The diesel-driven fire pump is under observation during performance tests such as flow and discharge tests, sequential starting capability tests, and controller function tests for detection of any degradation of the fuel supply line." The LRA states, "Procedures will be enhanced to state that the diesel engine sub-systems (including the fuel supply line) shall be observed while the pump is running." Is there a VYNPS commitment number associated with this enhancement?	License Renewal Commitment #9 Yes - License Renewal Commitment #9 addresses this enhancement	Accepted
34	B.1.12.1-L-05 Detection of Aging Effects Element - The GALL Report states, "Visual inspection by fire protection qualified inspectors of approximately 10% of each type of seal in walkdowns is performed at least once every refueling cycle." The LRA states, "The NUREG-1801 program states that 10% of each type of penetration seal should be visually inspected at least once every refueling outage. The VYNPS program specifies inspection of approximately 25% of the seals (regardless of seal type) each operating cycle, with all accessible fire barrier penetration seals being inspected at least once every four (4) operating cycles. Since aging effects are typically manifested over several years, this variation in inspection frequency is insignificant." How are inaccessible seals addressed?	The environment to which inaccessible seals are exposed is very similar, if not the same, as the environment for accessible seals such that the condition of accessible seals is representative of the condition of inaccessible seals.	Closed

Item	Request	Response	Status
35	B.1.12.1-L-06 Acceptance Criteria Element - The GALL states, "Inspection results are acceptable if there are no visual indications (outside those allowed by approved penetration seal configurations) of cracking, separation of seals from walls and components, separation of layers of material, or ruptures or punctures of seals; no visual indications of concrete cracking, spalling and loss of material of fire barrier walls, ceilings, and floors; no visual indications of missing parts, holes, and wear and no deficiencies in the functional tests of fire doors." The LRA states, "Acceptance criteria will be enhanced to verify no significant corrosion." How much corrosion is considered "significant?" What actions are taken, either with or without "significant corrosion"? Is there a VYNPS commitment number associated with this enhancement?	License Renewal Commitment #8 License Renewal Commitment #8 addresses the need to revise these acceptance criteria. Any recordable indication is entered into the Corrective Action Program for evaluation.	Accepted
36	B.1.12.2-L-01 Program Description Item - The GALL states, "This aging management program (AMP) applies to water-based fire protection systems that consist of sprinklers, nozzles, fittings, valves, hydrants, hose stations, standpipes, water storage tanks, and aboveground and underground piping and components that are tested in accordance with the applicable National Fire Protection Association (NFPA) codes and standards." The LRA states, "This aging management program applies to water-based fire protection systems that consist of sprinklers, nozzles, fittings, valves, hydrants, hose stations, standpipes, and aboveground and underground piping and components that are tested in accordance with applicable National Fire Protection Association (NFPA) codes and standards." Does VYNPS have fire water storage tanks?	No, VYNPS does not have fire water storage tanks. Reference UFSAR Section 10.11.	Closed
37	B.1.12.2-L-02 Program Description Item - The GALL states, "The fire protection system piping is to be subjected to required flow testing in accordance with guidance in NFPA 25 to verify design pressure or evaluated for wall thickness (e.g., non-intrusive volumetric testing or plant maintenance visual inspections) to ensure that aging effects are managed and that wall thickness is within acceptable limits. These inspections are performed before the end of the current operating term and at plant-specific intervals thereafter during the period of extended operation. The plant-specific inspection intervals are to be determined by engineering evaluation of the fire protection piping to ensure that degradation will be detected before the loss of intended function. The purpose of the full flow testing and wall thickness evaluations is to ensure that corrosion, MIC, or bio-fouling is managed such that the system function is maintained." The LRA does not address this item. How does VYNPS intend to address these NFPA and GALL recommendations?	License Renewal Commitment # 11 This paragraph comes from NUREG-1801, Section XI.M27 program description. The recommendation for flow testing is included in the NUREG-1801 technical basis for the parameters monitored/inspected attribute. As stated in LRA Section B.1.12.2, the VYNPS Fire Water System Program is consistent with this attribute. Every fire main segment is full flow tested using the guidelines of NFPA 25 at least once every 3 years. Reference LRPD-02 (AMPER) Section 4.12.2. The recommendation for wall thinning monitoring is included in the NUREG-1801 technical basis for the detection of aging effects attribute. As indicated in LRA Section B.1.12.2, the Fire Water System program includes an enhancement to this attribute to perform wall thickness evaluations of fire protection piping using non-intrusive techniques (e.g., volumetric testing) to identify evidence of loss of material due to corrosion. These inspections will be performed before the end of the current operating term and at intervals thereafter. Results of the initial evaluations will be used to determine the appropriate inspection interval.	Accepted

Item	Request	Response	Status
38	B.1.12.2-L-03 Detection of Aging Effects Element - The GALL Report states, "Fire hydrant hose hydrostatic tests, gasket inspections, and fire hydrant flow tests, performed annually, ensure that fire hydrants can perform their intended function and provide opportunities for degradation to be detected before a loss of intended function can occur." The LRA states, "NUREG -1801 specifies annual fire hydrant hose hydrostatic tests. Under the VYNPS program, hydrostatic test of outside hoses occurs once per 24 months; and hydrostatic test of inside hoses occurs once per 3 years." Provide justification for relaxing the test frequency.	Per NUREG-1800, Table 2.1-3, fire hoses are consumables not subject to aging management review. Therefore, the exception to the Fire Water System program related to fire hydrant hose hydrostatic tests is not necessary. (An aging management program is not required to address components that are not subject to aging management review.)	Closed
39	B.1.12.2-L-04 Detection of Aging Effects Element - The GALL states, "Fire hydrant hose hydrostatic tests, gasket inspections, and fire hydrant flow tests, performed annually, ensure that fire hydrants can perform their intended function and provide opportunities for degradation to be detected before a loss of intended function can occur." The LRA states, "NUREG-1801 specifies annual gasket inspections. Under the VYNPS program, visual inspection, re-racking and replacement of gaskets in couplings is to occur at least once per 18 months." Provide justification for relaxing the test frequency.	License Renewal Commitment #31 LRA Amendment Since aging effects are typically manifested over several years, differences in inspection and testing frequencies are insignificant. The review of operating experience did not reveal age-related failures of fire water system components that led to loss of intended function. Reference LRA Section B.1.12.2, exception note 1 and LRPD-05 (OE Report). License Renewal Commitment 31 agrees to examine these components annually.	Accepted
40	B.1.12.2-L-05 Detection of Aging Effects Element - The GALL states, "Fire hydrant hose hydrostatic tests, gasket inspections, and fire hydrant flow tests, performed annually, ensure that fire hydrants can perform their intended function and provide opportunities for degradation to be detected before a loss of intended function can occur." The LRA states, "NUREG-1801 specifies annual fire hydrant flow tests. Under the VYNPS program, verification of operability and no flow blockage occurs at least once every 3 years." Provide justification for relaxing the test frequency.	License Renewal Commitment #31 LRA Amendment As stated in LRA Section B.1.12.2, exception note 1, since aging effects are typically manifested over several years, differences in inspection and testing frequencies are insignificant. The review of operating experience did not reveal age-related failures of fire water system components that led to loss of intended function. Reference LRPD-05 (OE Report). License Renewal Commitment 31 agrees to examine these components annually.	Accepted

Item	Request	Response	Status
41	B.1.12.2-L-06 Detection of Aging Effects Element - The GALL Report states, "Fire protection system testing is performed to assure that the system functions by maintaining required operating pressures. Wall thickness evaluations of fire protection piping are performed on system components using non-intrusive techniques (e.g., volumetric testing) to identify evidence of loss of material due to corrosion. These inspections are performed before the end of the current operating term and at plant-specific intervals thereafter during the period of extended operation." The VYNPS LRA identified the following enhancement, "Wall thickness evaluations of fire protection piping will be performed on system components using non-intrusive techniques (e.g., volumetric testing) to identify evidence of loss of material due to corrosion. These inspections will be performed before the end of the current operating term and at intervals thereafter during the period of extended operation. Results of the initial evaluations will be used to determine the appropriate inspection interval to ensure aging effects are identified prior to loss of intended function." What is the VYNPS commitment number associated with this enhancement?	License Renewal Commitment #11 License Renewal Commitment #11 is the commitment associated with this enhancement.	Accepted
42	B.1.15.1-W-01 Provide drawings for the sand pocket region of the Drywell. Provide drawings for the refueling bellows detailing how they are stored, installed, connected and sealed. Provide procedures for how the refueling bellows are used. Provide drawings of the Drywell showing the gap and fill material between the secondary concrete shield wall from the refueling bellows/cavity seal connection down to the sand pocket region. Provide the VYNPS response to Generic Letter 87-05.	Portions of drawings G-191150, G-191277, & G-191481 have been provided to the NRC for the Sand pocket region of the Drywell; Refueling Bellows assemblies, and the General Arrangement of the Reactor Building including the Primary Containment. The Refueling Bellows (to RPV) and the Drywell to Reactor Cavity Seal assemblies are permanently installed by full penetrant welds. The bellows allow the Refueling Cavity to be flooded during refueling operations to allow for spent fuel transfer to the Spent Fuel Pool for storage. No procedures are required for the operation of the bellow assemblies since they are static. Operation of the drain line isolation valves are controlled by plant operating procedures used for flood-up and drain-down of the cavity. There is no fill material in the gap located between the Drywell Shell and the Secondary Concrete Shield. VYNPS response to GL 87-05 has been provided to the NRC.	Closed

Item	Request	Response	Status
43	B.1.15.1-W-02 It is stated in the VYNPS UFSAR that all interior and exterior drywell surfaces which are exposed to the atmosphere are protected from corrosion by application of a corrosion resistant coating material. However, in the VYNPS LRA it is stated that VYNPS does not rely on protective coating to manage the effects of aging. The VYNPS LRA Appendix B does not have a Protective Coating Monitoring and Maintenance Program section. However, there is a GALL AMP XI.S8 called Protective Coating Monitoring and Maintenance Program which states the following: Proper maintenance of protective coatings inside containment (defined as Service Level I) is essential to ensure operability of post-accident safety systems that rely on water recycled through the containment sump/drain system. Explain why VYNPS does not have a Service Level I Protective Coating Monitoring and Maintenance Program to prevent coating failure that could adversely affect the operation of post-accident fluid systems and thereby impair safe shutdown. Provide a copy of the VYNPS response to GL 98-04 and discuss if VYNPS considers the maintenance programs described acceptable coatings AMPs for license renewal.	VYNPS has a Service Level I Coatings Program; however it is not relied on for managing the aging effects for licensing renewal. The VYNPS UFSAR states: "No material within primary containment will fail by decomposition or corrosion and affect vital systems." The examination of the coated surfaces is performed as a part of the Containment Inservice Inspection Program (IWE) to assure that the paint and base metal has not degraded (TS Section 4.7.A). VY has an active and effective Service Level I Coatings Program to prevent degradation to the primary containment structure. VYNPS response to GL 98-04 includes our commitment to EPRI TR-109937 "Guideline on Nuclear Safety-Related Coatings (renumbered 1003102). The GL also discusses the impact of debris loading on the ECCS strainers. These strainers were designed to accept 100% of the coatings within the LOCA zone of influence. The approach velocity of materials entrained in the torus water is extremely low due to the sizing of the ECCS strainers. Conservative design assumptions ensures VYNPS compliance with 10CFR50.46(b)(5). A copy of VYNPS response to GL 98-04 has been provided.	Closed
44	B.1.15.1-W-03 Explain why the Containment Inservice Inspection Program is a plant-specific program instead of an ASME Section XI, subsection IWE program with exceptions. Explain why the scope of the Containment Inservice Inspection Program does not include containment seals, gaskets and pressure retaining bolts. Explain under what VYNPS AMPs the inspection of these components are performed. It is stated in the VYNPS LRA that the Containment Inservice Inspection Program is an existing program. Explain if this program has been in compliance with ASME Section XI, subsection IWE since the final rulemaking to require IWE inspections was made by the NRC in 1996. Provide a copy of the VYNPS notification of commitment to IWE inspections.	Entergy chose to describe the Inservice Inspection and Containment Inservice Inspection Programs as plant-specific programs rather than comparing to the corresponding NUREG-1801 programs because the NUREG-1801 programs contain many ASME Section XI table and section numbers that change with different versions of the code. Because of this, comparison with the NUREG-1801 programs generates many exceptions and explanations that detract from the objective of the comparison. VYNPS follows the version of ASME Section XI that is approved for use at VYNPS and accepted by 10CFR50.55(a). As this is the case, the Inservice Inspection and Containment Inservice Inspection Programs are presented as plant-specific programs so they can be judged on their own merit without the distraction of numerous explanations of code revision. The Containment Inservice Inspection Program does not include containment seals or gaskets because they have been removed from the scope of Subsection IWE in the 1998 Edition of ASME Section XI with 2000 Addenda. These components are inspected under the Structures Monitoring Program as indicated in Table 3.5.2.1 of the LRA. Pressure retaining bolts are considered and included as integral part of the structural components. The Containment Inspection Program does not include containment seals or gaskets because they have been removed from the scope of Subsection IWE in the 1998 Edition of ASME Section XI with 2000 Addenda. These components are seal tested under the Containment Leak Rate Program. Pressure retaining bolts are considered and included as Containment Inservice Inspection Program. VY has been in compliance with10CFR50.55a (b)(2)(vi) and (b)(2)(ix) since at least September 9, 2001. No notification of commitment to the IWE examinations was required by 10CFR50.55a. In 2003, VY submitted a notification of the intent to use ASME Section XI -1998 Edition with 2000 Addenda as the Code of Record for all ISI programs. A copy of the submittal has been provided.	Closed

Item	Request	Response	Status
45	B.1.15.1-W-04 Explain how inspections are performed in the torus suppression pool above and below the waterline. Explain historically what inspection findings have lead to the need for augmented inspections. Explain if any augmented inspections are currently being performed. The LRA states that VYNPS uses inspection program B for containment inservice inspection. Provide the inspection interval dates through the current license and also through a possible license extension period.	Examinations are performed in accordance with the Code of Record that requires the examination of all accessible interior and exterior surfaces. In 1998, the interior surface, slightly above and fully below the water line, was stripped and coated. During RFO-24 (2004), the Suppression Pool exterior surface was General Visual examined. Though normally inaccessible, the Suppression Pool interior was made accessible and the surface above the water-line was General Visual examined. During the General Visual examination of the interior surface, the water clarity permitted observation of nearly 100% of the submerged surface area. Three small areas (at the water line) in BAY 3 were identified to have a loss of coating and primer. These areas were UT (ultrasonic tested) from the exterior, in 2" gridded areas. No result approached the minimum wall thickness of 0.533" with the lowest reading being 0.597." Based on the results, these areas were excluded from augmented examination. In RFO-27 (2008), the VT-3 of the wetted areas is presently planned to be executed by divers without dewatering the Suppression Pool. The current examination schedule is contained in Program Bases Document (4.14.2) in the PP 7024 tables. The projected schedule through the possible license extension period will be developed in accordance with the Code in effect but should be 6 inspection periods in 20 years.	Closed
46	B.1.15.1-W-05 VYNPS lists several Containment Inservice Inspection findings under operating experience for AMP B.1.15.1 in the LRA. Explain why the operating experience discusses the drywell moisture barrier when the inspection of it does not appear to be in the scope of the VYNPS Containment Inservice Inspection Program. Provide the documentation for any containment inspection findings from the most recent RFO if beyond 24. Explain if water leakage has ever been discovered between the drywell and concrete secondary shield wall or in the sand pocket area. Explain what VYNPS does to inspect for water leakage in these two areas or to verify that loss of material is not occurring on the backside of the Drywell. Provide the documentation for the RFO 24 issues identified by QA surveillance that are discussed in the operating experience. Provide the latest engineering system health report for the containment in-service inspection program.	Drywell moisture barrier is examined under the Containment Inservice Inspection Program. Table IWE-2500-1 Item E1.30 of ASME Section XI-1998 Edition with 2000 Addenda is contained in the Program Bases Document (4.14.2) in the PP 7024 tables. The Program Based Document (4.14.2) in Section B.1.15.1.10, describes the area examined and replaced during RFO-21 (2001). LRA Table 3.5.2.6 shows the drywell moisture barrier to be inspected under the structural monitoring program; this will be changed to the Containment Inservice Inspection Program. IWE examinations during RFO-25 (2005) produced no findings. In 1991, an Auxiliary Operator (AO) observed water running from a crack in the Drywell pedestal concrete onto the Torus Room floor. The investigation revealed leakage from a steam valve was condensing on and traveling along the Primary Containment Air Conditioning piping to the Drywell shell. From the Drywell shell, the water found a crack or cold-joint that directed it to the Torus Room floor. To ensure the Drywell shell integrity, the sand-cushion drains were examined and found to be functional; the exterior drywell shell was inspected and determined to be non-corroded; and the sand-cushion was observed to be dry, compacted, with adequate ventilation to assure the sand would remain dry.	Closed
47	B.1.16-P-1 Please identify the standard(s) to which instrument air is maintained, and document this commitment in Appendix A if appropriate.	License Renewal Commitment # 28 License Renewal Commitment # 28 ensures that instrument air is maintained in accordance with ISA S7.3.	Accepted

Item	Request	Response	Status
48	B.1.17-N-01 GALL XI.E3 under "Detection of Aging Effects" recommends that the inspection for water collection should be performed based on actual plant experience with water accumulation in the manhole. However, the inspection frequency should be at least once every two years. VYNPS AMP B.1.17 under the same attribute requires inspection for water collection in cable manholes and conduit occurs at least once every two years. Explain how actual plant experience is considered in the manhole inspection frequency to be consistent with GALL's XI.E3.	LRA Amendment LRA Appendix B.1.17 will be revised to include the following: VYNPS inspection for water accumulation in manholes is conducted by a plant procedure. An engineering evaluation will be used per EN-LI-102 to document and determine the plant experience that is considered in manhole inspection frequency.	Accepted
49	B.1.17-N-02 In AMP B.1.17 under the "Operating Experience" element, you have stated that the "Non-EQ Inaccessible Medium-Voltage Cable Program" at VYNPS is a new program for which there is no operating experience. GALL XI.E3 under the same element states that operating experience has shown that cross linked polyethylene (XLPE) or high molecular weight polyethylene (HMWPE) insulation materials are most susceptible to water tree formation. The formation and growth of water trees varies directly with operating voltage. Water treeing is much less prevalent in 4kV cables than those operated at 13 or 33kV. Also, minimizing exposure to moisture minimizes the potential for the development of water treeing. As additional operating experience is obtained, lessons learned can be used to adjust the program, as needed. NUREG-1800, Rev. 1, Appendix A, Branch Technical Position RLSB-1 states that an applicant may have to commit to providing operating experience in the future for new programs to confirm their effectiveness. Describe how operating experience is captured at VYNPS to confirm program effectiveness or how it is to be used to adjust the program as needed.	Operating Experience at VYNPS is controlled by procedure EN-OP-100, Operating Experience Program. The program includes the following components: Operating Experience – Information received from various industry sources that describe events, issues, equipment failures that may represent opportunities to apply lessons learned to avoid negative consequences or to recreate positive experiences as applicable. Internal Operating Experience – Operating Experience that originates as a condition report or request from plant personnel that warrants consideration for possible Entergy-wide distribution. Internal OE can originate from any Entergy plant or headquarters. Impact Evaluation – Analysis of an OE event or problem that requires additional information and research to determine impact or potential impact, as it relates to plant condition and/or configuration. Impact evaluations are typically documented with a Condition Report. Condition Report action items and corrective actions are used to confirm program effectiveness and to modify the program as needed.	Closed
50	B.1.17-N-03 As stated in FSAR Section 8.3.3 (Page 8.3-5 of 8), the underground power lines - that run from the adjacent Vernon Hydroelectric Station to station switchgear - have been designated as the Station Blackout alternate AC source. Thus; they are used to meet Station Blackout requirements 10 CFR 50.63. Are these cables included in the scope of AMP B.1.17? If not, provide an explanation.	Yes, the underground power lines that run from Vernon Dam Switchyard to VYNPS safety buses, are included in program B.1.17. CLOSED TO RAI 3.6.2.2.N-08	Closed

Item	Request	Response	Status
51	B.1.18-N-01 In AMP B.1.18, you have stated that for neutron flux monitoring system cables that are disconnected during instrument calibration, testing is performed at least once every 10 years . GALL XI.E2 recommends that the test frequency shall be determined by the applicant based on engineering evaluation, but the test frequency shall be at least once every ten years. Explain how engineering evaluation is considered in the test frequency; in order to be consistent with GALL XI.E2.	LRA Amendment LRA Appendix B.1.18 will be revised as follows: The first test of neutron monitoring system cables that are disconnected during instrument calibrations shall be completed before the period of extended operation and subsequent tests will occur at least every 10 years. In accordance with the Corrective Action Program, an engineering evaluation will be performed when test acceptance criteria are not met and corrective actions, including modified inspection frequency will be implemented to ensure that the intended functions of the cables can be maintained consistent with the current licensing basis for the period of extended operation.	Accepted
52	B.1.18-N-02 Confirm that the test includes both cables and connections.	Yes, the B.1.18 program includes both cables and connections for the instrument circuits that are in scope for license renewal.	Closed
53	B.1.19-N-01 In AMP B.1.19 you have stated that the a representative sample of accessible insulated cables and connections, within the scope of license renewal, will be visually inspected for cable and connection jacket surface anomalies such as embrittlement, discoloration, cracking or surface contamination. The technical basis for sampling will be determined using EPRI document TR-109619, "Guideline for the Management of Adverse Localized Equipment Environments". Explain the technical basis for cable sampling.	LRA Amendment The LRA Appendix B.1.19 program description will be changed to read as follows: This program addresses cables and connections at plants whose configuration is such that most cables and connections installed in adverse localized environments are accessible. This program can be thought of as a sampling program. Selected cables and connections from accessible areas will be inspected and represent, with reasonable assurance, all cables and connections in the adverse localized environments. If an unacceptable condition or situation is identified for a cable or connection in the inspection sample, a determination will be made as to whether the same condition or situation is applicable to other accessible cables or connections. The sample size will be increased based on an evaluation per EN-LI-102 – Corrective Action Process.	Accepted
54	B1.19-N-02 In AMP B.1.19 under the "Operating Experience" element, you have stated that the Non-EQ Insulated Cables and Connection Program at VYNPS is a new program for which there is no operating experience. GALL XI.E1 under same element states that operating experience has shown that adverse localized environments caused by heat or radiation for electrical cables and connections may exist next to or above (within three feet of) steam generators, pressurizers or hot process pipes, such as feedwater lines. These adverse localized environments have been found to cause degradation of the insulating materials on electrical cables and connections that is visually observable, such as color changes or surface cracking. NUREG-1800, Rev. 1, Appendix A, Branch Technical Position RLSB-1 under operating experience states that an applicant may have to commit to providing operating experience in the future for a new program to confirm its effectiveness. Describe how operating experience will be captured by VYNPS.	Operating Experience at VYNPS is controlled by procedure EN-OE-100, Operating Experience Program. The program includes the following components: •Operating Experience – Information received from various industry sources that describe events, issues, equipment failures, that may represent opportunities to apply lessons learned to avoid negative consequences or to recreate positive experiences as applicable. •Internal Operating Experience – Operating Experience that originates as a Condition Report or request from plant personnel that warrants consideration for Entergy-wide distribution. Internal OE can originate from any Entergy plant or headquarters. •Impact Evaluation – Analysis of an OE event or problem that requires additional information and research to determine impact or potential impact, as it relates to plant condition and/or configuration. Impact evaluations are typically documented within a Condition Report. Condition Report action items and corrective actions are used to confirm program effectiveness and to modify the program as needed.	Closed

Item	Request	Response	Status
55	B.1.20-K-01 For those components that do not have regular oil changes, please provide the basis for Note 1 (not determining the flash point for the sampled oil).	As stated in LRA Section B.1.20, exception note 1, flash point is not determined for sampled oil because analyses of filter residue or particle count, viscosity, total acid/base (neutralization number), water content, and metals content provide sufficient information to verify the oil does not contain water or contaminants that would permit the onset of aging effects. Added Response: Fuel dilution is measured on EDG lube oil, rather than determiming the flash point. In lieu of performing Flash point testing on the Emergency Diesel Generators, Diesel Driven Fire Pump and the John Deere Diesel Generator, a test for fuel and water by % of volume is performed. This test accomplishes the same goal as the flash point test but is more prescriptive then the flash point test. There could be two factors that affect the flash point of the oil; the addition of fuel that would lower the flash point or the addition of water that would raise the flash point. The worst case would be a combination of the two. By determining the % by volume of both fuel and water, the analysis can determine the cause of the change in flash point without having to conduct additional tests and corrective actions, if required, could be implemented on a timelier basis. Additional tests to determine the "Health" of the diesels are; total base number (TBN), viscosity, SAE Grade, Total Soot, and Spectrometals analysis (for wear metals and additives). The results of these analyses are trended to determine the total health of the diesel and the quality of its lubricating oil. Diesel Lube Oil Analyses are performed on a quarterly basis.	Closed
56	B.1.20-K-02 How are the alert levels or action limits established? How is the data trended and what criteria are used to determine if the trends are unusual?	As indicated in LRA Section B.1.20, the Oil Analysis Program is consistent with NUREG-1801, Section XI.M39 for the acceptance criteria attribute. As recommended in NUREG-1801, action limits were established in accordance with industry standard ISO 4406 and manufacturer's recommendations. See DP 0213 (available for on-site review in the program basis document) for trending and criteria.	Closed
57	B.1.21-K-01 Please provide a table outlining the inspection methods used for each aging effect and parameter monitored or inspected. This should be consistent with the table provided in GALL Report AMP XI.M32. If not, provide a justification for any exceptions to this table.	Attachment 2 of LRPD-02 (AMPER), which is available for on-site review in the program basis document, is a table similar to the table provided in the GALL report. Attachment 2 identifies the inspection method and parameters monitored for applicable aging effects. As indicated in LRA Section B.1.21, Attachment 2 of LRPD-02 (AMPER) is consistent with the table provided in NUREG-1801, Section XI.M32.	Closed
58	B.1.21-K-02 The table provided in the program description in section B.1.21 indicates that the one-time inspection activity will confirm that the loss of fracture toughness is not occurring or is so insignificant that an aging management program is not warranted. What inspection method is used to detect this aging effect and what parameter is monitored? Please address the main steam flow restrictors in the response.	Combinations of non-destructive examinations including visual, ultrasonic, and surface techniques will monitor cracking of CASS valve bodies in piping <4" NPS to confirm that reduction of fracture toughness is not occurring or is so insignificant that an aging management program is not warranted. Reference Attachment 2 of LRPD-02 (AMPER). Main steam flow restrictors: Thermal aging embrittlement results in increased rates of crack growth that are evidenced by cracking in the material. The One-Time Inspection Program will be used to verify that reduction of fracture toughness has not progressed to the point that unacceptable cracking of the component has occurred.	Closed

Item	Request	Response	Status
59	B.1.21-K-03 What is Vermont Yankee's operating experience with Class 1 piping less than 4 inches NPS in terms of cracking?	The review of plant operating experience (1998 to 2005) did not reveal instances of cracking of Class I piping less than 4"NPS. Site to confirm and address experience prior to 1998. In the early years of plant operation VYNPS experienced occurrences of intergranular stress corrosion cracking (IGSCC) in some stainless steel piping systems. In the period of approximately 1980 through 1986 VYNPS embarked on a major IGSCC mitigation program, replacing the susceptible stainless steel piping with IGSCC resistant materials. Since then, there have been no instances of IGSCC or other pipe cracking events at VYNPS. See report "YAEC-1247, Rev. 1" and Letter FVY 88-62.	Closed
60	B.1.22-M-01 As stated by the applicant, "...prior to the period of extended operation, program activity implementing documents will be enhanced as necessary to assure that the effects of aging will be managed...." The applicant is asked to provide a listing of which specific PSPM plant implementing documents will be enhanced and why such an enhancement is necessary for each implementing document.	This information is included in Attachment 3 of LRPD-02 (AMPER) that is available for on-site review in the program basis document.	Closed
61	B.1.22-M-02 In the statement for the "operating experience" element of the AMP, the applicant, notes that "...the material condition of cranes was consistent with inspection acceptance criteria..", and "...ECCS corner room recirculation units had no significant corrosion..". By the appearance of these statements in the "operating experience" of the PSPM, is the staff to understand that the applicant intends to use the applicant's PSPM AMP in lieu of the GALL-recommended programs - XI.M23, "Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling Systems", and XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components"- during the period of extended operation?	Yes. Reference LRA Table B-2 and Section B.1.22 Program Description.	Closed
62	B.1.23-M-01 As noted in the GALL, [Section XI.M3, Element Number four (4) - "Detection of Aging Effects"]; GALL-recommended programs use visual, surface, and volumetric examinations, to indicate the presence of surface discontinuities/flaws and other discontinuities/flaws throughout the volume of material. The applicant's proposed exception states that cracking initiates on the outside surfaces of the bolts/studs, and by meeting acceptance standards of IWB-3515, this "surface-type" examination will "...provide at least the sensitivity of flaw detection that an end shot ultrasonic examination provides on bolts/studs...". The applicant is asked to provide further evidence that such a "qualified surface examination" provides the stated level of sensitivity with the thoroughness of other GALL-recommended programs.	VYNPS meets the 1998 edition through 2000 addenda of the ASME Section XI Code, Sub Section IWB 2500-1 Examination Category B -G-1."Pressure Retaining Boiler Greater than 2" in Diameter" items BG.20 and .30 that specifies a surface or volumetric examination method.	Closed

Item	Request	Response	Status
63	B.1.23-M-02 Some replacement stud bolts use a manganese phosphate surface treatment in combination MoS2 to prevent bolt degradation due to corrosion or hydrogen embrittlement. The applicant's AMP notes that Vermont Yankee's existing program includes preventive measures, such as "appropriate materials", to mitigate cracking and loss of material. GALL Section XI.M3, [Element Number two (2) - "Preventive Actions"] states that the use of this type of surface treatment is acceptable and effective. Does the applicant use similar bolting with a similar type of surface treatment?	As stated in LRA Section B.1.23, the Reactor Head Closure Studs Program is consistent with NUREG-1801, XI.M3 for the preventive actions attribute. As described in NUREG-1801, threaded surfaces of studs, nuts and washers have a phosphate coating to act as a rust inhibitor and lubricant. Also, a stable lubricant compatible with the bolting and vessel materials is applied to the stud threads, the mating surfaces of the washers and the nut threads during assembly. Reference LRPD-02 (AMPER) Section 4.18.	Closed
64	B.1.23-M-03 As noted in GALL, Section XI.M3, [Element Number ten (10) - "Operating Experience"]; GALL-recommended programs should have provisions regarding inspection techniques and evaluation. The applicant states, in its explanation of their existing program, that "...recent (2002 and 2004) visual and ultrasonic inspections...revealed no recordable indications..". The applicant is asked to compare examinations performed in 2002 and 2004 with the "exception-stated" examination technique proposed for future examinations and to provide to the staff the results of this comparison.	LRA Amendment The 2002 examinations included visual and ultrasonic inspections. The 2004 examinations were visual only as per the stated exception. Future examination will be visual only in accordance with ASME Code Case N-652. Code Case N-652 has been endorsed by the NRC per Table 1 of Regulatory Guide 1.147. Revision 14.	Accepted
65	B.1.26-W-01 Provide examples of VYNPS plant procedures used to implement the requirements of GL 89-13/Service Water Integrity AMP for routine inspection and maintenance of the service water systems. Include examples of actual visual and NDE testing. Explain any differences between the GL 89-13 program scope and the Service Water Integrity Program scope for license renewal.	Procedures OP 5265, Service Water Component Inspection and Acceptance Criteria; PP 7021, Service Water Program; and PP 7601, Service Water Chemical Treatment and Monitoring Program are available for on-site review in the program basis document. As stated in LRA Section B.1.26, the Service Water Integrity Program is consistent with NUREG-1801, XI.M20 for the scope of program attribute. Therefore, there are no differences between the GL 89-13 program scope and the Service Water Integrity Program scope for license renewal.	Closed
66	B.1.26-W-02 Provide the original (or current if pipe has been replaced) material and lining specification for the buried piping which is part of the service water system, including the alternate cooling system.	Provided a copy of the original site piping specification QC-10 that shows the piping for the Service Water and alternate cooling water systems piping is carbon steel material and are not coated.	Closed
67	B.1.26-W-03 VYNPS takes exception to GALL AMP XI.M20 element 2 by stating that not all VYNPS service water system components are lined or coated. Components are lined or coated only where necessary to protect the underlying metal surfaces. Provide an itemized list of the piping in the service water system where it is lined or coated to protect the underlying metal surfaces. Provide the type of lining or coating for each item on the list.	Linings and coatings are not credited. Piping that is lined or coated will be inspected with the same techniques used for unlined piping. An itemized listing of which piping is lined or coated was not necessary for the aging management review. In accordance with the piping specification QC-10 there is no coated piping in the Service Water system. The only coated components are a few valve body internals and heat exchanger heads that are currently and will continue to be inspected as part of the Service Water program.	Closed

Item	Request	Response	Status
68	B.1.26-W-04 Explain if there any portions of the service water system that are infrequently used and are periodically flushed. If so, describe these portions and how often they are flushed. Explain the criteria used to initiate the flushing. Explain if any other flushing of the system is done and how the strainers are cleaned. Discuss the historic inspection results of the gravity portion of the ACS piping coming from the deep water basin and if this has been a problem area with flow blockage.	The only sections of the Service Water (SW) system that are flushed on a regular basis are the instrumentation tubing lines (3/8" stainless steel tubing). A list of the specific lines has been provided. These lines are flushed on a 12 or 18 month basis as identified in the Preventive Maintenance program. The SW strainers are self cleaning and are not opened and cleaned on a regular basis. The suction line from the deep basin to the RHRSW pumps is opened and inspected every other outage (3 years). The results of the inspection have shown the line to be free of tuberlication and silt. The line is treated with a biocide before being closed after inspection. No issues with flow blockage have been identified in the past six years. The line was found to be fouled in the early 1990's and was subsequently cleaned and the addition of biocide was started. This appears to be very successful based on the recent inspections.	Closed
69	B.1.26-W-05 VYNPS takes exception to GALL AMP XI.M20 element 5 by stating that the VYNPS program requires tests and inspections each refueling outage, but not annually. Provide documentation that this frequency is in agreement with the commitments made by VYNPS under GL 89-13. Provide the frequency of heat transfer testing for each heat exchanger in the service water system. The applicant is requested to state which VYNPS group is responsible for reviewing the test data and to provide through a plant procedure an example of how this process is implemented. Explain the type of heat transfer testing which is done on the service water system heat exchangers.	PP7021 provides information related to VYNPS's compliance with GL89-13 requirements. A copy of this procedure was provided. GL 89-13 provides for the options of performing either thermal performance testing or periodic cleaning. VYNPS has chosen to perform cleaning for most of the SW supplied heat exchanger and coolers. The exceptions are the Stand-by Fuel Pool Cooling (SBFPC) Heat Exchangers, the Emergency Diesel Generator Coolers (3 each) and the Corner Room RRU's #7 & 8. The SBFPC heat exchangers are thermal performance tested every 18 months. Based on the satisfactory results of the tests VYNPS is preparing a change to perform cleaning instead of testing. The coolers have been internally examined and found to be very clean and free for silt, sludge and tuberculation. The frequency of cleaning has yet to be determined but is anticipated to be in the every 3 to 6 year range. The Emergency Diesel Generator Coolers are tested every month and the results are trended by System Engineering. No adverse trends have been identified. A copy of the trends for the "B" Diesel has been provided. Copies of the test data sheets for the entire year 2004 have been provided.. The RRU's are tested quarterly by measuring the DP across the units. This will detect any fouling which would decrease thermal performance. No performance issues have been identified. All performance data and Inspection results are monitored and trended by the System Engineering Department and the Service Water System Engineer.	Closed
70	B.1.26-W-06 Provide the NRC inspection report written in 2002 for the service water system. Characterize the 20 service water system leaks and how they were repaired under the VYNPS corrective action program. Provide the VYNPS self-assessment and independent evaluation which was completed on 12/20/2002. Provide an example of the documents which provide the protocols for the use of biocides to mitigate MIC and any other procedure changes made after the self-assessment. Provide a sampling of the different performance testing and inspection results for 2004 that are discussed in the LRA operating experience with acceptance criteria. If more recent performance testing and inspection results are available, provide a sampling of them.	A copy of NRC Report, NVY 02-61 and CR-VTY-2003-02344 was provided. This CR documents the investigation into the adverse trend created by approximately 20 through wall leaks in the SW system. The result of this investigation identified several causes. One of these being the use of carbon steel components which are susceptible to Microbiological Influenced Corrosion (MIC). Another cause was determined to be ineffective chemical treatment of the system. The ineffectiveness of the chemical treatment was reinforced by a follow up assessment (DR Lutey Report). This assessment was also provided. Changes were made to the sampling program and chemical treatment process. New chemical addition pumps were installed and sampling was implemented for SW components during inspections. It should be noted that the plant is limited by the NPDES permit to no more than 2 hours a day of treatment to the SW system. This reduces the effectiveness of the treatments. VYNPS also began treatment of lines which are not normally inservice, i.e. supply line to the Diesel Generator Cooler. These lines are treated when the diesels are run to ensure that the lines are full of treated water when they are secured. Copies of the inspection database detailing the results of internal inspections have been provided.	Closed

Item	Request	Response	Status
71	B.1.26-W-06 Provide the NRC inspection report written in 2002 for the service water system. Characterize the 20 service water system leaks and how they were repaired under the VYNPS corrective action program. Provide the VYNPS self-assessment and independent evaluation which was completed on 12/20/2002. Provide an example of the documents which provide the protocols for the use of biocides to mitigate MIC and any other procedure changes made after the self-assessment. Provide a sampling of the different performance testing and inspection results for 2004 that are discussed in the LRA operating experience with acceptance criteria. If more recent performance testing and inspection results are available, provide a sampling of them.	Duplicate entry. Close to # 70.	Closed
72	B.1.27.1-W-01 Provide a masonry wall inspection report for an un-reinforced masonry wall.	Inspection Report for Masonry wall G-191513-51 provided in Drawing B-191600 Sheet 96 for an un-reinforced masonry wall was provided.	Closed
73	B.1.27.1-W-02 Explain how often masonry walls are inspected for cracking. Explain if the inspection frequency varies from wall to wall. If the frequency does vary, explain the basis for the differences in frequency. Explain the qualification and training that is required of the inspection personnel. Explain if inspectors use crack maps during the inspections to help in the detection of changes.	Site procedure PP-7026 will be in the program basis document Additional Response: Inspection of masonry walls, in scope of license renewal, are performed each refueling outage. Upon completion of six successive surveillance intervals during a ten year period, the sequence of the inspection is reverted back to the initial sequence interval. The inspections are performed by inspection team comprised of degreed engineers having understanding of structures, materials of masonry construction and masonry wall analysis techniques. The observed instances of cracking are detailed on as-built and considered in record analysis.	Closed
74	B.1.27.1-W-03 Explain if Masonry Wall crack changes are turned over to engineering for evaluation and documentation by procedure. Provide the procedure for performing the Masonry Wall crack inspections. What engineering procedures are used to control and evaluate the attachment of new components to masonry walls evaluated under NRC IEB 80-11? Explain if there is a masonry wall log book or data base to track new attachments to block walls and evaluate the effects on the existing evaluations performed under 80-11?	PP 7026 Rev 1 requires that if during the course of inspection, a "significant finding" is encountered a Condition Report shall be generated and the Civil Structural Supervisor is notified (Section 4.4, PP 7026). PP 7026 is provided for reference. The Engineering Request process is used to control the plants configuration. Walls affected via planned modifications are identified during the design process and the analysis of record and design drawings reflecting I. E. B. 80-11 are updated accordingly. Administrative controls require that proposed new attachments are reviewed by the Civil Structural Department (Section 4.4.5, PP 7026). A log book is maintained by the Civil Structural Department with a summary findings memo and surveillance walkdown sheets (Form VYPPF 7026.01 and Section 4.4.7, PP 7026). Attachments include the Vermont Yankee Masonry Wall Routine Surveillance for RFO 25 in which three corrective updates were performed for observed discrepancies. The CR generated for correcting the drawings is also attached along with a corrected drawing for example.	Closed

Item	Request	Response	Status
75	B.1.27.2-W-01 The program description in the LRA for the Structures Monitoring Program (B.1.27.2) makes no reference to GALL, Section XI.S7, RG 1.127, Inspection of Water-Control Structures Associated With Nuclear Power Plants. GALL XI.S7 states that for plants not committed to RG 1.127, Revision 1, aging management of water-control structures may be included in the Structures Monitoring Program. However, details pertaining to water-control structures are to incorporate the attributes of GALL XI.S7. Explain if VYNPS is committed to RG 1.127 Revision 1 for inspection of its water control structures (such as Intake Structure). If VYNPS is not committed to RG 1.127 Revision 1, explain how the 10 element attributes of GALL XI.S7 are incorporated into the VYNPS Structures Monitoring Program.	The water-control structure at VYNPS is the intake structure. There are no earthen water control structures at VYNPS. The attributes of the Water Control Structures, GALL XI.S7 aging management program applicable to the intake structure are incorporated in the VYNPS Structures Monitoring Program as described below. Attributes of the GALL XI.S7 aging management program that are not incorporated in the Structures Monitoring Program primarily apply to earthen structures. 1) Scope – The scope of the GALL XI.S7 program applicable to VYNPS is the intake structure. The intake structure is included in the scope of the Structures Monitoring Program as delineated in Table 3.5.2-3. 2) Preventive actions – The GALL XI.S7 program includes no preventive actions. 3) Parameters Monitored – The aging effect requiring management for concrete structural components of the intake structure is loss of material which is consistent with GALL Volume 2 item II.A6-7. The parameters monitored from the GALL XI.S7 program applicable to loss of material are consistent with those monitored by the Structures Monitoring Program. The guidance for inspections of concrete in Section C.2 of RG 1.127 is consistent with the guidance in ACI 349.3 used in the Structures Monitoring Program. 4) Detection of Aging – GALL XI.S7 identifies visual inspection methods as the primary method used to detect aging. The Structures Monitoring similarly uses visual inspection methods as the primary method used to detect aging in concrete structural components. GALL XI.S7 identifies inspection intervals of five years. The Structures Monitoring Program identifies similar inspection intervals of three years for accessible areas, ten years for inaccessible areas and opportunistic inspections for buried components. 5) Monitoring and Trending – Monitoring is by periodic inspection for both the GALL XI.S7 and Structures Monitoring Programs. 6) Acceptance Criteria – Acceptance criteria is not identified in RG 1.127, however appropriate guidance is provided in the Structures Monitoring Program to ensure corrective measures are identified prior to loss of intended function. 7-9) The corrective actions, confirmation process and administrative control attributes of the Structures Monitoring Program and the GALL XI.S7 program are consistent. 10) Operating Experience – The operating experience relevant to the effectiveness of the Structures Monitoring Program is presented in Appendix B of the application and is consistent with the operating experience described in GALL XI.S7. Therefore, the attributes of the NUREG-1801 XI.S7, Water Control Structures, aging management program pertaining to the intake structure are incorporated within the VYNPS Structures Monitoring Program.	Closed

Item	Request	Response	Status
76	B.1.27.2-W-02 Explain why the drywell floor liner seal and other components are not part of the ASME Section XI subsection IWE inspection program. Justify this exclusion. Explain why the inspection of crane rails and girders are not under an Inspection of Overhead Heavy Load and Light Load Handling Systems AMP. Explain if all the structures and components being added to the Scope of Program for this AMP by enhancement are currently inspected by another program, since the SMP is an existing program.	LRA Amendment The drywell floor liner seal (moisture barrier) is examined under the Containment Inservice Inspection-IWE Program and will remain under the CII-IWE Program during the period of extended operation not the Structures Monitoring Program as shown in LRA Table 3.5.2-1. This approach will require the following. 1) Update LRPD-02, Section 4.14.2 Item B.4 by adding "The CII Program manages cracking and change in material properties for drywell shell to floor seal (moisture barrier) elastomers" 2) Update LRPD 02, Section 4.21.1 Items B.1.a and b "Enhancement" and Item 10.D. "Summary" to delete "drywell floor liner seal" from the discussion. 3) Update LRA Table Line Item "Drywell floor liner seal" for Table item "AMP" change "Structures Monitoring" to "CII-IWE". For clarification, change "drywell floor liner seal" to "drywell shell to floor seal (moisture barrier)" The clarification of the terminology also applies to Table 2.4-1 and Section B.1.27.2. (This change requires an amendment letter to the LRA) The Periodic Surveillance and Preventive Maintenance and Structures Monitoring Programs adequately manage aging effects for cranes and girders. Therefore, a separate program (i.e., inspection of overhead heavy load and light load handling system) is not necessary. Not all the miscellaneous structures and components added by the enhancement to the SMP are currently inspected under another program.	Accepted
77	B.1.27.2-W-03 Explain if VYNPS has any porous concrete sub foundations and a site dewatering system. Explain if the Structures Monitoring Program requires periodic sampling and testing of groundwater to determine and confirm that that the below grade water chemistry/soil is non-aggressive to concrete structures below grade. Provide the results for the two most recent tests and provide the scheduled frequency of groundwater monitoring. Explain if there is any seasonal consideration for groundwater monitoring.	License Renewal Commitment #33 LRA Amendment VNPS does not have porous concrete sub foundations or a site dewatering system. The inspection team was provided with the results of the two most recent reported groundwater samples as submitted to the State of Vermont. These samples are currently obtained twice yearly, primarily around the plant septic systems (some of the sampling wells are near plant structures). The results of these samples are provided to the State of Vermont in accordance with our Indirect Discharge Permit. The Structures Monitoring Program will be enhanced, (License Renewal Commitment #33) to ensure an engineering evaluation is made on a periodic basis (at least once every five years) of groundwater samples to assess for evidence of groundwater being aggressive to concrete. Historically, VYNPS groundwater samples have shown some level of seasonality in that the wells adjacent to roadways have slightly higher levels of chlorides due to salt treatment.	Accepted
78	B.1.27.2-W-04 Will VYNPS take advantage of inspection opportunities for structures required for license renewal and identified as inaccessible? As inaccessible areas become accessible by such means as excavation or other reason, will additional inspections of those areas be performed?	Yes. VYNPS will and currently does take advantage of inspection opportunities for underground structures that become accessible by excavation. This inspection is already part of the program.	Closed

Item	Request	Response	Status
79	B.1.27.2-W-05 Explain how the frequency of inspection for the structures, buildings and components within the scope of this program are affected when aging effects are discovered.	Vermont Yankee's current structures monitoring program is performed by Design Structural Engineers in accordance with PP 7030, Structures Monitoring Program Procedure. Our surveillance tracking program ensures that this inspection is performed on a three year interval. Any adverse condition discovered during inspections of buildings, structures and components would be entered into Entergy's Corrective Action Process through the initiation of a Condition Report in the PCRS tracking system. The Corrective Action Program defines further responses to the discovered condition. Attributes considered through the corrective action will include, as applicable, apparent cause evaluation, root cause evaluation, extent of condition, consideration of Operating Experience, required corrective action and follow-up verification. Frequency of future inspections will also be considered through the Corrective Action Process.	Closed

Item	Request	Response	Status
80	B.1.27.2-W-06 Explain if the inspection acceptance criteria for the Structures Monitoring Program is based on ACI 349.3R-96, and if not, provide the industry codes, standards and guidelines that the acceptance criteria is based on. Explain the basis of the acceptance criteria for crane rail/girder inspections and drywell floor liner seal.	LRA Amendment The VYNPS Structures Monitoring Program is controlled by PP 7030, Structures Monitoring Program Procedure. The standards used to develop and conduct the program are listed in Sect. 5.2 of the procedure. The specific standard used to develop inspection requirements for this procedure is NEI 96-03, "Nuclear Energy Institute, Industry Guideline for Monitoring the Condition of Structures at Nuclear Power Plants", Section 3.3 "Examination Guidance." Inspection requirements of commodities taken from NEI-96-03 are delineated in Section 4.3.3 of PP7030. A comparison of the relevant guidelines for concrete structural components in PP7030, with the guidelines of ACI 349.3 Chapter 5 "Evaluation Criteria" indicates general consistency. 1) Both documents specify visual inspection methods for the examination of structures. 2) Both documents provide guidance for the inspections for the following parameters and conditions: Concrete components: spalling, cracking, delamination, honey combs, water in-leakage, chemical leaching, peeling paint, or discoloration Structure Settlement: excessive total or differential settlement Structural/seismic gap: insufficient space for structural movement during a seismic event (i.e., exclusion of foreign objects or debris); deteriorated elastomer type filler. 3) ACI 349.3R96 Chapter 5 provides acceptable limits beyond which further evaluation is required. PP7030 Section 4.8 conservatively requires evaluation of identified degradation. Based upon this comparison, the guidance for inspections provided in PP7030 is consistent with the guidelines in ACI 349.3R96. The acceptance criteria for crane rail/girder inspections are contained in the preventive maintenance tasks for the crane inspection. Procedure OP 2200 provides the inspection and acceptance criteria for crane rail/girders. The procedure criteria is based on the following codes and standards ANSI B30.2-83 "Overhead and Gantry Cranes" and NUREG-0612, Control of Heavy Loads at Nuclear Power Plants". The acceptance criteria for the drywell shell to floor liner seal (moisture barrier) is covered under 4.14.2, Containment Inspection Program. See the response to Item 76 for additional discussion on this seal. For additional discussion, see Item #243 response.	Accepted

Item	Request	Response	Status
81	B.1.27.2-W-07 VYNPS lists the following structure issues under operating experience for this AMP. • Concrete pad above JD diesel generator day tank sinking and cracking • Degradation of Cooling Tower structural column Provide the documentation for these issues showing when, where and how they were discovered. Also, provide the documentation on how these issues were evaluated and resolved with a discussion on the need for any follow-up inspections. Provide the most recent inspection results for the reactor building overhead crane rails/girders, reactor building (a few examples of areas where aging has been discovered), cooling towers, and intake structure (a few examples of areas where aging has been discovered). Provide the last three inspection reports for the drywell floor liner seal.	LRA Amendment Documentation of the operating experience with structural repairs was provided to the Inspection Team in the following format: Concrete pad above the JD diesel generator day tank WO 99-1090-000 WO 99-9746-001 Degradation of cooling tower structural columns WO 05-5158-000 WO 97-5357-004 WO 97-5327-00 WO 03-1243-009 Intake structure floor concrete repair WO 04-1745-000 The concrete pad above the JD diesel generator day tank is in a high traffic area. Degradation was identified by personnel transiting the area. The cracked concrete slab was replaced. This was essentially a design issue, in that the original pad was not designed to bear the weight of the fuel oil delivery truck. The reference WO replaced the pad and added bollard columns to prevent vehicles from driving over the pad. No further follow-up inspections are required. Degradation of cooling tower structural columns was discovered during routine fall and spring structural inspection PMs. These columns were replaced in kind. Follow-up inspections are performed during the routine fall and spring structural inspection PMs. The most recent inspection and repair results for the Turbine Building overhead crane were provided to the Inspection Team. Included were reports of two different inspections, repair information and monitoring plans. Both the Reactor and Turbine Building overhead cranes are in scope of the Maintenance Rule and are subject to the same inspection and corrective action programs. Recent Reactor Building overhead crane inspections have identified only mechanical and electrical deficiencies (i.e. trolley motors, brakes, etc.). The results for the Turbine Building overhead crane were provided in lieu of the Reactor Building overhead crane because the recent inspection results involve structural elements and show the effectiveness of the Maintenance Rule crane inspection program. The Structures Monitoring Program will be enhanced (Project document revision) to describe how the program takes credit for the structural inspection program being performed through the Maintenance Rule crane inspection program. Examples of inspections for cooling tower aging are included in the referenced WOs above. As stated in other responses, LRDP-02 will be revised to indicate that the drywell floor liner seal will be covered under the containment inspection program, not the structures monitoring program. The seal was replaced two refueling outages ago, and the seal inspection report for last outage has already been provided to the inspection team.	Accepted

Item	Request	Response	Status
		Degradation of intake structure floor concrete was discovered during routine diver PM inspections performed every refueling outage. The small washed out area was repaired with an underwater concrete repair product. Follow-up routine diver PM inspections will be performed every refueling outage.	
82	B.1.27.3-W-01 Explain which VYNPS individual is responsible for the coordination of Vernon Dam FERC inspections. Explain the process of VYNPS interfacing with FERC with respect to Vernon Dam and if there are any plant procedures for the interface. If there are plant procedures for dealing with FERC, provide a current copy. Explain if VYNPS has any influence on what and when repairs are made on Vernon Dam from a management or economic standpoint. Provide the most recent Vernon Dam assessment performed by FERC. Explain how VYNPS receives the report and if the report is independently reviewed by any VYNPS personnel such as in systems or design engineering.	RAI 3.6.2.2.N-08 There has not been any need for site to coordinate or interface with Vernon Dam's Federal Energy Regulatory Commission (FERC) inspection. VYNPS does not have an individual responsible for coordinating, interfacing, collecting and reviewing FERC inspection report. There is no site procedure for dealing with FERC and obtaining a current copy. Reports are normally received on site after each inspection. VYNPS does not have any influence on what and when repairs should be made from management or economics standpoint. CLOSED TO RAI 3.6.2.2.N-08	Closed
83	B.1.27.3-W-02 The operating experience for this AMP states that daily inspections are made of Vernon Dam and periodic underwater inspections are made on the Dam. Explain what organization makes the daily inspections and the underwater inspections. Explain how often the underwater inspections are performed and what determines the frequency. Explain if VYNPS has ever independently inspected Vernon Dam. Explain if any flooding has occurred which required additional FERC inspections beyond the normal 5 year. The operating experience states that areas of degradation were found on Vernon Dam during the 2002 FERC inspection and will continue to be monitored. Explain if the continued monitoring is by FERC on a five year cycle or by VYNPS personnel on a more frequent basis. Explain the type and number of staff that work at Vernon Dam on a daily basis to maintain it. Explain if and how any personnel at Vernon Dam have the ability to communicate immediately with responsible individuals at VYNPS should a problem develop at the Dam which could affect the availability of plant cooling water.	RAI 3.6.2.2.N-08 As stated in LRA section 2.4.5, Vernon Dam is not part of the site structures owned by VYNPS. Dam inspections are regulated by the Federal Energy Regulatory Commission (FERC), which licenses the dam and associated power block. Daily inspections are performed by the dam owner's (e.g. Trans Canada, maintenance personnel. And, underwater inspections are performed by divers once every 5 years as required by FERC. No evidence of flooding to require additional FERC inspections beyond the normal 5 year. As stated in the inspection reports, maximum rise in stage cause by a breach will not exceed 1.7 feet under either 50 or 100 year flood condition. The areas of degradation, found on Vernon Dam during the 2002 FERC inspection, are monitored by FERC on a five year cycle. However, daily inspection by the dam owner also supplements these inspections. Number and type of staff at Vernon Dam on daily basis is not known. Although not proceduralized, any significant problem with dam is expected to be communicated to the site. In accordance with NEI 95-10, Rev. 6, Appendix C, Reference 4 (pages C-20 through C-25), "License Renewal Issue No. 98-0100, Crediting FERC-Required Inspection and Maintenance Programs for Dam Aging Management," FERC inspections may be credited for aging management activities. The Vernon Dam is under FERC jurisdiction and that its inspection and maintenance program is in conformance with FERC requirements. The NRC guidance in the referenced section of NEI 95-10 states "It is the staff's opinion that dam inspection and maintenance programs under the jurisdiction of FERC or the Army Corps of Engineers, continued through the period of the license renewal, will be adequate for the purpose of aging management (page C-25)." During the period of the onsite inspection Vermont Yankee Staff provided a copy of the most recent FERC inspection for the Vernon dam to the NRC Staff. CLOSED TO RAI 3.6.2.2.N-08	Closed

Item	Request	Response	Status
84	B.1.30.1-M-01 Since the applicant is currently and periodically sampling and analyzing the cooling water of the other systems "controlled" by VYNPS's existing program—the stator cooling water and plant heating boiler systems—is it also the intent of the applicant to periodically sample and analyze the John Deere Diesel cooling water system?	License Renewal Commitment #26 No, as stated in LRA Section B.1.30.1, rather than sampling, procedures will be enhanced (License Renewal Commitment 26) to flush the John Deere diesel cooling water system and replace the coolant and coolant conditioner every three years.	Accepted
85	B.1.30.2-M-01 Section XI.M2 of the GALL notes that a "water chemistry only" program may not be fully effective for verification of corrosion or SCC in slow flow or stagnant flow areas. The GALL further suggests that for some of these "susceptible locations" a one-time inspection verification program may be appropriate. Do you intend to implement a "one-time inspection (or some other program) to verify existence of corrosion or SCC in these "susceptible locations"?	LRA Amendment Yes, the one-time inspection program described in LRA Section B.1.21 includes inspections to verify the effectiveness of the water chemistry control aging management programs by confirming that unacceptable cracking, loss of material, and fouling is not occurring. To provide further clarification, the effectiveness of the Water Chemistry Control – Auxiliary Systems, BWR, and Closed Cooling Water programs is confirmed by the One-Time Inspection program. This requires an amendment to the license renewal application to change the Appendix A, SAR supplement descriptions for the Water Chemistry Control –Auxiliary Systems, BWR and Closed Cooling Water programs to explicitly state One-Time Inspection Program activities will confirm the effectiveness of these programs.	Accepted
86	B.1.30.2-M-02 Section XI.M2 - Element Number four (4) - of the GALL notes that the staff considers a BWR water chemistry program as a "...mitigation program and (that it) does not provide detection of any aging effects...". The GALL further states that "...inspection of select components (should) be undertaken to verify the effectiveness of the program..." The applicant's AMP does not present any other program - other than the indirect results of their existing water chemistry program - to verify effectiveness of the chemistry control program. Do you intend to perform "other" inspections, as suggested by the GALL, "...to ensure that significant degradation is not occurring and that intended functions of system components will be maintained during the extended period of operation..."?	LRA Amendment Yes, the one-time inspection program described in LRA Section B.1.21 includes inspections to verify the effectiveness of the water chemistry control aging management programs by confirming that unacceptable cracking, loss of material, and fouling is not occurring. To provide further clarification, the effectiveness of the Water Chemistry Control – Auxiliary Systems, BWR, and Closed Cooling Water programs is confirmed by the One-Time Inspection program. This requires an amendment to the license renewal application to change the Appendix A, SAR supplement descriptions for the Water Chemistry Control –Auxiliary Systems, BWR and Closed Cooling Water programs to explicitly state One-Time Inspection Program activities will confirm the effectiveness of these programs.	Accepted

Item	Request	Response	Status
87	B.1.30.3-M-01 The applicant's exception for this AMP states that "...monitoring pump performance parameters is of little value in managing effects of aging on long-lived, passive CCW system components..". The associated GALL for this AMP (XI.M21; Element 4) states that "...control of water chemistry does not preclude corrosion or SCC at locations of stagnant flow conditions or crevices...". How does this AMP ensure that a stagnant flow condition or crevice will not be periodically present in system piping during the period of extended operation?	LRA Amendment This AMP does not ensure that a stagnant flow condition or crevice will not be periodically present in system piping during the period of extended operation. Preventing stagnant flow conditions is not a recommended preventive action in NUREG-1801, Section XI.M21. As stated in LRA Section B.1.20.3, passive intended functions of pumps, heat exchangers and other components will be adequately managed by the Water Chemistry Control - Closed Cooling Water Program through monitoring and control of water chemistry parameters. Also the one-time inspection program described in LRA Section B.1.21 includes inspections to verify the effectiveness of the water chemistry control aging management programs by confirming that unacceptable cracking, loss of material, and fouling is not occurring. To provide further clarification, the effectiveness of the Water Chemistry Control – Auxiliary Systems, BWR, and Closed Cooling Water programs is confirmed by the One-Time Inspection program. This requires an amendment to the license renewal application to change the Appendix A, SAR supplement descriptions for the Water Chemistry Control –Auxiliary Systems, BWR and Closed Cooling Water programs to explicitly state One-Time Inspection Program activities will confirm the effectiveness of these programs.	Accepted
88	B.1.30.3-M-02 [Original Question] The applicant's exception for this AMP also states that "....in most cases, functional and performance testing verifies that the component active functions can be accomplished and as such would be included as part of the maintenance rule...". Does this AMP reference or refer to "maintenance rule activities" as part of planned aging management actions; i.e., actions which address GALL XI.M21 "parameters monitored/inspected"? [Follow-up Question] Clarify commitment to performance monitoring/testing of HX (fouling) and pumps (LoM) managed using OCCW (SWI) and CCCW (WCC–Aux & WCC–CCW) AMPs.	License Renewal Commitment #16 [Original Response] No, functional and performance testing are not aging management actions. They are maintenance rule activities and not part of the Water Chemistry Control - Closed Cooling Water Program. As stated in LRA Section B.1.30.3, the Water Chemistry Control - Closed Cooling Water Program takes exception to this recommendation of NUREG 1801, Section XI.M21. [Follow-up Response] As stated in Section 4.20 of LRPD-02, the Service Water Integrity Program, in accordance with NRC GL 89-13, includes condition and performance monitoring activities. As these activities are already part of the existing program, a separate commitment is not necessary. As stated in the LRA and prior RAI responses, the Water Chemistry Control – Auxiliary Systems and Water Chemistry Control – Closed Cooling Water programs do not include performance or functional testing of heat exchangers or pumps. The programs are preventive programs which maintain the water chemistry within specified limits to minimize loss of material, cracking and fouling. Also, as described in LRA Section B.1.21, the One-Time Inspection program will verify the effectiveness of the water chemistry control aging management programs by confirming that unacceptable cracking, loss of material, and fouling is not occurring. Therefore, the passive intended functions of pumps, heat exchangers, and other components will be adequately managed without condition or performance monitoring. [Condition and performance testing of heat exchangers and pumps is performed under the Maintenance Rule 10CFR50.65, but is not considered part of these aging management programs.]	Accepted

Item	Request	Response	Status
89	A-P-01 Please clarify the rationale for the unusual numbering system used for auxiliary systems after the first 12. (Note: This question is arbitrarily linked to the first item of Table 3.3.1-13-1)	Section 13 includes all the systems that have intended functions that meet 10 CFR 54.4(a)(2) for physical interaction. The aging management review of these systems that have functions that met 10 CFR 54.4(a)(2) for physical interaction was done separately from the review of systems with intended functions that met 10 CFR 54.4 (a)(1) or (a)(3). The results of this review therefore needed to be presented separately so that they could be distinguished from the 10 CFR 54(a)(1) and (a)(3) review. Table 3.3.1-13 would be the next sequential table number after the remainder of the auxiliary system tables. To indicate individual systems included in the aging management review for (a)(2), Table 3.3.1-13 is subdivided by system. For example, Table 3.3.1-13-1 is for the augmented off gas system, a system which only has components included for (a)(2). For the core spray system, Table 3.3.1-13-6 shows the components included for (a)(2) but since the system is also in scope for other reasons, Table 3.2.2-2 shows the components included for 54.4(a)(1) and (a)(3). This numbering system was chosen so that these systems and the components that had intended functions unique for 54.4(a)(2) could be uniquely identified and reviewed separately. This allows a reviewer to clearly distinguish which component types in a system were included for 10 CFR 54.4(a)(2) for physical interaction. Since most of these systems are auxiliary systems they were added as part of the auxiliary systems section.	Closed
90	3.1.1-14-P-01 "Support" is not listed as an intended function Please clarify which IF (SNS, SRE, and/or SSR) is intended.	This response assumes that the question is referring to the tables in Section 3.3.2-13 for components included for 10 CFR 54.4(a)(2). This function is described in Section 2.3.3.13 under "System Description (pg. 2.3-65) and in the definition in Table 2.0-1 for "Pressure boundary." As shown in the component type tables in Section 2.3.3-13, a footnote states "For component types included under 10 CFR54.4(a)(2), the intended function of pressure boundary includes providing structural/seismic support for components that are included for non-safety-related SSCs directly connected to safety-related SSCs" when this function is appropriate. Pressure boundary was only used because there is no difference in the aging management review regardless of whether the component intended function is pressure boundary or structural support, and if the pressure boundary intended function of the component is maintained the structural support function will be maintained. This definition of providing structural/seismic support would be equivalent to the intended function of SSR as defined in Table 2.0-1.	Closed

Item	Request	Response	Status
91	3.6.2.2-N-01 In LRA, Table 3.6.2-1, under Cable connections (metallic parts), you have stated that no aging effects requiring management and no AMP is required. Further, in LRA, Table 3.6.1 under discussion of cable connection metallic parts, you have stated that cable connections outside of active devices are taped or sleeved for protection and operating experience with metallic parts of electrical cable connections at VYNPS indicated no aging effects requiring management. Electrical cable connections (metallic parts) are subject to the following aging stressors: thermal cycling, ohmic heating, electrical transients, vibration, chemical contamination, corrosion, and oxidation. NUREG-1801, Revision 1, AMP XI.E6, "Electrical Cable Connection not Subject to 10 CFR 50.49 Environmental Qualification Requirements," specifies that connections associated with cables within the scope of license renewal are part of this program, regardless of their association with active or passive components. Also, refer to pages 107, 256, and 257 of NUREG-1833, "Technical Bases for Revision to the License Renewal Guidance Documents," for additional information regarding AMP XI.E6. Provide a basis document including an AMP with the ten elements for cable connections or provide a justification for why an AMP is not necessary.	RAI 3.6.2.2.N-01 VYNPS electrical AMR AMRE-01 in section 4.1.4.4 states for cable connections (metallic parts) "An evaluation of thermal cycling, ohmic heating, electrical transients, vibration, chemical contamination, corrosion, and oxidation stressors for the metallic parts of electrical cable connections identified no aging effects requiring management: •Metallic parts of electrical cable connections potentially exposed to thermal cycling and ohmic heating are those carrying significant current in power supply circuits. Typically, power cables are in a continuous run from the supply to the load. Therefore, the connections are part of an active component that is controlled by Maintenance Rule and is not subject to aging management review. •The fast action of circuit protective devices at high currents mitigates stresses associated with electrical faults and transients. In addition, mechanical stress associated with electrical faults is not a credible aging mechanism because of the low frequency of occurrence for such faults. Therefore, electrical transients are not applicable stressors. •Metallic parts of electrical cable connections exposed to vibration are those associated with active components that cause vibration. Since active components are controlled by Maintenance Rule, they are not subject to aging management review. •Corrosive chemicals are not stored in most areas of the plant. Routine releases of corrosive chemicals to areas inside plant buildings do not occur during plant operation. Such a release, and its effects, would be an event, not an effect of aging. The location of electrical connections inside active components protects the metallic parts from contamination. Therefore, this stressor is not applicable. •Oxidation and corrosion usually occur in the presence of moisture or contamination such as industrial pollutants and salt deposits. Enclosures or splice materials protect metal connections from moisture or contamination. Therefore, oxidation and corrosion are not applicable stressors. Based on the evaluations of the stressors above, there are no aging effects requiring management for metallic components of connections and no AMP is required CLOSED TO RAI 3.6.2.2.N-01	Closed

Item	Request	Response	Status
92	3.6.2.2-N-02 In LRA, Table 3.6.2-1, under switchyard bus (switchyard bus for SBO) and connections you have stated no aging effects requiring management and no AMP is required. NUREG 1800, Rev. 1, Standard Review Plan for Review of License Renewal Application for Nuclear Power Plants, Section 3.6.2.2.3 identifies loss of preload is an aging effect for switchyard bus connections. Torque relaxation for bolted connection is a concern for switchyard bus connections. An electrical connection must be designed to remain tight and maintain good conductivity through a large temperature range. Meeting this design requirement is difficult if the material specified for the bolt and the conductor are different and have different rates of thermal expansion. For example, copper or aluminum bus/conductor materials expand faster than most bolting materials. If thermal stress is added to stresses inherent at assembly, the joint members or fasteners can yield. If plastic deformation occurs during thermal loading (i.e., heat-up) when the connection cools, the joint will be loose. EPRI document TR-104213, "Bolted Joint Maintenance & Application Guide," recommends inspection of bolted joints for evidence of overheating, signs of burning or discoloration, and indication of loose bolds. Provide a discussion why torque relaxation for bolted connections of switchyard bus is not a concern for VYNPS.	VYNPS electrical AMR Section 4.3.4 of AMRE-01. Connection surface oxidation for aluminum switchyard bus is not applicable since all switchyard bus connections requiring AMR are welded connections. No aging effects have been identified for welded connections on switchyard bus for SBO.	Closed

Item	Request	Response	Status
93	3.6.2.2-N-03 Provide AMR line item for transmission conductor connections in Table 3.6.2-1. Address any aging effects requiring management.	LRA Amendment LRA Table 3.6.1 and section 3.6.2.2.3 will be revised as shown below: Table 3.6.1 item # 12 – Transmission conductors and connections. Aging Effects – Section 3.6.2.2.3 Transmission conductors are un-insulated, stranded electrical cables used outside buildings in high voltage applications. The transmission conductor commodity group includes the associated fastening hardware, but excludes the high-voltage insulators. Major active equipment assemblies include their associated transmission conductor terminations. Transmission conductors are subject to aging management review if they are necessary for recovery of offsite power following an SBO. At VYNPS, transmission conductors located between switchyard breakers K-1/K-186 and startup transformers T-3-1A/T-3-1B support recovery from an SBO event. Other transmission conductors are not subject to aging management review since they do not perform a license renewal intended function. AMRE-01 The aging effect for transmission conductors found in industry reviews are loss of conductor strength and loss of material (wear). The prevalent mechanism contributing to loss of conductor strength of an ACSR transmission conductor is corrosion, which includes corrosion of the steel core and aluminum strand pitting. Corrosion in ACSR conductors is a very slow acting mechanism, and the corrosion rates depend on air quality, which includes suspended particles chemistry, SO2 concentration in air, precipitation, fog chemistry and meteorological conditions. Air quality in rural areas generally contains low concentrations of suspended particles and SO2, which keeps the corrosion rate to a minimum. Tests performed by Ontario Hydroelectric showed a 30% loss of composite conductor strength of an 80 year old ACSR conductor due to corrosion. ACAR conductors are more resistant to loss of conductor strength since the core of the conductor is an alloy of steel and corrosion resistant metals. AMR conclusions regarding ACSR conductors conservatively bound ACAR conductors. The National Electrical Safety Code (NESC) requires that tension on installed conductors be a maximum of 60% of the ultimate conductor strength. The NESC also sets the maximum tension a conductor must be designed to withstand under heavy load requirements, which includes consideration of ice, wind and temperature. These requirements are reviewed concerning the specific conductors included in scope at VYNPS. The 4/0 ACSR conductors have the lowest initial design margin of any transmission conductors included in the AMR. The Ontario Hydro test and the NESC requirements illustrate with reasonable assurance that transmission conductors will have ample strength through the period of extended operation. Therefore, loss of conductor strength due to corrosion of the transmission conductors in not an aging effect requiring management for the period of extended operation. Loss of material due to mechanical wear can be an aging effect for strain and	Accepted

Item	Request	Response	Status
		suspension insulators that are subject to movement caused by transmission conductor vibration or sway from wind loading. Design and installation standards for transmission conductors consider sway caused by wind loading. Experience has shown that transmission conductors do not normally swing and that when they do swing because of substantial wind, they do not continue to swing for very long once the wind has subsided. Wear has not been identified during routine inspection; therefore, loss of material due to wear in not an aging effect requiring management. This report documents a review of industry OE and NRC generic communications related to the aging of transmission conductors in order to ensure that no additional aging effects exist beyond those previously identified. This report also documents a review of plant-specific OE, which did not identify any unique aging effects for transmission conductors.	
94	3.6.2.2-N-04 In LRA, Table 3.6.2-1, under Transmission conductors, you have stated that no aging effects requiring management and no AMP is required. NUREG 1800, Rev. 1, Standard Review Plan for Review of License Renewal Application for Nuclear Power Plants, Section 3.6.2.2.3 identifies loss of conductor strength due to corrosion is the aging effect of high voltage transmission conductor. The most prevalent mechanism contributing to loss of conductor strength of aluminum core steel reinforce (ACSR) transmission conductor is corrosion which includes corrosion of steel core and aluminum strand pitting. Degradation begins as a loss of zinc from the galvanized steel core wires. Corrosion rate depend largely on air quality, which includes suspended particles chemistry, sulfur dioxide concentration in air, precipitation, fog chemistry and meteorological conditions. Explain why loss of conductor strength due to corrosion is not an aging effect requirement management for transmission conductors at VYNPS.	VYNPS electrical AMR Section 4.2 in AMRE-01. The prevalent mechanism contributing to loss of conductor strength of an ACSR transmission conductor is corrosion, which includes corrosion of the steel core and aluminum strand pitting. Corrosion in ACSR conductors is a very slow acting mechanism, and the corrosion rates depend on air quality, which includes suspended particles chemistry, SO2 concentration in air, precipitation, fog chemistry and meteorological conditions. Air quality in rural areas generally contains low concentrations of suspended particles and SO2, which keeps the corrosion rate to a minimum. Tests performed by Ontario Hydro showed a 30% loss of composite conductor strength of an 80-year old ACSR conductor due to corrosion. The National Electric Safety Code (NESC) requires that tension on installed conductors be a maximum of 60% of the ultimate conductor strength. The acceptance criteria for VYNPS is less than 40% loss of composite conductor strength per NESC. Aluminum conductor alloy reinforced (ACAR) conductors are used at VYNPS as well as ACSR conductors. ACAR conductors are more resistant to loss of conductor strength since the core of the conductor is an alloy of steel and corrosion resistant metals. Conclusions for ACSR conductors conservatively bound ACAR conductors. The National Electric Safety Code (NESC) requires that tension on installed conductors be a maximum of 60% of the ultimate conductor strength. The acceptance criteria for VYNPS is less than 40% loss of composite conductor strength per NESC. Aluminum conductor alloy reinforced (ACAR) conductors are used at VYNPS as well as ACSR conductors. ACAR conductors are more resistant to loss of conductor strength since the core of the conductor is an alloy of steel and corrosion resistant metals. Conclusions for ACSR conductors conservatively bound ACAR conductors. Therefore, corrosion of transmission conductors is not aging effect requiring management and an AMP is not required.	Closed

Item	Request	Response	Status
95	3.6.2.2-N-05 In LRA, Table 3.6.2-1, under high voltage insulators, you have indicated that no aging effects requiring management and no AMP is required. In LRA, Section 3.6.2.2 .2, you have also stated that at VYNPS surface contamination build-up on insulator is not a concern. NUREG 1800, Rev. 1, Standard Review Plan for Review of License Renewal Application for Nuclear Power Plants, Section 3.6.2.2.3 identifies surface contamination is the aging effect of high voltage insulators. Various airborne materials such as dust and industrial effluent can contaminate insulator surfaces. The buildup of surface contamination is gradual and in most areas such contamination is washed away by rain; the glazed insulator surface aids this contamination removal. However, a large buildup of contamination enables the conductor voltage to track along the surface more easily and can lead to insulator flashover. Surface contamination can be a problem in areas where there are greater concentration of airborne particles such a near facilities that discharge soot. Explain why surface contamination is not a concern at VYNPS.	Per VYNPS electrical AMR Section 4.4 in AMRE-01: Various airborne materials such as dust, salt and industrial effluents can contaminate insulator surfaces. The buildup of surface contamination is gradual and in most areas. Such contamination is washed away by rain; the glazed insulator surface aids this contamination removal. VYNPS is not located near the seacoast where salt spray is prevalent, or near facilities that discharge soot. At VYNPS, as in most areas of the New England transmission system, contamination build up on insulators is not a problem. Therefore, surface contamination is not an applicable aging mechanism for the insulators at VYNPS.	Closed
96	3.6.2.2-N-06 Are all electrical and I&C containment penetrations EQ? If not, provide AMRs and AMPs for non-EQ electrical and I&C containment penetrations. The AMRs should include both organic (XLPE, XLPO, and SR internal conductor/pigtail insulation, etc.,) as well as inorganic material (such as cable fillers, epoxies, potting compounds, connector pins, plugs, and facial grommets).	Section 3.4.2 in AMRE-01and FSAR Section 5.2.3.4.3 At VYNPS, electrical penetration assemblies are included in the EQ program and are not subject to aging management review.	Closed

Item	Request	Response	Status
97	3.6.2.2-N-07 In LRA, Table 3.6.1 under metal enclosed bus, you have stated that an evaluation of metal enclosed bus for VYNPS determined that VYNPS does not have any phase bus that support a license renewal function. 10 CFR 54.4 (a)(3) requires, in part, that all systems, structures, and components relied on in safety analyses or plant evaluation to perform a function that demonstrates compliance with the commission's regulations for station black out (10 CFR 50.63) are within the scope of license renewal. VYNPS FSAR Section 8.3.3 states that electric power supplied from the transmission network to the on-site electric distribution system by two independent circuits, one immediate access and one delayed access. The immediate access circuit is supplied from the 345 kV transmission system through 345 kV/115 kV auto-transformer. It feeds the on-site electric distribution system through the two 115 kV to 4160 V start up transformers and is available immediately following a loss of generating capability. The delay access circuit is available by opening the generator no-load disconnect switch and establish a feed from the 345 kV switchyard through the main generator step-up transformer and unit auxiliary transformer to the 4160 V safety buses. Answer the following questions and support them with a main one line diagram: 3.6.2.2-7(a). In regard to the above, are non-segregated phase buses used to connect the start up transformers (T-3A and T-3B) (lower sides) to 4.16 kV safety buses? 3.6.2.2-7(b). In regard to the above, are iso phase buses used to connect the delay access circuit from the 345 kV switchyard through the main generator step-up transformer and unit auxiliary transformer? 3.6.2.2-7(c). In regard to the above, are non-segregated phase buses used to connect the unit auxiliary transformer (lower sides) to 4.16 kV safety buses? If the answer to a, b, or c is yes, explain why metal enclosed buses (iso phase and/or non-segregated phase buses) are not in scope of license renewal and not require an AMP.	License Renewal Commitment #32 LRA Amendment Resolution - The VY UFSAR Section 8.3.3 describes three offsite power sources. The immediate access circuit from the 345kV yard through the 345/115kV autotransformer to the startup transformers, the alternate immediate access circuit from the 115kV yard (Keene Line) through the startup transformers. The delayed access circuit is available by opening the generator no-load disconnect switch and establishing a feed from the 345kV switchyard through the main and aux transformers. 3.6.2.2-N-07(a) No, there are no non-segregated phase buses in the path from the startup transformers to the 4.16 safety buses. 3.6.2.2-N-07(b) The delayed access circuit from the 345KV switchyard through the main generator step-up transformer and unit aux transformer uses the iso-phase bus for connection and is in scope for license renewal. The VYNPS Metal-Enclosed Bus program will be consistent with GALL XI.E4. The VYNPS Metal-Enclosed Bus program will perform visual inspection of the internal portions of the bus for cracks, corrosion, foreign debris, excessive dust buildup, and evidence of water intrusion. Internal bus supports will be inspected for structural integrity and signs of cracks. Enclosure assemblies will be inspected for evidence of loss of material and elastomers will be inspected to manage cracking and change in material properties. The first inspection will be completed before the period of extended operation and every five years thereafter. The Metal-Encased Bus Program will be added to the following LRA sections: Section 2.5 – Electrical and I&C Systems Section 3.6 – Electrical and Instrumentation and Controls Table 3.6.1 Table 3.6.2-1 Appendix A Appendix B This requires an amendment to the LRA The Metal-Enclosed Bus Program will be added to the following AMR and AMPER. LRPD-02- Aging Management Program Evaluation Results AMRE-01 – Electrical Screening and AMR This is LR commitment #32. 3.6.2.2-N-07(c) No, there are no non-segregated phase buses in the path from the Unit Aux Transformer to the 4.16 safety buses. Summary The in-scope components required for recovery from a SBO do not include any non-segregated phase bus that requires aging management review.	Accepted

Item	Request	Response	Status
98	3.6.2.2-N-08 10 CFR 54.4 (a)(3) requires, in part, that all systems, structures, and components (SSCs) relied on in safety analyses or plant evaluation to perform a function that demonstrates compliance with the commission's regulations for station black out (10 CFR 50.63) are within the scope of license renewal. Vernon Hydroelectric Station has been designated as the Station Blackout (SBO) alternate ac (AAC) source and is used to meet SBO requirements 10 CFR 50.63. Are all SSCs (including electrical components) associated with Vernon Hydroelectric Station included in the scope of licensee renewal? If they are not, explain why not. If they are, provide an AMR for long-lived, passive SSCs associated with the hydro station.	RAI 3.6.2.2.N-08 The long-lived, passive components from the Vernon dam switchyard to the plant are in scope and subject to AMR. The underground cables and connections are included in E2. The Vernon Dam is regulated by FERC and inspected per FERC regulations.	Closed
99	B.1.27.3-W-03 Are there any other license renewal intended functions other than SBO, associated with the Vernon Dam?	Vernon Dam is used for hydro-electric generation and is the alternate AC source of power for VYNPS. The deep basin beneath the west cooling tower is a safety-related, reinforced concrete structure constructed on bedrock. The basin acts as a reservoir to replace the evaporative and other losses occurring during alternate cooling system (ACS) operation, providing a one-week supply of makeup for the alternate cooling cell in the event of a loss of Vernon Dam. The Vernon Dam has no other intended functions for (10CFR54.4(a)(1) or (a)(2). The Vernon Dam is credited for station blackout (10CFR50.63), intended function 10CFR54.4(a)(3).	Closed
100	The NRC requested additional information on licensing renewal, specifically on how aging management applied to passive components in the Vernon Hydroelectric Station.	The NRC requested additional information on underground cables, buried piping and support systems. The requested information was provided to the NRC during the onsite review. In addition a FERC inspection report was provided for the dam and NPCC Document A-3, Emergency Operational Criteria.	Closed
101	B.1.30.3.M.04 GALL X1.M21 discusses pump and heat exchanger testing in the parameters monitored / inspected attribute. Is this testing part of the Water Chemistry Control - Closed Cooling Water Program?	LRA Section B.1.30.3 includes an exception to the performance and functional testing discussed in the detection of aging effects attribute. This exception and its justification are equally applicable to the parameters monitored / trended attribute.	Closed
102	B.1.9-K-11 Please provide a copy of QA Surveillance 99-010 and more recent QA surveillance of Diesel Fuel Monitoring Program.	Provided QA Surveillance 99-010, QA Audit Report QA-2-2005-VY-1 and CR-VTY-2005-00196.	Closed
103	B.1.9-K-12 Please identify sample point locations on John Deere diesel and diesel fire pump oil storage tanks. (Diesel Fuel Monitoring Program)	Provided Section 5 of OP2106 Rev. 18, App. D JD Diesel day tank sample location is at the bottom of this tank. Fire pump diesel fuel supply & sample point are 2 inches from the bottom of the diesel fire pump fuel tank.	Closed
104	B.1.9-K-13 Please provide 2000 and 2003 sample results spreadsheet. Also sample lab results for main storage tank and EDG day tanks are desired. (Diesel Fuel Monitoring Program)	This information has been provided via spreadsheet of monthly analysis data for the Main Fuel Oil Storage Tank for 2000 and 2003. Also, provided example analysis results for samples from the Walpole NH supplier tank, the John Deere diesel storage tank, the diesel fire pump storage tank, and the EDG day tanks.	Closed
105	B.1.30.3-M-05 Please provide a copy of recent third party assessment of the water chemistry control - closed cooling water program.	Third party assessment of "Chemistry" on May 6, 2003 provided for review. Summary states that closed cooling water systems are monitored and treated to provide a chemical environment that minimizes corrosion rates.	Closed

Item	Request	Response	Status
106	B.1.2.3-M-04 The Reactor Vessel Stud Program takes exception to GALL based on relief request ISI-03. The NRC does not believe this should be an exception. Review the relief request and ASME code. If this is not an exception, revise the program document.	The existing examinations for the reactor vessel closure studs (Category B-G-2) are based on ASME Code Case N-652. Code Case N-652 has been endorsed by the NRC per Table 1 of Regulatory Guide 1.147, Revision 14.	Closed
107	The commitment to manage locations CUF>1.0 should be on a numbered commitment list. The commitment to analyze the limiting location for environmentally assisted fatigue should be on a numbered commitment list. NOTE: The commitment is in section 4 (4.3.3.?) not in App. B	License Renewal Commitment #27 License renewal commitment #27 has been prepared, to address the above items.	Accepted
108	Identify the site specific calculations for core plate hold down bolt preload.	No site specific calculation was found in the VYNPS current licensing basis for the number / preload of the core plate hold-down bolts required to prevent lateral motion of the core plate.	Closed
109	Accurately state / describe the information / documentation requested. Be as specific as possible. The NRC requested a copy of the Vernon hydro-drawing. Not an NRC question. Close item.	This information was provided during the onsite review.	Closed
110	The NRC inspector had a one-line diagram and asked if bus duct was used for the immediate access source or the delayed access source. The inspector was interested if an AMR applied to either source for segregated or non-segregated bus, if used. Not an NRC question. Close item.	Immediate Access: The cables are used from the startup transformers to the 4 KV buses and overhead 115 KV bare cable is used to supply the transformers with bus above the transformers. Delayed Access: There is isophase bus duct used on the back-feed for the 22 KV system and it connects to the auxiliary transformer.	Closed
111	Please provide results of the last inspection of the welds between the rerouted CRD return line and the RWCU system. (BWR CRD Return Line Nozzle Program)	Provided results of 1985 inspection	Closed
112	Please provide documentation related to resolution of vessel clad cracking.	Provided documentation as requested during NRC interview.	Closed
113	The BWR penetrations program second exception allows a smaller inspection than the code (1/2" vs. 1/2" vessel wall thickness). What is the basis for this?	The inspection of the vessel penetrations to1/2' versus 1/2T was approved via Relief Request ISI-09. This relief request is in turn based on ASME Code Case N-613-1. Code case N-613-1 has been endorsed by the NRC per Table 1 of Regulatory Guide 1.147, Revision 14, August 2005. This is conservatively identified in the BWR Penetrations Program description as an exception to GALL because it required relief to the existing code requirements.	Closed

Item	Request	Response	Status
114	Do the VY penetration nozzles have a bored (cold worked) safe end extension? If yes, they require additional inspection.	This question was erroneously applied to the vessel instrumentation nozzles. BWRVIP-49-A requires no additional inspection requirements for cold worked safe ends for the instrumentation nozzles. The question should have been directed at the SLC/DP nozzle, for which the discussion of cold worked safe ends is found in the BWRVIP-27-A inspection guideline 3.4.1. Per drawing 5920-52666 R0 implementing the inspection guidelines of BWRVIP-27-A as applicable to VY, but that does not include the entire safe end extension examination required of those plants with cold worked safe ends.	Closed
115	Accurately state / describe the information / documentation requested. Be as specific as possible. LRPD-05 section 4.4.1 second paragraph states that the BWR CRD Return Line Nozzle program provides reasonable assurance. Should this have been the Buried Piping Inspection Program?	Yes, this is a typographical error and it should have said that the Buried Piping Inspection Program provides reasonable assurance that the effects of aging will be managed such that the current licensing basis for the period of extended operation. This item has been addressed through revision of LRPD-05.	Closed
116	B.1.17-N-04 GALL X1.E3 under program description states, in part, that periodic actions such as inspecting for water collection in cable manholes, and draining water, as needed to prevent cables from being exposed to significant moisture. The above actions are not sufficient to assure water is not trapped elsewhere in the raceways. In addition to the above periodic actions, in scope, medium voltage cables are tested to provide an indication of the condition of the conductor insulation. VYNPS AMP B.1.17 under same element states that periodic actions will be taken to prevent cables from being exposed to significant moisture, such as inspecting for water collection in cable manholes and draining water, as needed. In-scope medium-voltage exposed to significant moisture and voltage will be tested to provide an indication of the condition of the conductor insulation. It is not clear to the NRC if you intend to use these periodic actions to preclude cable testing. If this is the case, provide a technical justification of why removing water in the cable manholes will provide assurance that water is not present elsewhere in the conduits or duct banks. If this is not the case, revise your AMP as appropriate to requires both testing and inspecting water accumulation in the manholes.	The intent of the VY AMP B.1.17 is to inspect for water in manholes and to test the in-scope medium-voltage cables.	Closed
117	B.1.17-N-05 GALL X1.E3 recommends testing all in-scope inaccessible medium-voltage cables. Are all inaccessible medium-voltage cables within the scope of license renewal tested?	Yes, all of the in-scope medium-voltage cables will be subject to testing per the program requirements.	Closed

Item	Request	Response	Status
118	B.1.17-N-06 GALL X1.E3 under parameters monitored/inspected states that the specific type of test performed will be determined prior to the initial test and is to be a proven test for detecting deterioration of the insulation system due to wetting such as power factor, partial discharge test, or polarization index, as described in EPRI TR-103834-P1-2, or other testing that is state-of-the-art at the time the test is performed. VYNPS B.1.17 under the same attribute only states that the specific type of test performed will be determined prior to initial test. Revise your AMP to be consistent with GALL or explain how do you ensure that the test to be performed will be in accordance with industrial guideline or that is the state-of-the-art at the time the test is performed.	LRA Amendment LRA Appendix B.1.17 will be revised to state that the specific type of test to be performed will be determined prior to the initial test and is to be a proven test for detecting deterioration of the insulation system due to wetting as described in EPRI TR-103834-P1-2, or other testing that is state-of-the-art at the time the test is performed.	Accepted
119	B.1.17-N-07 Do you currently inspect water in the man holes. Are there any existing procedures for inspecting man holes. Provide a copy of these procedures.	Yes, the manholes are inspected on an annual basis. An example was provided during the onsite inspection	Closed
120	B.1.17-N-08 GALL X1.E3 defines medium-voltage cable is the voltage level from 2kV to 35kV VYNPS AMP B.1.17 defines medium-voltage cable is the voltage level from 2kV to 15kV. Revise the scope of the inaccessible medium - voltage level to be consistent with GALL or provide a technical justification that why the water tree phenomenon is not applicable to voltage level greater than 15kV. Are there any inaccessible medium - voltage cables within the scope of licensee that are greater than 15kV.?	LRA Amendment VY does not have any medium-voltage cable in-scope that is greater than 15KV. LRA Appendix B.1.17 will define medium-voltage cable as voltage level from 2kV to 35kV.	Accepted

Item	Request	Response	Status
121	B.1.18-N-03 GALL X1.E2 under corrective actions states that such an evaluation is to consider the significance of the test results, the operability of the component, the reportability of the event, the extend of the concern, the potential root causes for not meeting the test acceptance criteria, the corrective actions required, and likelihood of recurrence in addition to 10 CFR Part 50, Appendix B. VYNPSB.1.18 under the same element only refers to 10 CFR Part 50 Appendix B to address corrective actions. Revise your AMP corrective actions to be consistent with GALL or provide a justification of why such specific corrective actions are not necessary.	VYNPS B.1.18 AMP under corrective actions states that "an engineering evaluation will be performed when the test acceptance criteria are not met in order to ensure that the intended functions of the electrical cables can be maintained consistent with the current licensing basis. This evaluation is performed in accordance with the Entergy corrective action process per procedure EN-LI-102. This procedure provides the stated elements to consider including the extent of the concern, the potential root causes for not meeting the test acceptance criteria, the corrective actions required, and likelihood of recurrence. See procedure details below: Adverse Condition – An event, defect, characteristic, state or activity that prohibits or detracts from safe, efficient nuclear plant operation or a condition that could credibly impact nuclear safety, personnel safety, plant reliability or non-conformance with federal, state, or local regulations. Adverse conditions include non-conformances, conditions adverse to quality and plant reliability concerns Operability Evaluation – A written evaluation of a Condition Report, to determine impact of the identified condition on the operability of structures, systems or components. The operability evaluation includes a determination for reportability. Extent of Condition – An evaluation to identify the total population of items that have or may have the same problem as identified in the original CR problem statement. The intent of the Extent of Condition review focuses on a determination of any potential impact to the operability/functionality of similar components, equipment, systems, human performance traps/issues, or organizational processes/programs. Root Cause – The most basic cause(s) for a failure or a condition that, if corrected or eliminated, will preclude repetition of the event or condition. Corrective Action – Corrective actions include actions intended to preclude repetition of significant conditions and those intended to correct adverse conditions. Corrective Actions to Preclude Repetition – A type of corrective action intended to correct the root cause of a condition and thereby preclude repetition. A copy of EN-LI-102 had been provided to the onsite review team.	Closed
122	B.1.18-N-04 Why is the high range radiation monitor cable is not considered in scope of XI.E2.	VYNPS electrical AMR, AMRE-01, states that "Cables and connections in the high-range reactor building area monitoring system, support a license renewal intended function. However, the entire length of these cables are EQ and do not require aging management since they are subject to replacement based on a qualified life.	Closed
123	B.1.19-N-03 For all new AMP provide a commitment number and the implementation period for this new program.	Commitments numbers are being supplied in a table for all commitments.	Closed

Item	Request	Response	Status
124	B.1.19-N-04 GALL X1.E1 under scope of program states that this inspection program applies to accessible electrical cables and connections within the scope of license renewal that are installed in adverse localized environments caused by heat or radiation in the presence of oxygen. VYNPS AMP B.1.19 under the same element you have stated that this program will include accessible insulated cables and connections installed in structures within the scope of license renewal and prone to adverse localized environments. Clarify if the scope of this program include only insulated cables and connections installed in structures which (structures) are in scope of license renewal and prone to adverse localized environments or insulated cables and connections within the scope of license renewal that are installed in adverse localized environments. . Why are structures included in the scope of the AMP. Modify the scope of the program as appropriate to remove the confusion.	LRA Amendment "In a structure" means inside the plant not outside. The VYNPS B.1.19 will be revised to state that the program applies to accessible electrical cables and connections within the scope of license renewal that are installed in adverse localized environments caused by heat or radiation in the presence of oxygen.	Accepted
125	B.1.19-N-05 Explain why the GALL X.E1, EQ, is included in the basic document for non-EQ insulated cables and connections program.	A revised copy of GALL for XI.E1 was provided.	Closed
126	3.6.2.2-N-09 GALL XI.E5 states that the fuse holder (not part of a larger assembly) metallic portions are subject to fatigue due ohmic heating, thermal cycling, electrical transients, frequent manipulation, vibration, chemical contamination, corrosion, and oxidation. In the LRA Table 3.6.1 item 3.6.1-6, you have stated that NUREG-1801 aging effect is not applicable to VYPNS. In AMRE-01 Revision 0 Page 14 of 108, you have stated that VYNPS employs two general types of fuse holders. The first type is the bolt-mount fuse holder that uses either a lug or cap-screw to secure the fuse between the clamps. The second type of fuse holder is the metallic clamp fuse holder, which uses the spring tension. Installation data for cables and connections indicated that the only fuse holders installed at VYNPS that utilize metallic clamps to secure the fuse are either part of active assembly or are located in circuits that perform no license renewal indented functions. Are there any bolt-mount fuse holders in scope of licensee renewal that are not part an active assembly. If there are, explain why aging effects as identified in the GALL are not applicable.	No, the two types of fuse holders are all located in active devices.	Closed
127	B.1.1-L-06 Program Description item. The LRA says "Buried components are inspected when excavated during maintenance". Is maintenance performed on an as needed basis or is it on a scheduled frequency?	The maintenance inspections being credited are inspections that are being performed on an as needed basis since there are no routine scheduled maintenance inspections of buried piping.	Closed

Item	Request	Response	Status
128	B.1.1-L-07 Program Description item. The LRA says "A focused inspection will be performed within the first 10 years of the period of extended operation...." The LRA seems to address inspections that occur both before and during the period of extended operation; the Appendix A reference does not clarify this confusion. When does VY plan to perform these focused inspections?	The focused inspection will be performed within the first 10 years of the period of extended operation, unless an opportunistic inspection occurs within this ten-year period as stated in LRPD-02 section 4.1.B.4.b of the Buried Piping Inspection Program and in Appendix B.1.1 of the LRA. The first sentence in the third paragraph of the program description in the LRA describes a review of operating experience (if available) for examinations of buried piping for relevant information and is not a required inspection. Inspections of buried carbon steel piping were performed in 2003 which is within the 10 years prior to the period of extended operation. These inspections revealed no coating or piping degradation.	Closed
129	B.1.1-L-07 Program Description item. Depending on the response to the above question, please clarify the Appendix A reference, as needed.	Appendix A is correct as written. The focused inspection is specified for the ten years immediately after entering the period of extended operation. This is consistent with the SER for Brunswick dated March 2006.	Closed
130	B.1.1-L-08 Acceptance Criteria item. The GALL Report says "Any coating and wrapping degradations are reported and evaluated according to site corrective actions procedures." The LRA says "Coating and wrapping degradation, or loss of material due to corrosion, is evaluated in accordance with the site corrective action program." PP 7030, Section 4.8, is very general, e.g., "signs of degradation," "areas of degradation." Does VY intend to enhance this guidance, as well as that addressed in question B.1.1-L-04?	License Renewal Commitment #1 It was the intent of the enhancement specified in B.1.1 to revise appropriate sections of procedure PP 7030 to include attributes of coating damage and evidence of corrosion. This would include updating sections 4.3 & 4.8.	Accepted
131	B.1.1-L-09 Operating Experience item. . Why does LRDP-05, Section 4.4.1 reference the BWR CRD Return Line Nozzle Program?	Yes, this is a typographical error and it should have said that the Buried Piping Inspection Program provides reasonable assurance that the effects of aging will be managed such that the current licensing basis for the period of extended operation. This item was addressed in revision to LRPD-05.	Closed
132	B.1.30.2-M-03 An exception to BWRVIP - 130 criteria for feedwater copper was noted. Please provide related information. (Water Chemistry Control - BWR Program)	Provided Revision 1 of Technical Justification for Continued Operation of Entergy Northeast Vermont Yankee (ENVY) with Feedwater Copper > 0.2 ppb.	Closed
133	B.1.30.2-M-04 Please provide a copy of recent third party assessments of the Water Chemical Control - BWR Program.	Third party assessment of BWR Water Chemistry control from March 2001, May 2003 and April 2005 were provided for review.	Closed
134	B.1.8-L-02 Detection of Aging Effects item. PP 7006, Section 4.4.4, refers to a Type A Test, which will be developed. Please explain.	Type A testing) and due to the expectations of VY on maintaining operating procedures current, OP 4029 (test procedure) was retired. By retiring the procedure that is conducted once every 10 to 15 years, forces the test engineer to develop a Type A Test IAW Tech Specs 6.7.C & PP 7006, Section 4.4.4 that adopts the latest test equipment, processes, software programs, and testing philosophies into the infrequently conducted evolution (SOER 91-01), thereby ensuring that the complex Type A testing process is thoroughly understood by the test engineer. With the inception of 10CFR50 Option B, containment integrity is adequately monitored between Type A tests.	Closed

Item	Request	Response	Status
135	B.1.8-L-03 Monitoring and Trending item. The GALL Report says "The frequency of these tests depends on which option (A or B) is selected. With Option A, testing is performed on a regular fixed time interval as defined in 10 CFR Part 50, Appendix J." The LRA says "The first Type A test after the April 1995 Type A test shall be performed no later than April 2010. This is a one-time extension of the NEI 94-01, 10 year Type A test interval to 15 years. NRC approved Amendment 227 to Facility Operating License DPR-28 for VYNPS to extend the primary containment integrated leak rate testing interval from 10 years to no longer than 15 years on a one-time basis." Amendment 227 refers to its being a one-time extension, so it would not appear to extend into the period of extended operation. Please clarify.	Under current regulations and NEI guidance, the one time change does not affect the Type A test interval or number of tests to be conducted during the period of extended operation.	Closed
136	B.1.8-L-04 Monitoring and Trending item. Does VY take any exception to the testing guidance of RG 1.163 or NEI 94-01?	At present, VY does not take direct exception to any provision in RG 1.163. VY does take exception to NEI 94-01. Specifically, with the adoption of License Amendment 223 of the Alternative Source Term (AST), the Main Steam Line Pathways were determined to be separate radiological (consequences) release paths exclusive of the Primary-Secondary Containment System radiological (consequences) release path. This pathway is subject to the 10CFR50 Appendix J Type C testing methodologies but the calculation methods, leakage-rate summations, and acceptance criteria were determined to be independent of the Primary Containment allowable leakage rate (La). NEI 94-01 does not address the effects AST adoption on a primary containment leakage rate testing program; therefore, an exception to License Amendment 223 for the VY current license and through the possible license extension period is required.	Closed
137	B.1.8-L-05 Acceptance Criteria item. LRPD-02 identifies the following as an exception that the LRA did not. The GALL Report says "Acceptance criteria for leakage rates are defined in plant Technical Specifications. These acceptance criteria meet the requirements in 10 CFR Part 50, Appendix J, and are part of each plant's current licensing basis. The current licensing basis carries forward to the period of extended operation." The LRA says "VYNPS acceptance criteria are defined in plant technical specifications." Please expand on why the acceptance criteria are not consistent with the GALL Report.	See B.1.8-L-04 exception basis for response.	Closed
138	B.1.8-L-06 Operating Experience item. Does VYNPS monitor industry issues/events and assess these for applicability to its own program?	VYNPS incorporates, as necessary, lessons learned into the Containment Leak Rate Program from operating experiences identified at VYNPS and industry operating experiences. The incorporation of the lessons learned follows a process of an understanding of the operating experience, an assessment of the current program to determine applicability, and the document development to affect the change.	Closed

Item	Request	Response	Status
139	B.1.14-K-01 Requested operating experience information on a sample of the heat exchangers included in the Heat Exchanger Monitoring Program if any is available.	Operating History search was performed on the following components: HPCI gland Seal condenser (E-18-1A) HPCI Lube oil coolers (E-19-1A) RCIC lube oil coolers (E-21-1A) CST aluminum steam reheat coil (E-HB-1) Drywell atmospheric cooling units (RRU 1, 2, 3, 4) Drywell equipment drain cooler (E-ESC-1A) Reactor Recirculation pump seal water coolers (P-18-1A/B Hx-3) Reactor Recirculation pump motor upper & lower bearings oil coolers (P-18-1A/B Hx-2) Reactor Recirculation pump motor air coolers (P-18-1A/B Hx-1) Keywords used in PCRS: Fouling Eddy Current Tube replacement Tube plugging Plugging Tube blockage No information was found on the heat exchanger or coolers for any of the above components in PCRS. EMPAC search on components: WO 2001-5153 performed 10/04/2002- E-18-1A HPCI Gland Seal condenser Cleaning and inspection WO 1997-8128 performed 04/02/1998- E-19-1A Inspect lube oil side of HPCI lube oil cooler RRU-1 through 4 are inspected and lubricated during refueling outages-External inspections only Attachments provided to the NRC during the onsite review: WO 2001-5153 WO 1997-8128 NRC has these attachments.	Closed

Item	Request	Response	Status
140	B.1.14-K-02 What is the proposed frequency of inspection and basis of the frequency selected for the heat exchangers included in the Heat Exchanger Monitoring Program.	The development of the non Service Water (SW) cooled heat exchanger inspection and monitoring plan would be similar to the process which was used for the SW heat exchangers. The scope of this plan would include, but not be limited to, the following heat exchangers and coolers: Drywell Coolers, RRU-1 through 4 HPCI Gland Seal Condenser, E-18-1A HPCI Lube Oil Cooler, E-19-1A RCIC Lube Oil Cooler, E-21-1A CST Reheat Coil, E-HB-1 Drywell Equipment Drain Cooler, E-ESC-1A Reactor Recirculation Pump Seal Water Coolers, P-18-1A HX-3 & P-18-1B HX-3 Recirculation Pump Motor Upper & Lower Bearing Oil Coolers, P-18-1A HX-2 & P-18-1B HX-2 Recirculation Pump Motor Air Coolers, P-18-1A HX-1 & P-18-1B HX-1 The following is an example of the steps which would be used to develop the plan: 1. An initial visual inspection would be performed of the in scope heat exchangers. This inspection would document the "as-found" conditions. Additional examination methods may be used if "as-found" conditions warrant, (i.e. ultrasonic thickness measurements or radiography). The results of these inspections would be used to establish the frequency of future inspections. 2. Where physically accessible, baseline eddy current data would be obtained. The number of tubes sampled would be determined based on industry best practices and EPRI recommendations. The results of these tests would be used to determine the frequency of future inspections and the number of tubes to be sampled. 3. Future inspections and eddy current examinations would be scheduled via the Preventive Maintenance process. 4. Performance monitoring and trending would be performed in accordance with established fleet procedures. Once developed the plan would be administered by the onsite engineering organization.	Closed
141	B.1.12.1-L-07 Scope of Program item. The GALL Report has requirements in numerous program elements that are on a six-month frequency. The LRA states that these are on a refueling (twenty-month) frequency. Please discuss and justify the inspection frequency differential for the CO2 .system.	License Renewal Commitment #30 LRA Amendment System walkdown every 6 months, starting prior to period of extended operations. The VY AMP B.1.17 will state that the specific type of test to be performed will be determined prior to the initial test and is to be a proven test for detecting deterioration of the insulation system due to wetting as described in EPRI TR-103834-P1-2, or other testing that is state-of-the-art at the time the test is performed.	Accepted

Item	Request	Response	Status
142	B.1.18-N-04 Why is high range radiation monitor cable not considered in scope of XI.E2?	VYNPS Electrical AMR, AMRE-01 states that "Cables and connections in the high-range reactor building area monitoring system, support a license renewal intended function. However, the entire length of these cables are EQ and do not require aging management since they are subject to replacement based on a qualified life.	Closed
143	B.1.18-N-05 GALL XI.E2 under parameter monitored/inspected states that the parameter monitored are determined from the specific calibration, surveillance or testing performed and are based on the specific instrumentation under surveillance or being calibrated, as documented in plant procedures. VY AMP B.1.18 under same attribute states that results from the calibrations or surveillance of components within the scope of license renewal will be reviewed. The parameters reviewed will be based on the specific instrumentation circuit under surveillance or being calibrated, as document in the plant calibration or surveillance procedures. a Why does the review of calibration results belong to parameter monitored/inspected attribute? b. The parameter monitored/inspected for cable testing was not mentioned. What is the parameter for cable testing. Confirm that cable testing will be perform on cables in-scope of XI.E2 that are disconnected during instrumentation calibration.	a) LRPD-02 will be revised under parameter monitored/inspected to state that the parameters monitored are determined from the specific calibration, surveillances or testing performed and are based on the specific instrumentation circuit under surveillance or being calibrated, as documented in plant procedures. LRPD-02, Rev 2 incorporated this change. (b) LRPD-02 under parameter monitored/inspected will state that the parameters monitored are determined from the specific calibration, surveillances or testing performed. The parameter for cable testing is determined from the plant procedures. Cable testing is performed by plant procedures on cables in-scope of XI.E2 that are disconnected during instrument calibration.	Closed
144	B.1.18-N-06 VY B.1.18 under acceptance criteria address the acceptance criteria for calibration. However, it silences on the acceptance criteria for cable testing. What is the acceptance criteria for cable testing?	LRPD-02 will be revised under acceptance criteria to state that calibration results or findings of surveillance and cable system testing results are to be within the acceptance criteria. LRPD-02, Rev 2 incorporated this change.	Closed
145	B.1.20-K-03 Please provide QA Surveillance and self-assessment referenced in operating experience for Oil Analysis Program.	QA Surveillance SRVY 2002-025 and 2003 self-assessment provided during the onsite audit.	Closed
146	B.1.12.1-L-07 Scope of program item. The GALL Report has requirements in numerous program elements that are on a six-month frequency. The LRA states that these are on a refueling (twenty-month) frequency. Please discuss and justify the inspection frequency differential for the CO2 system.	License Renewal Commitment #30 LRA Amendment The TRM frequencies are based on those that were previously in the Technical Specifications. Entergy VT will re-examine the ability to performing these surveillances at a 6 month or higher frequency, provided that they can be safely performed online. This effort will be started 6 months prior to the period of extended operation and is tracked as License Renewal Commitment #30.	Accepted

Item	Request	Response	Status
147	B.1.12.1-L-08 Preventive Actions item. The GALL Report says "For operating plants, the fire hazard analysis assesses the fire potential and fire hazard in all plant areas...." The LRA says "The NUREG-1801 Preventive Actions do not specify any measures for preventing aging effects of fire protection structures, systems or components." Has VY performed a fire hazard analysis?	The VY Fire Hazards Analysis was provided during the onsite inspection.	Closed
148	B.1.12.1-L-09 Parameters Monitored/Inspected item. The GALL Report says "Visual inspection of the fire barrier walls, ceilings, and floors examines any sign of degradation such as cracking, spalling, and loss of material caused by freeze-thaw, chemical attack, and reaction with aggregates." The LRA says "Procedures will be enhanced to specify that fire damper frames in fire barriers shall be inspected for corrosion." What is the material and environment of the damper frames?	These dampers are in ventilation ducts; therefore, the conditions would be similar to other ambient conditions in the plant. The duct material is carbon steel. The environment is indoor air.	Closed
149	B.1.12.1-L-10 Parameters Monitored/Inspected item. What examination technique will be used?	Visual exam, consistent with ANSI 45.2.6	Closed
150	B.1.12.1-L-11 Parameters Monitored/Inspected item. The GALL Report says "The diesel-driven fire pump is under observation during performance tests such as flow and discharge tests, sequential starting capability tests, and controller function tests for detection of any degradation of the fuel supply line." The LRA says "Procedures will be enhanced to state that the diesel engine sub-systems (including the fuel supply line) shall be observed while the pump is running." Is there a VYNPS commitment associated with this enhancement?	License Renewal Commitment #9 Yes. This item is being tracked by License Renewal Commitment #9.	Accepted
151	B.1.12.1-L-12 Acceptance Criteria item. The GALL Report says "Inspection results are acceptable if there are no visual indications (outside those allowed by approved penetration seal configurations) of cracking, separation of seals from walls and components, separation of layers of material, or ruptures or punctures of seals; no visual indications of concrete cracking, spalling and loss of material of fire barrier walls, ceilings, and floors; no visual indications of missing parts, holes, and wear and no deficiencies in the functional tests of fire doors." The LRA says "Acceptance criteria will be enhanced to verify no significant corrosion." How much is "significant?"	License Renewal Commitment #8 This item is being addressed by License Renewal Commitment #8.	Accepted
152	B.1.12.1-L-13 Acceptance Criteria item. What actions are taken, either with or without significant corrosion?	License Renewal Commitment #8 This item is being addressed by License Renewal Commitment #8	Accepted

Item	Request	Response	Status
153	B.1.12.1-L-14 Acceptance Criteria item. Is there a VYNPS commitment associated with this enhancement?	License Renewal Commitment #8 This item is being addressed by License Renewal Commitment #8	Accepted
154	B.1.12.1-L-15 Acceptance Criteria item. The GALL Report says "No corrosion is acceptable in the fuel supply line for the diesel-driven fire pump." The LRA says "Acceptance criteria will be enhanced to verify that the diesel engine did not exhibit signs of degradation while it was running; such as fuel oil, lube oil, coolant, or exhaust gas leakage." Does the enhancement include corrosion in the fuel supply line of the diesel-driven fire pump?	Evidence of corrosion inside the fuel line would appear as corrosion products in the fuel filter. Evidence of corrosion in the fuel filter would result in a Condition Report and an evaluation. Evidence of corrosion would be an inspection criterion for fuel filters removed from service. In addition, the internals of the fuel line are managed by the diesel fuel oil monitoring program.	Closed
155	B.1.12.1-L-16 Acceptance Criteria item. Is there a VYNPS commitment associated with this enhancement?	License Renewal Commitment # 9 Yes. This item is being tracked by License Renewal Commitment # 9	Accepted
156	B.1.12.1-L-17 Operating Experience item. Has VY experienced any fire-protection-related operating experience? Please describe.	During the onsite inspection, the OE Coordinator provided the requested information.	Closed
157	B.1.12.1-L-18 Operating Experience item. Has VY reviewed and applied the industry operating experience that relates to fire protection?	VY routinely reviews Industry OE in accordance with fleet procedure, EN-OE-100. The VY OE coordinator routes OE to affected line organization groups, and enters action items into the corrective action process to ensure that timely review is completed and documented.	Closed
158	B.1.12.1-L-19 Operating Experience item. Is any VY plant-specific operating experience not bounded by industry operating experience?	No	Closed
159	B.1.12.1-L-20 Program Description item. Does VY inspect the fire dampers?	LRA Amendment Yes. Surveillance Test #7134 is the Operating Cycle Test of Fire Barrier Dampers, using procedure OP 4019. VY will add Fire Dampers to the program description.	Accepted
160	B.1.12.1-L-21 Program Description item. Does VY have an electric fire pump?	Yes. The pump end is identical to the diesel fire pump. It is located in the Intake Structure. Component ID is P-40-1B. It is Managed by Fire Water Program via Test Procedure # OP 4105.	Closed

Item	Request	Response	Status
161	B.1.12.1-L-22 Program Description item. How does VY inspect/test Appendix R-required equipment?	Test Procedures for inspecting and testing Appendix R required equipment are: PROC. # TITLE AP 0042 Plant Fire Prevention and Fire Protection OP 0046 Installation and Repair of Fire Barriers, Penetration Seals, Fire Breaks and Flood Seals. OP 2186 Fire Suppression Systems OP 3020 Fire Emergency Response Procedure AP 3700 Fire Training OP 4001 Plant Fire Extinguisher Service and Issue OP 4002 Integrity Surveillance of Fire Detectors and Fire Suppression Systems OP 4019 Surveillance of Plant Fire Barriers and Fire Rated Assemblies OP 4103 Fire Protection Equipment Surveillance OP 4104 Fire Hose Hydro Test Surveillance OP 4105 Fire Protection Systems Surveillance OP 4221 Surveillance of Gas Fire Extinguishing Systems OP 4339 Surveillance of Fire Protection Detectors/Instruments OP 4392 Trip Test of Fire System Water Flow Alarms OP 4393 Test of the Cable Vault, Switchgear Room, and Intake Structure CO2 Systems OP 4395 Check of Computer/Heating Ventilation Air Conditioning (HVAC) Shutdown Circuits / Computer Room Halon Act. System OP 4602 Sampling of Fire Fighting Foam for Annual Analysis OP 4800 General Safety Surveillance OP 5327 Calibration of Plant Fire Protection System Instruments AP 6024 Plant Housekeeping and Foreign Material Exclusion/Cleanliness Control PP 7011 Vermont Yankee Fire Protection and Appendix R Program	Closed
162	B.1.12.1-L-23 Detection of Aging Effects item. The GALL Report says "Visual inspection by fire protection qualified inspectors...." Of what does this consist, at VY?	At VY, the program is being developed and will include training, acceptance criteria, and qualification as a "fire protection qualified individual" ANSI 45.2.6 The injection program, EN-MA-102, will be used.	Closed
163	B.1.12.1-L-24 Acceptance Criteria item. The GALL Report says "Inspection results are acceptable if there are no visual indications (outside those allowed by approved penetration seal configurations) of cracking,..." OP 4019, Appendix B, allows cracks in poured concrete barriers, fire barriers, concrete block walls, drywall, plaster, silicone foam, pyrocrete, and smoke/gas seals.	OP 4019 acceptance criteria will be revised to require that any recordable "outside those allowed by approved penetration seal configurations" visual indication be identified and entered into the corrective action process for evaluation. The CA number to complete this action by 12/31/06 is CR-VTY-2006-112. CA-02; CA-03.	Closed

Item	Request	Response	Status
164	B.1.30.1-M-02 Is the identified enhancement to AMP B.1.30, Water Chemistry Control – Auxiliary Systems, necessary and appropriate for this program?	License Renewal Commitment #26 The identified enhancement to AMP B.1.30, Water Chemistry Control – Auxiliary Systems is to enhance procedures to flush the John Deere diesel cooling water system and replace the coolant and coolant conditioner every three years. A program is necessary to manage loss of material and fouling of carbon steel and copper alloy components in the John Deere diesel cooling water system for the period of extended operation. Due to the size and configuration of the system, periodic sampling of the coolant was deemed unrealistic and the decision was made to flush the cooling water and replace the coolant and coolant conditioner every three years. While this task could have been included in the Periodic Surveillance and Preventive Maintenance program, it was included in the Water Chemistry Control – Auxiliary Systems program to be consistent with other components exposed to treated water, which are managed by water chemistry control programs. As stated in LRA Section B.1.30.1, rather than sampling, procedures will be enhanced to flush the John Deere diesel cooling water system and replace the coolant and coolant conditioner every three years. (License Renewal Commitment 26)	Accepted
165	B.1.30.1-M-03 Confirm that there are no other in-scope systems that rely on this AMP for managing the effects of aging.	LRA Amendment The following LRA tables credit the Water Chemistry Control – Auxiliary Systems Program for managing the effects of aging. 3.2.2-5, Reactor Core Isolation Cooling (RCIC) System – Summary of Aging Management Evaluation 3.3.2-10, Heating, Ventilation and Air Conditioning (HVAC) Systems – Summary of Aging Management Evaluation 3.3.2-12, John Deere Diesel (JDD) – Summary of Aging Management Evaluation 3.3.2-13-18, House Heating Boiler (HB) System, Non Safety-Related Components Affecting Safety-Related Systems – Summary of Aging Management Evaluation 3.3.2-13-39, Stator Cooling (SC) System, Non Safety-Related Components Affecting Safety-Related Systems – Summary of Aging Management Evaluation The component in the RCIC system that credits this program is a steam heater which is supplied by the house heating boiler system. Similarly, the components in the HVAC systems that credit this program are supplied by the house heating boiler system. Thus, there are no in-scope systems (other than the house heating boiler, stator cooling, and John Deere diesel systems) that rely on this AMP for managing the effects of aging. All other in-scope treated water systems rely on either the Water Chemistry Control – BWR program or the Water Chemistry Control – Closed Cooling Water program for managing the effects of aging. Items 3.3.1-50 and 3.3.1-51 in LRA Table 3.3.1 will be updated to reflect that the de-mineralized water system is managed by the Water Chemistry Control – BWR Program, as indicated in LRA Table 3.3.2-13-12, aging of components.	Accepted

Item	Request	Response	Status
166	B.1.21-K-04 LRA Section 3 Table 2's do not list the One-Time Inspection Program with the water chemistry control programs for components for which GALL recommends One-Time Inspection to verify effectiveness of the Water Chemistry Control Program.	LRA Amendment LRA Section 3 Table 1's discussions provide the link between the One-Time Inspection and Water Chemistry Control Program for these components. To provide further clarification, the effectiveness of the Water Chemistry Control – Auxiliary Systems, BWR, and Closed Cooling Water programs is confirmed by the One-Time Inspection program. This requires an amendment to the license renewal application to change the Appendix A, SAR supplement descriptions for the Water Chemistry Control –Auxiliary Systems, BWR and Closed Cooling Water programs to explicitly state One-Time Inspection Program activities will confirm the effectiveness of these programs.	Accepted
167	B.1.21.-K-05 Please provide sample selection criteria for the small - bore piping one-time inspection program.	Inspection locations will be based on physical accessibility exposure levels, NDE techniques, and locations identified in NRC Information Notice 97-46, Un-isolable Crack in High-Pressure Injection Piping. The initial population will include all Class 1 small - bore piping.	Closed
168	B1.15.2-P-01 Please explain why the AMP for ISI (IWB, IWC, & IWD) is not consistent with the GALL AMP XI.M1	Entergy chose to describe the Inservice Inspection and Containment Inservice Inspection Programs as plant-specific programs rather than comparing to the corresponding NUREG-1801 programs because the NUREG-1801 programs contain many ASME Section XI table and section numbers which change with different versions of the code. Because of this, comparison with the NUREG-1801 programs generates many exceptions and explanations which detract from the objective of the comparison. What is really needed is that VYNPS follow the version of ASME Section XI that is approved for use at VYNPS and accepted by law in 10CFR50.55(a). As this is the case, the Inservice Inspection and Containment Inservice Inspection Programs are presented as plant-specific programs so they can be judged on their own merit without the distraction of numerous explanations of code revision.	Closed

Item	Request	Response	Status
169	B.1.15.2-P-02 The AMP for ISI (IWB, IWC, & IWD) makes no mention of any risk-informed program. Please confirm whether or not there are current or future plans for the implementation of risk-informed ISI.	Risk-informed ISI is being implemented during the Fourth Ten-Year Interval (9/1/2003 – 8/31/2013). Surface examination of ASME Section XI, Class I, Examination Categories B-F, C-F-1, and C-F-2 (4" NPS and larger) are conducted in accordance with Code Case N-663. All areas of the subject welds identified as susceptible to outside surface attack shall be surface examined during the Fourth Ten-Year Interval in accordance with Code Case N-663. Code Case N-663 incorporates lessons learned for risk-informed initiatives and industry examination experience by requiring that an evaluation be conducted to identify locations, if any, where a surface examination would be of benefit from a generic piping degradation perspective. The results of the evaluation identify where O.D. degradation is most likely to occur by reviewing plant-specific programs and practices, and operating experience. If the potential for degradation is identified, Code Case N-663 defines examination techniques, volumes, and frequencies. As such, implementing Code Case N-663 identifies appropriate locations for surface examination and eliminates unnecessary examinations. VYNPS plans to continue surface examination of ASME Section XI, Class I, Examination Categories B-F, C-F-1, and C-F-2 (4" NPS and larger) in accordance with Code Case N-663 in subsequent inspection intervals. If Code Case N-663 is not incorporated into the ASME Section XI code edition and addendum approved by the Nuclear Regulatory Commission in 10 CFR 50.55a for the subsequent interval, a relief request will be submitted as was done for the Fourth Inspection Interval.	Closed
170	Provide the basis for determining the inspections required for BWRVIP-48. Particularly address whether VYNPS has any furnace sensitized material or Alloy 182 material that requires EVTI.	PP7027, Appendix B states clearly that these brackets are examined as if they are furnace sensitized, I A W VIP 48-A.	Closed
171	B.1.27.1-W-04 Provide the last two inspection reports for one un-reinforced Masonry Wall without bracing, one reinforced Masonry Wall without bracing and one steel braced Masonry Wall.	The following Block Wall Inspection Reports and drawings were provided during the onsite inspection: •Masonry Wall Routine Surveillance Walkdown Sheet for Wall G-191145-9 dated 10/16/02 (un-reinforced wall) •Drawing B-191600 Sheet 8 Rev 0 (from walkdown) •Attachment C VYP-007 R1 Masonry Wall Routine Surveillance Walkdown Sheet for Wall G-191145-9 dated 9/1/93 (un-reinforced wall) •Drawing B-191600 Sheet 8 Rev 0 (from walkdown) •Attachment C VYP-007 R1 Masonry Wall Routine Surveillance Walkdown Sheet for Wall G-191145-4 dated 9/28/93 (steel braced wall) •Attachment C VYP-007 R0 Masonry Wall Routine Surveillance Walkdown Sheet for Wall G-191145-4 dated 9/10/87 (steel braced wall) •Drawing B-191600 Sheet 7 Rev 1 (from 1993 walkdown) •Masonry Wall Routine Surveillance Walkdown Sheet for Wall G-191627-4 dated 10/16/02 (reinforced wall) •Attachment C VYP-007 R1 Masonry Wall Routine Surveillance Walkdown Sheet for Wall G-191627-4 dated 9/1/93 (reinforced masonry wall) •Drawing B-191600 Sheet 105 Rev 0 (reinforced masonry wall, from walkdown) •Drawing B-191600 Sheet 105 Rev 1 (reinforced masonry wall)	Closed

Item	Request	Response	Status
172	Please provide copies of OP4339 and EN-OE-100, procedures related to the Fire Water System Program.	OP4339 and EN-OE-100 were provided during the onsite inspection.	Closed
173	In Section 2b Preventive actions of LRPD-02 and it is stated that there are no preventive actions. GALL says that monitoring of water chemistry to control pH and concentration of corrosive contaminants and treatment with hydrazine are effective in reducing selective leaching. Do any of the systems that have selective leaching as an AMP have a treated water environment that performs any of these treatments to control selective leaching?	Yes, The Water Chemistry Control - Closed Cooling Water and BWR programs at VYNPS control PH and corrosive contaminants and could be effective in controlling selective leaching. Therefore any system and components with both the selective leaching and the water chemistry programs as aging management programs are included measures that could be effective in controlling the aging effect of selective leaching.	Closed
174	What is the flaw evaluation calculation for the jet pump diffuser welds? Is this calculation considered a TLAA?	The jet pump diffuser welds calculations are contained in: GE-NE-B13-01935, Rev. 2, Jet Pump Assembly Welds Flaw Evaluation Handbook for Vermont Yankee, July 1999. This is not a TLAA.	Closed
175	Will UT of the flawed jet pump diffuser welds continue? Please identify any change to the exception identified in LRA. If yes, please provide the exact wording in LRA supplement. (Note: EVT-1 does not provide flow propagation verification.)	These welds are scheduled for UT examination during RFO 26. Following RFO -26, if there are no changes to the observed indications, the inspections will revert to EVT-1 inspections IAW BWRVIP-4.	Closed
176	Will VYNPS continue to inspect 10% of CRD guide tubes every 12 years? Additional question: PP-1027 stated that 2VT-3 inspections were performed. BWRVIP stated that 4 CRD Guide tube weld locations were recommended to be inspected; 2 locations (VT-3) 2 locations (EVT-1) Please describe the inspection for all 4 locations. Does applicant inspect all 4 welds or only 2 welds?	VYNPS inspects guide tubes IAW BWRVIP-47-A and plans to continue to do so. EVT-1 inspections are conducted on CRGT-2 and CRGT-3. VT-3 inspections are conducted on CRGT-1 and FS?GT-APRIN-1	Closed
177	Will VYNPS continue to inspect the top guide at the rate of 10% every 12 years?	This question has been addressed in Question # 14. The BWR Vessel Internals Program at VYNPS is consistent with the program described in NUREG-1801, Section XI.M9, BWR Vessel Internals with the exceptions and enhancement noted in LRA Section B.1.7. As stated in NUREG-1801, the extent of the examination and its frequency will be based on a ten percent sample of the total population, which includes all grid beam and beam-to-beam crevice slots.	Closed

Item	Request	Response	Status
178	What is the exam history, results, schedule and current status of shroud H8 and H9 welds?	In RFO 19 (1996) Vermont Yankee performed an inspection of welds H8 and H9 which meets the requirements of BWRVIP-38 for a baseline examination. The following describes the rationale for this statement. The baseline strategies for welds H8 and H9 are shown in Figures 3-4 and 3-5 of BWRVIP-38. The load multiplier is determined from Figures 5-1. In Vermont Yankee's case this is a 0.41. The flaw tolerance is determined from figures 5-1 (for H8) and 5-2 (for H9) for plants with support legs. For both welds the flaw tolerance of 100 %. The minimum examination coverage for a flaw tolerance of 100% is 10% for both H8 and H9. The coverage was 25% for weld H8 and 22% for weld H9 during the RFO 19 (1996) examination. No flaws were found. Therefore an adequate baseline of welds H8 and H9 was performed. No welds other than H8 and H9 require examination is accordance with BWRVIP-38 for a plant with Vermont Yankee's core shroud support configuration. The NRC requires inspection tooling and methodologies be developed that allow the welds in the lower plenum to be made accessible. This requirement applies to the VYNPS shroud support leg welds. This inspection remains an open item with the NRC per response to BWRVIP-38. The re-inspection interval is established in BRWVIP-38, Paragraph 3.3.2, that states "if no flaws were found during the previous inspection, re-inspections are performed on ten-year intervals if UT techniques were used..." The RFO 19 (1996) H8 and H9 examination was an ultrasonic test augmented with eddy current and no flaws were found. Therefore the re-inspection interval is ten years if UT techniques are used, and six years if EVT-1 techniques are used (but see below). Accordingly, re-inspection of H8 and H9 were re-inspected in RFO 25(2005), by EVT-1 nine years following the baseline exam.	Closed
179	B.1.22-M-03 Please provide a recent third party assessment of the preventive maintenance program.	WANO Assessment Report will be available for on-site review during return audit (week of 5/15/06).	Closed

Item	Request	Response	Status
180	B.1.22.M-04 Following the proposed enhancement to the Periodic Surveillance and Preventive Maintenance Program, will it be apparent that these tasks contain an aging management element?	The Periodic Surveillance and Preventive Maintenance program includes two types of tasks, inspections and surveillances. Inspections include various visual or other non-destructive examinations to manage loss of material, cracking, and fouling of components. Following the proposed enhancements, it will be apparent that these tasks contain an aging management element. To properly inspect for evidence of loss of material, cracking, or fouling, the inspector must be aware that he is looking for these aging effects and as such new guidance to identify these aging effects will be included as required. Surveillances include the secondary containment capability check, which will confirm the absence of aging effects for reactor building exterior concrete walls during the period of extended operation; leakage testing on the equipment lock doors, which will confirm the absence of aging effects for the rubber door seals during the period of extended operation; and temperature monitoring during operability testing of diesel generators to confirm the absence of fouling of diesel heat exchangers during the period of extended operation. To perform these tests, the performer does not need to be aware that he is confirming the absence of aging effects. If the applicable acceptance criterion is not met, the performer will initiate a condition report. In accordance with the corrective action program, causes for the condition will be evaluated, including those that are due to aging of components.	Closed
181	B.1.22-L-01 Program Description item. The GALL Report says "The External Surfaces Monitoring program is based on system inspections and walkdowns. This program consists of periodic visual inspections of steel components such as piping, piping components, ducting, and other components within the scope of license renewal and subject to AMR in order to manage aging effects. The program manages aging effects through visual inspection of external surfaces for evidence of material loss. Loss of material due to boric acid corrosion is managed by the Boric Acid Corrosion Program." The LRA says "This program entails inspections of external surfaces of components subject to aging management review. The program is also credited with managing loss of material from internal surfaces, for situations in which internal and external material and environment combinations are the same such that external surface condition is representative of internal surface condition." What materials are within the scope of this AMP?	The Walkdown program is not exclusive of any system material condition. It should be noted that the walkdown process may find signs of external piping degradation that would be evaluated for potential impact to interior piping surfaces. The walkdown program is not intended to inspect interior piping and component surface unless they have been revealed for inspection during maintenance and repairs. As indicated in the tables in Section 3 of the LRA, the System Walkdown program manages aging for external surfaces of carbon steel, stainless steel, cast iron, low alloy steel, aluminum, and copper alloy components. The program also manages loss of material from internal surfaces in situations in which internal and external material and environment combinations are the same such that external surface condition is representative of internal surface condition.	Closed
182	B.1.22-L-02 Program Description item. What examination methods are used?	For current term operation, system walkdowns use " eye contact" examination. System Engineers are not qualified in visual examination methods such as those used to qualify welding. The Entergy walkdown procedure provides a listing and a checklist of examinations to be performed during the walkdown. Plant issues ranging from standard housekeeping to equipment problems are documented and acted upon accordingly through work planning and the condition reporting system. For the License Renewal term, under the System Walkdown program, visual inspection activities are performed and associated personnel are qualified in accordance with site controlled procedures and processes.	Closed

Item	Request	Response	Status
183	B.1.22-L-03 Operating Experience item. . Has VY experienced any external surfaces-related operating experience? Please describe.	System Walkdowns , both online and during refueling outages, have found corrosion on piping and component surfaces. For instance, each refueling, the interior of the condenser hotwell and waterboxes are inspected. Repairs and or more detailed inspections are implemented as required. In Refueling Outage 24 (November 2005) examination of spring cans supporting service water piping revealed rust and the need for recoating. Corrective actions driven by condition reporting and work order planning has resulted in scheduling repair for the 2006 outage.	Closed
184	B.1.22-L-04 Operating Experience item: Has VY reviewed and applied the industry operating experience that relates to external surfaces?	Vermont Yankee System Engineers have received training in the EPRI Aging Management Field guide, which in effect is a collection of OE from many nuclear plant systems, both mechanical and electrical, as well as buildings and structures intended to provide specific details of corrosion and degradation throughout the plant. Review of OE is an ongoing activity for Vermont Yankee System Engineers intended to ensure latest issues are known and to continue to develop background related to assigned systems.	Closed
185	B.1.22-L-05 Operating Experience item: Is any VY plant-specific operating experience not bounded by industry operating experience?	Through its condition reporting system, Vermont Yankee will contribute to industry OE as its Condition Reporting Committee directs. Aging related issues with Vermont Yankee are typical of industry based OE.	Closed
186	B.1.22-L-06 Program Description item. Is boric acid leakage that falls/sprays on VY components managed by the Boric Acid Corrosion Program?	Vermont Yankee is a Boiling Water Reactor and therefore does not have a Boric Acid Corrosion Prevention program. The Standby Liquid Control system, which contains Sodium Pentaborate, and is maintained in a clean condition. Rare cases of leakage from standby liquid control system valve packing or other system components have occurred, but were promptly corrected prior to impacting the intended function of components subject to aging management review for license renewal. The external surfaces of SLC components and components in the area are managed by the System Walkdown program.	Closed
187	B.1.22-L-07 Scope of Program item. Please expand the explanation of the enhancement identified in LRPD-02, page 218.	License Renewal Commitment #24 LRA Amendment The enhancement in LRPD-02, page 218 was identified after the LRA was submitted to NRC for review. Entergy decided that the System Walkdown program implementing procedure should be enhanced to specify that systems in scope and subject to aging management review for license renewal in accordance with 10 CFR 50.54 (a)(1) and (a)(3) shall be walked down. Guidance as to what systems are walked-down is currently included in less formal plant guidelines. Also, although the System Walkdown program implementing procedure currently provides guidance to inspect nearby systems that could impact the system being walked down, Entergy decided that this guidance should be clarified. The enhancement in LRPD-02, page 218 is commitment # 24 on the list of commitments for license renewal.	Accepted

Item	Request	Response	Status
188	B.1.22-L-08 Scope of Program item. Enhancements will need specific commitments.	License Renewal Commitment #24 Vermont Yankee commits to those items related to Aging Management and will update the Entergy walkdown procedure accordingly commensurate with the License Renewal schedule. Training in the EPRI Field Guide is ongoing at this time. The enhancement in LRPD-02, page 218 is commitment # 24 on the list of commitments for license renewal. See also related Audit Item #384	Accepted
189	B.1.22-L-09 Parameters Monitored/Inspected item. The LRA does not specify the same examples that the GALL Report does, e.g., material wastage, leakage, insulation condition, etc. What is the justification for not addressing these parameters?	These items are documented on a monthly basis, as found during walkdowns, in walkdown reports. Any material condition is assessed at the time discovered and acted upon according to its conditions. All system conditions, including those found in walkdowns, plant monitoring and daily operations are summarized in Quarterly System Health reports.	Closed
190	B.1.22-L-10 Parameters Monitored/Inspected item. Several of these parameters are not addressed in EN-DC-178. Should this procedure be enhanced?	License Renewal Commitment #24 Specifically discussed during License Renewal program reviews were insulation and the need to visually examine it for signs of leakage, corrosion beneath and missing insulation. License Renewal Commitment # 24 addresses the Walkdown procedure.	Accepted
191	B.1.22-L-11 Detection of Aging Effects item. GALL focuses on the pertinent surfaces. LRPD-02, page 215, says that the program will manage the loss of material for internal and external surfaces by visual inspection of external surfaces. How is this accomplished?	Walkdowns may find signs of piping external surface degradation and will assess any potential impact on interior surfaces. Consistent with GALL Section XI.M36, External Surfaces Monitoring, the VYNPS System Walkdown program will manage loss of material for internal surfaces exposed to the same environment as the external surfaces. External surface condition on components exposed to the same internal and external environments is indicative of internal surface condition. Components with signs of external surface degradation will be assessed for potential impact on interior surfaces impact.	Closed
192	B.1.22-L-12 Operating Experience item: Has VYNPS experienced any external surfaces-related operating experience? Please describe.	In addition to the service water piping spring cans noted in Question 183 and a few other examples are: 1. Cooling Tower wood structural member splitting (normal aging and checking of wood). VY's preventative maintenance program drives inspection and replacement as required. 2. Switchyard tower base age related cracking. Evaluated for structural impact, found satisfactory, future work to coat bases.	Closed
193	B.1.22-L-13 Operating Experience item. Has VYNPS reviewed and applied the industry operating experience that relates to external surfaces?	Yes, the OE has helped identify specific causes and "best practice" repairs. The EPRI Aging Management Field Guide has been particularly useful.	Closed
194	B.1.22-L-14 Operating Experience item. Is any VY plant-specific operating experience not bounded by industry operating experience?	Review of Aging Related OE to date has not found such OE.	Closed

Item	Request	Response	Status
195	B.1.22-L-15 Operating Experience item. Several findings are identified under the OE tab. Are these the total findings that were made or are they simply representative?	These examples are representative. VYNPS can supply others on specific systems as requested.	Closed
196	Regarding the UT indication at 215 degrees on the RPV cladding adjacent to a dryer support log: Does VYNPS plan to re-inspect this indication by UT?	VYNPS performed enhanced UT's in accordance with commitment described in BVY 92-055 and BVY 93-112. These UT's were performed from the RPV OD and determined that the cracks do not penetrate to the RPV base metal. The steam dryer lugs will be re-inspected in accordance with BWRVIP-48 by VT-1.	Closed
197	3.1.1-01-P-01 On page 3.1-55, the component type 'supports stabilizer pads support skirt' is managed using TLAA - metal fatigue. In all cases where the LRA lists "Cracking - fatigue" as the AERM, change it to "Fatigue damage" (applies to multiple Table 1 items but is asked only once).	Cumulative fatigue damage is a generic term. However, only when fatigue damage accumulates to the point that the component cracks is the function of the component in jeopardy. VYNPS uses the aging effect of cracking due to fatigue to represent the physical result of cumulative fatigue damage. The meaning of "Cracking – fatigue" is consistent with the intent of "Cumulative Fatigue Damage".	Closed
198	3.1.1-02-P-01 On page 3.1-36, the component type 'closure flange studs, nuts, washers and bushings' and the component type 'other pressure boundary bolting, flange bolts and nuts (N6A, N6B, N7), CRD flange cap-screws and washers' are managed using TLAA - metal fatigue. Please confirm that aging of these components will be managed using the new "Bolting Integrity" AMP. Email Edit 5/11/2006 - 3.1.1-02-P-01 Generic question 2: When bolting integrity AMP is added, many AMR Table 2 items need to be revised. Will VYNPS provide bolting integrity program to manage bolts?	License Renewal Commitment #34 LRA Amendment Revised Answer to 5/11/2006 email A Bolting Integrity Program is in development that will address the aging management of bolting in the scope of license renewal. The Bolting Integrity Program will be implemented prior to the period of extended operation in accordance with commitment number #34. The identification of TLAA – metal fatigue in the aging management program column is provided as a convenient means to indicate that these components are susceptible to cracking due to fatigue which is addressed in Section 4.3.1 of the LRA as a TLAA. It is not implying that TLAA – metal fatigue is an aging management program. An aging management program is one of the three resolutions for the evaluation of a TLAA. The component type closure flange studs, nuts, washers and bushings are for the reactor head and are managed by the Reactor Head Closure Studs Program described in Section B.1.23 of the LRA which is comparable with the NUREG-1801 XI.M3 program. This approach is consistent with the GALL Bolting Integrity program XI.M18 which states that the aging management of reactor head closure studs is addressed by XI.M3, and is not included in this program. A Bolting Integrity Program is in development that will address the aging management of other bolting in the scope of license renewal.	Accepted

Item	Request	Response	Status
199	3.1.1-02-P-02 On page 3.1-54, the component type 'internal attachments shroud support ring pad (1) shroud support feet (14) jet pump riser pads (20) core spray brackets (4) guide rod brackets (2) steam dryer brackets (4) dryer hold-down brackets (4) surveillance specimen holder brackets feedwater sparger brackets (8)' is managed using TLAA - metal fatigue. Please explain why these components are not managed in accordance with GALL v2 item IV.B1-14.	Many NUREG-1801, Volume 2 items are very similar in terms of materials, environment, aging effect and aging management program. Where a NUREG-1801 item lists the same component, the choice is straightforward. Where NUREG-1801 does not match the specific component, the selection of the item to compare to the aging management review results is somewhat arbitrary. Item IV.B1-14 would certainly have been an acceptable choice for the comparison. However, in this particular case, the components were considered a subset of the reactor vessel (hence the listing within the reactor vessel table) and the comparison was made to the fatigue item within the NUREG-1801 BWR reactor vessel table. The aging management review results in NUREG-1801 are the same for item IV.A1-7 as for IV.B1-14.	Closed
200	3.1.1-13-P-01 In many cases, loss of material is managed using Water chemistry control - BWR. Please confirm that the VYNPS Water Chemistry - BWR AMP is consistent with GALL XI.M32, "One-Time Inspection," as well as with XI.M2, "Water Chemistry." Edit from 5/11/2006 email - In many cases (e.g. page 3.1-67 piping& fitting), loss of material is managed using Water chemistry control – BWR alone. Please confirm that the VYNPS Water Chemistry - BWR AMP is consistent with GALL XI.M32, "One-Time Inspection," as well as with XI.M2, "Water Chemistry."	LRA Amendment As stated in LRA Section B.1.30.2, the Water Chemistry Control – BWR Program is consistent with the program described in NUREG-1801, Section XI.M2, "Water Chemistry." The One-Time Inspection Program, described in LRA Section B.1.21 includes inspections to verify the effectiveness of the water chemistry control aging management programs (Water Chemistry Control – Auxiliary Systems, Water Chemistry Control – BWR, and Water Chemistry Control – Closed Cooling Water) by confirming that unacceptable cracking, loss of material, and fouling is not occurring. As stated in LRA Section B.1.21, the One-Time Inspection Program is a new program which will be consistent with the program described in NUREG-1801, Section XI.M32, "One-Time Inspection." LRA Tables 3.1.1, 3.2.1, 3.3.1, and 3.4.1 indicate that the One-Time Inspection Program is credited along with the water chemistry control programs for line items for which GALL recommends a one-time inspection to confirm water chemistry control. For simplicity, the subsequent tables (Table 2's) do not list the One-Time Inspection Program each time a water chemistry control program is listed. However, since the One-Time Inspection Program is applicable to each water chemistry control program, it is also applicable to each line item that credits a water chemistry control program. To provide further clarification, the effectiveness of the Water Chemistry Control – Auxiliary Systems, BWR, and Closed Cooling Water programs is confirmed by the One-Time Inspection program. This requires an amendment to the license renewal application to change the Appendix A, SAR supplement descriptions for the Water Chemistry Control –Auxiliary Systems, BWR and Closed Cooling Water programs to explicitly state One-Time Inspection Program activities will confirm the effectiveness of these programs.	Accepted

Item	Request	Response	Status
201	3.1.1-14-P-02 On page 3.1-53, the component type 'weld SLC nozzle to safe end weld (N10)' is managed using BWR vessel internals, Water chemistry control - BWR. The AMP applied, BWR VI, is acceptable, however, this differs from what is recommended by GALL. Please explain why Note E was not assigned. Edit from 5/11/2006 email - On page 3.1-53, the component type 'weld SLC nozzle to safe end weld (N10)' is managed using BWR vessel internals, Water chemistry control - BWR. Please explain how the BWR Vessel Internal program manage loss of material for SLC Nozzle to SE weld (N10) and provide either document or inspection plan to support this AMR.	NUREG-1801 item IV.A1-8 specifies the water chemistry program for BWRs augmented to verify program effectiveness by an inspection program such as the one-time inspection (OTI) program. The OTI program will be used to verify the effectiveness of the water chemistry – BWR program wherever it is applied. Rather than list the OTI program every time the water chemistry – BWR program is listed in the 3.x.2 tables, the use of the OTI program is identified in the rollup (3.x.1) tables and in the further evaluation discussions. The use of the water chemistry – BWR program augmented by the OTI program is the basis for the use of Note A. Where another program, such as the BWR vessel internals program could also be used to verify water chemistry program effectiveness, we have conservatively included it in the list of programs; however, it is considered a supplement to and not different from the NUREG-1801 identified programs. Revised Answer to Revised Question - The BWRVIP augments the ISI Program for weld N10-SE, the SLC (N10) safe end to vessel weld. The VYNPS inspection requirements for this weld are thus in PP 7027, "Reactor Vessel Internals Management Program." The SLC nozzle to safe end weld examination schedule and history is discussed in detail in section 15.0 of Appendix B to PP 7027.	Closed
202	3.1.1-17-P-01 [Original Question] On page 3.1-39, the component type 'reactor vessel shell, intermediate beltline shell' is managed using reactor vessel surveillance and TLAA - neutron fluence. Please confirm that the neutron fluence at the LPCI and RHR injection nozzle will remain <1E17 n/cm2 (E>1MeV) through the end of the period of extended operation. [Follow-up Question] In view of the power uprate, and based upon the graphic provided in GE-NE-0000-0014-0292-01, "Vermont Yankee Nuclear Power Station Extended Power Uprate RPV Flux Evaluation," fluence at the nozzle appears to be very close to 1x1017 n/cm2. Please provide a calculation of the flux at the edge of the nozzle closest to the active fuel region.	POTENTIAL RAI [Original Response] As stated in LRA Section 4.2.1, there are no nozzles in the vertical section of the reactor vessel ID that will receive greater than 1E17 n/cm2 (E > 1 MeV) during the period of extended operation. [Follow-up Response] VYNPS extrapolated the fluence near the recirculation inlet nozzles from known data as follows. From drawing 104R940, the top of the nozzles is 202 inches. The fluence versus height is given in GE-NE-0000-0007-2342-R1-NP, figure 6-1. This curve was ratioed to account for the power increase to 1912 MWt. This resulted in an ID surface fluence of 1E17 at 204 inches, missing the nozzles by 2 inches. The adjustments to RTNDT and USE are based on ¼ T fluence. The surface fluence is 35% higher than the ¼ T fluence. The point at which the ¼ T fluence exceeds 1E17 is approximately the bottom of the active fuel, 5.5 inches above the nozzle. The peak fluence values were calculated in accordance with Regulatory Guide 1.90 (See LRA section 4.2.1) and include conservatisms to ensure they are maximum values. Given these factors, the recirculation inlet nozzles do not exceed the 1E17 threshold for neutron embrittlement. Even if the fluence at the nozzle slightly exceeds 1E17 threshold, the correction factors from Regulatory Guide 1.99 are very small when just above the limit. (The RTNDT fluence factor is only 0.11 at 1E17. The curves for calculating the decrease in USE don't start till fluence reaches 1E18; the formulas for the curves predict about 6% reduction in USE at 1E17.)	Accepted

Item	Request	Response	Status
203	3.1.1-19-P-01 On page 3.1-67, the component type 'piping and fittings <4" NPS' is managed using water chemistry control - BWR, One-time inspection. The GALL suggests that a plant-specific program is appropriate for managing SCC of these components. Please identify the inspection techniques that are to be used and the basis for concluding that one-time inspection is appropriate, rather than periodic inspection. Edit from 5/11/2006 - On page 3.1-67, the component type 'piping and fittings <4" NPS' is managed using water chemistry control - BWR, One-time inspection. Why VY does not credit ISI program?	LRA Amendment All piping and fittings less than 4" NPS, except for the head seal leak detection line, are covered by NUREG-1801 item IV.C1-1, which identifies ISI, water chemistry for BWRs and one-time inspection (OTI) for small bore piping as the applicable aging management programs for cracking. The VYNPS ISI program includes piping and fittings less than 4" NPS. The LRA will be clarified to indicate that ISI in addition to water chemistry control – BWR and OTI applies to these components.	Accepted
204	3.1.1-29-P-01 On page 3.1-62, the component type 'steam dryers' is managed using BWR vessel internals. The AMR indicates that cracking of the steam dryers will be managed using the BWR VI program, yet they are not listed in the scope of the program. Please provide a plant-specific AMP as recommended by GALL or ensure that each of the 10 attributes of an acceptable management program are to be addressed.	POTENTIAL RAI VYNPS submitted a steam dryer monitoring plan as part of the recent power uprate application. That plan was approved by the NRC. That plan will continue dryer inspections for at least three consecutive refueling outages after the power uprate. BWRVIP-139, Steam Dryer Inspection and Flaw Evaluation Guidelines, has been submitted to the NRC for review and approval. This BWRVIP document is expected to be approved by the NRC prior to the period of extended operation and as such will become a part of the BWR Vessel Internals Program. The VYNPS vessel internals procedure commits VY to comply with every approved BWRVIP. As such, VYNPS will manage cracking of the steam dryers per the BWR Vessel Internals Program during the period of extended operation. In the unlikely event that BWRVIP-139 is not approved prior to the period of extended operation, VYNPS will continue inspections in accordance with the Steam Dryer Monitoring Program, Revision 3, as previously approved by the NRC as part of the Extended Power Uprate. These inspections will be in accordance with the guidance in SIL 644, Rev. 1.	Accepted
205	3.1.1-40-P-01 On page 3.1-40, the component type 'CRD stub tubes' is managed using BWR Vessel Internals, water chemistry control – BWR. For this item, GALL recommends the use of a program consistent with XI.M8, "BWR Penetrations." No exception was taken to the scope of VYNPS AMP B.1.4, "BWR Penetrations Program. It would also seem appropriate to assign Note E to this item unless the AMP assigned is changed.	Although Item IV.A1-5 lists the BWR Penetrations program for cracking, the program description in NUREG-1801 Chapter XI does not include the CRD stub tubes are in the program scope. The BWR Vessel Internals program does not specifically address the CRD stub tubes either, but is a more appropriate aging management program for this particular component. Note E is assigned to this line since the program does not match that listed in the NUREG-1801 item.	Closed
206	3.1.1-40-P-02 On page 3.1-41, the component type 'incore housings' is managed using inservice inspection, water chemistry control - BWR. Please confirm that the correct GALL item is referenced.	Inservice inspection (ISI) and water chemistry – BWR are listed for the management of both loss of material and cracking. The listed NUREG-1801 item is correct for both aging effects. For loss of material, the water chemistry – BWR and one-time inspection programs (see response to question 3.1.1-14-P-02 for discussion on OTI program applicability) are the basis for the use of Note A, and the ISI program is supplemental. For cracking, Note E is used since the ISI program is different from the program (BWR Penetrations) listed in NUREG-1801.	Closed

Item	Request	Response	Status
207	3.1.1-41-P-01 On page 3.1-72, the component type 'restrictors (ms)' is managed using water chemistry control - BWR, One-time inspection. Please provide the basis for excluding this component from the BWR Stress Corrosion Cracking program. Edit from 5/11/2006 email - On page 3.1-72, the component type 'restrictors (ms)' is managed using water chemistry control - BWR, One-time inspection. Please provide the basis for excluding this component from the BWR Stress Corrosion Cracking program. Is restrictor (ms) weld inspection part of ISI also?	The BWR Stress Corrosion Cracking Program (GALL Section XI.M7) is designed for pressure boundary piping. The main steam flow restrictors are not pressure boundary components. As such they are not subject to ASME inspection requirements and were not a good fit for the BWRSCC program. VYNPS opted to manage them by One Time Inspection.	Closed
208	3.1.1-41-P-02 On page 3.1-41, the component type 'nozzles recirc outlets (N1), recirc inlets (N2)' and on page 3.1-43, the component type 'nozzles, core spray (N5), head spray (N6A), head instrumentation (N6B), head vent (N7), jet pump instrumentation (N8)' are managed using inservice inspection, water chemistry control - BWR. The GALL item referenced in this AMR is for Stainless steel and nickel-based alloy components that may be subject to SCC. It does not appear to be appropriate for low-alloy steel. Please Identify a more suitable GALL item.	The material for these components is identified as low allow steel with stainless steel cladding. The material exposed to the internal environment of reactor coolant (treated water) is the stainless steel cladding. When evaluating surface aging effects such as cracking and loss of material, the stainless steel cladding is the material that must match the NUREG-1801 item. NUREG-1801 item IV.A1-1 provides the best match for the material, environment and aging effect combination within the BWR reactor vessel table. The applicable material for the external environment (air) is low alloy steel (or "steel" in NUREG-1801 terms).	Closed

Item	Request	Response	Status
209	3.1.1-41-P-03 On page 3.1-45, the component type 'nozzles flange leak-off (N13, N14)'; on page 3.1-47, the component type 'flanges, head nozzle flanges (N6, N7), blank flanges (N6)'; on page 3.1-51, the component type 'safe ends < 4" core SCL/?P (N10), instrumentation (N11, N12)'; and on page 3.1-52, the component type 'thermal sleeves , feedwater inlets (N4)' are managed using inservice inspection, water chemistry control - BWR. Please explain why these are not managed using the BWR SCC program. Edit from 5/11/2006 email - on page 3.1-47, the component type 'flanges, head nozzle flanges (N6, N7), blank flanges (N6)'; instrumentation (N11, N12)'; and on page 3.1-52, the component type 'thermal sleeves , feedwater inlets (N4)' are managed using inservice inspection, water chemistry control - BWR. Please confirm these nozzles are less than 4 NPS. Please clarify how to manage feedwater inlets thermal sleeve with ISI program.	LRA Amendment The BWRSCC program (GALL Section XI.M7) applies to stainless steel piping >=4" in diameter. N13 and N14 are 2" nozzles. Safe ends <4" N10 is a 2" safe end. N11 and N12 are 2" nozzles. N6 and N7 are low alloy steel and thus not susceptible to IGSCC. N6 blank flanges are 6" stainless steel flanges. These flanges were included in the ISI Program with the rest of the nozzle assembly. The feedwater thermal sleeves (N4) are a combination of stainless steel and nickel-based alloy in a 10 inch nozzle. The BWRSCC program in NUREG-1801 does not appear to include feedwater thermal sleeves. Therefore, the feedwater thermal sleeves were included in the ISI and water chemistry control programs. The status of the feedwater thermal sleeves has already been given in response to question 291. That response is reproduced below. The feedwater nozzle thermal sleeves are in Table 3.1.2-1 with an intended function of pressure boundary. Cracking of the thermal sleeves is managed by Inservice Inspection and Water Chemistry Control – BWR. Further review of the thermal sleeve design (to determine exactly how ISI inspects them) determined that the VY sleeves are not welded in place; rather they are an interference fit. As such, there is no weld to the pressure boundary piping that can be examined by ISI. Given that there is no pressure boundary weld, these sleeves are not part of the pressure boundary. As such they have no intended function for license renewal, and with no intended function they are not subject to aging management review1. Therefore, Vermont Yankee will amend the license renewal application to indicate that the feedwater thermal sleeves are not subject to aging management review. The feedwater thermal sleeves have no non-safety affecting safety related (a2) function. They are completely contained within the feedwater piping and cannot spray or leak on other equipment. The feedwater thermal sleeves are a part of the feedwater piping inside the vessel, and failure of that piping does not defeat the delivery of water to the vessel annulus, as any leakage also goes to the vessel annulus. This requires an amendment to the LRA	Accepted
210	3.1.1-43-P-01 On page 3.1-56, the component type 'control rod guide tubes, bases' is managed using BWR vessel internals, water chemistry control - BWR. The component type appears to be described by the structure and/or component column in GALL Table IV.B1. Please clarify the basis for assigning Note D.	The matching of component types between the plant and NUREG-1801 is not always straightforward. Minor differences in component names (as in this example) can lead to uncertainty in the intended scope of components in the NUREG-1801 item. Our approach was to err conservatively, so Notes C and D were sometimes used where Notes A and B might have been acceptable. Since the comparison is equally valid with either set of notes, this conservative approach is considered appropriate.	Closed

Item	Request	Response	Status
211	3.1.1-44-P-01 On page 3.1-52, the component type 'thermal sleeves recirc inlet (N2) core spray (N5)' is managed using BWR vessel internals and water chemistry control - BWR. Please confirm that for the recirc inlet nozzle thermal sleeve, Note B would apply. Edit from 5/11/2006 email - On page 3.1-52, the component type 'thermal sleeves recirc inlet (N2) core spray (N5)' is managed using BWR vessel internals and water chemistry control - BWR. Please confirm that for the recirc inlet nozzle thermal sleeve, Note B would apply. Please clarify how BWR Vessel Internal Program manages recirc inlet thermal sleeves.	The recirc inlet thermal sleeve is a match for the jet pump assembly thermal sleeve in NUREG-1801 item IV.B1-13, so Note B could be applied to that portion of this line for cracking. However, the core spray thermal sleeve does not match and Note D was selected to conservatively cover both component types. As described in the response to question 3.1.1-43-P-01, the comparison is equally valid with the selection of either Note B or D. Revised Answer to Revised Question - The recirc inlet thermal sleeve is a match for the jet pump assembly thermal sleeve in NUREG-1801 item IV.B1-13, so Note B could be applied to that portion of this line for cracking. However, the core spray thermal sleeve does not match and Note D was selected to conservatively cover both component types. NUREG-1801 Item IV.B1-7 could also have been referenced for the core spray thermal sleeve with a Note B and credit for the same programs. As described in the response to question 3.1.1-43-P-01, the comparison is equally valid with the selection of either Note B or D. Appendix B of the application identifies some exceptions to the NUREG-1801 description of the BWR Vessel Internals Program; however, none of these exceptions are related to the recirc inlet (jet pump assembly) thermal sleeve. The VYNPS BWR Vessel Internals Program management of cracking for the recirc inlet thermal sleeve is consistent with the NUREG-1801 program that is credited in Item IV.B1-13 for this component.	Closed
212	3.1.1-47-P-01 In many cases (beginning on page 3.1-56), component types are managed using water chemistry control – BWR and not the ISI program. Please provide the basis for excluding them from the ISI program. Edit from 5/11/2006 email - In many cases (beginning on page 3.1-56), component types are managed using water chemistry control – BWR alone for loss of material. Please provide the basis for excluding them from the ISI program.	Page 3.1-56 is the beginning of the reactor vessel internals (Table 3.1.2-2). In general the reactor vessel internals are not code parts and are not included in the Inservice Inspection Program. This is discussed in Item 3.1.1-47 in Table 3.1.1 of the LRA. Even in cases like the shroud support, where the components are considered code parts, the BWRVIP provides the approved inspections for these components. Those inspections are implemented by augmenting the Inservice Inspection program, but the BWR Vessel Internals program is credited as the controlling program.	Closed
213	3.1.1-48-P-02 On page 3.1-73, the component type 'tank (CRD accumulator)' is managed using water chemistry control - BWR, One-time inspection. It is not clear that the tank is <NPS4, so ISI would seem a more appropriate AMP for verification (and a different GALL item may be a more useful reference).	The One-Time Inspection Program as described in LRA Appendix B, Section B.1.21, includes all piping and valves <4" NPS. The CRD accumulators are included in this program. While they are slightly larger than 4", they are connected to the RCS by long runs of 1 inch piping and are therefore treated with that small bore piping. The CRD accumulators are not reactor coolant pressure boundary parts. Each drive has two accumulators, one of which is filled with nitrogen and the other with part nitrogen and part water. These components are not subject to ISI. Consequently, Water Chemistry Control augmented by One-Time Inspection is the best option.	Closed
214	3.1.1-48-P-03 On page 3.1-63, the component type 'condensing chambers' is managed using water chemistry control - BWR, One-time inspection. Please confirm that this component is <NPS4	The One-Time Inspection Program includes all piping and valves <4" NPS. The instrumentation condensing chambers on the main steam flow elements are included in this program. While they may be slightly larger than 4", they are connected by 1 inch instrument piping and are treated with that small bore piping. These chambers are not subject to other inspections such as ISI.	Closed

Item	Request	Response	Status
215	3.1.1-49-P-01 On page 3.1-62, the component type 'shroud support, ring, cylinder, and legs, access hole cover' is managed using BWR vessel internals, water chemistry control - BWR. For the access hole cover plate, GALL recommends ISI and water Chemistry. Please identify the specific inspection(s) for this component under the RVI program. Extended question from meeting on 6/27/06: VY credits the BWR vessel internals program for managing the access hole covers, but the NRC is not aware of any BWRVIP document that addresses the access hole covers. Please clarify how VYNPS manages the access hole covers.	POTENTIAL RAI VY performed a VT in 1995 and 1996, a MVT1 in 1998, and an EVT1 in 1999 and 2002. Additional EVT1 inspections are scheduled for 2006 and 2009. [Appendix A of PP 7027] The examination coverage includes the entire weld surface, in addition to the heat-affected zones." [Sec 4.3 of NE 8067] Section 4.3 of NE 8067 is reproduced below. It requires that the access hole covers be examined by EVT-1. 4.3 Access Hole Cover Welds – The access hole cover welds shall be examined by the EVT 1 method. There are two oval access hole cover welds, located at 0 and 180 degrees. They are designated as 0-AHC and 180-AHC. The GTAW portion is Inconel Alloy 82 and the SMAW portion is Inconel Alloy 182. Note that because these are nickel based welds, the required examination coverage includes the entire weld surface, in addition to the heat affected zones. See drawing 5920 253	Accepted
216	3.1.1-50-P-01 On page 3.1-36, the component type 'other pressure boundary bolting, flange bolts and nuts (N6A, N6B, N7), CRD flange cap-screws and washers' is managed using inservice inspection. Please confirm that the new Bolting Integrity AMP will be applied to this item, and identify a more appropriate GALL item.	License Renewal Commitment #34 LRA Amendment The Inservice Inspection program is used to manage cracking of this Class 1 bolting since these components are required to be inspected in accordance with ASME Section XI IWB requirements. A Bolting Integrity Program is under development (commitment #34) that will address the aging management of bolting in the scope of license renewal including the bolting identified in this line item. The GALL Bolting Integrity Program XI.M18 states that the ASME Section XI Inservice Inspection Program XI.M1 supplements the Bolting Integrity Program. GALL line item (IV.A1-9) identified in the LRA for comparison is for BWR high-strength low-alloy steel closure studs and nuts exposed to air with an aging effect of cracking. A review of GALL Chapter IV identified no other BWR closure bolting line items exposed to air with cracking as an aging effect. Therefore this line item was selected as the appropriate comparison and will remain the appropriate comparison with the inclusion of the Bolting Integrity Program.	Accepted
217	3.1.1-51-P-01 On page 3.1-60, the component type 'jet pump castings, transition piece inlet elbow/ nozzle, mixer flange and flare, diffuser collar' is managed using thermal aging embrittlement of CASS. Please confirm that IV.B1-11 also applies.	NUREG-1801 item IV.B1-11 also applies. The resulting note would be Note A.	Closed

Item	Request	Response	Status
218	3.1.1-52-P-01 On page 3.1-36, the component type 'incore housing bolting, flange bolts, flange nut and washer' is managed using inservice inspection. Please confirm that the new Bolting Integrity AMP will be applied to this item, and identify a more appropriate GALL item.	License Renewal Commitment #34 LRA Amendment Revised answer for 5/11/2006 email - A Bolting Integrity Program is under development (commitment #34) that will address the aging management of bolting in the scope of license renewal including the bolting identified in this line item. In addition, the Inservice Inspection Program is used to manage cracking of this Class 1 bolting since these components are required to be inspected in accordance with ASME section XI IWB requirements. The GALL Bolting Integrity Program XI.M18 states that the ASME Section XI Inservice Inspection Program XI.M1 supplements the Bolting Integrity Program. The GALL line item (IV.A2-6) identified in the LRA for comparison is for stainless steel flange bolting exposed to air with an aging effect of cracking. A review of GALL Chapter IV identified no BWR stainless steel bolting line items exposed to air with cracking as an aging effect. Therefore this line item was selected as the appropriate comparison. A Bolting Integrity Program is under development that will address the aging management of bolting in the scope of license renewal including the bolting identified in this line item. The Inservice Inspection program is used to manage cracking of this Class 1 bolting since these components are required to be inspected in accordance with ASME section XI IWB requirements. The GALL Bolting Integrity Program XI.M18 states that the ASME Section XI Inservice Inspection Program XI.M1 supplements the Bolting Integrity Program. The GALL line item (IV.A2-6) identified in the LRA for comparison is for stainless steel flange bolting exposed to air with an aging effect of cracking. A review of GALL Chapter IV identified no BWR stainless steel bolting line items exposed to air with cracking as an aging effect. Therefore this line item was selected as the appropriate comparison and will remain the appropriate comparison with the inclusion of the Bolting Integrity Program.	Accepted
219	3.1.1-55-P-01 On page 3.1-71, the component type 'pump casing and cover (RR)' is managed using inservice inspection. On page 3.1-75, the component type 'valve bodies <4" NPS' is managed using one-time inspection. On page 3.1-79, the component type 'valve bodies >=4" NPS' is managed using inservice inspection. Please clarify the basis, in each case, for asserting that the AMP used is different from the one suggested by GALL.	Pump casing and cover – The VYNPS ISI program is a plant-specific program, not compared to the GALL XI.M1 program. Therefore, Note E was applied wherever the ISI program was called for in GALL. Note that earlier on this same page, WCC and ISI are used to manage loss of material and Note A is used – that is because GALL only requires water chemistry and the use of ISI here is over and above what GALL requires. For valve bodies <4" NPS – GALL manages reduction of fracture toughness (ROFT) using ISI, however, ISI only requires inspections of valves bodies >=4" NPS. Therefore, the OTI (small bore piping) program is used to mange ROFT for these small valves. Valve bodies >=4" NPS - The VYNPS ISI program is a plant specific program, not compared to the GALL XI.M1 program. Therefore, VYNPS applied Note E wherever the ISI program was identified in GALL.	Closed

Item	Request	Response	Status
220	3.1.1-57-P-01 On page 3.1-72, the component type 'restrictors (ms)' is managed using one-time inspection. Please describe how OTI satisfies the recommendations of GALL AMP XI.M12, Thermal Aging Embrittlement of CASS.	GALL program XI.M12 is applicable to "primary pressure boundary and reactor vessel internals components' and the main steam flow restrictors are neither. As the main steam flow restrictors are not ASME pressure boundary components, program XI.M12 is not applicable. Thermal aging embrittlement results in increased rates of crack growth, which are evidenced by cracking in the material. The One-Time Inspection Program will be used to verify that reduction of fracture toughness has not progressed to the point that unacceptable cracking of the component has occurred.	Closed
221	3.3.1-03-K-01 On page 3.3-91, the component type 'heat exchanger (tubes)' is managed using water chemistry control - BWR. Please confirm that the VYNPS Water Chemistry - BWR AMP addresses fouling in heat exchanger tubes.	As stated in LRA Section 3.3.2.2.2, reduction of heat transfer due to fouling for stainless steel heat exchanger tubes exposed to treated water is managed by the Water Chemistry Control – BWR Program. The effectiveness of the Water Chemistry Control-BWR Program will be confirmed by the One-Time Inspection Program through an inspection of a representative sample of components crediting this program including areas of stagnant flow.	Closed

Item	Request	Response	Status
222	3.3.1-05-K-01 On page 3.3-74, the component type 'heat exchanger (tubes) ' is managed using water chemistry control - BWR. GALL recommends a plant-specific program. Please clarify how each of the attributes of SRP-LR Appendix A1 is addressed by a purely preventive program. Edit from 5/11/2006 email - On page 3.3-74, the component type 'heat exchanger (tubes) ' is managed using water chemistry control - BWR. GALL recommends a plant-specific program. Please clarify how this component is addressed by a purely preventive program.	SRP-LR Appendix A1 is applicable to purely preventive programs. In fact, Section A.1.2.3.3, Item 4, states, "For prevention and mitigation programs, the parameters monitored should be the specific parameters being controlled to achieve prevention or mitigation of aging effects. An example is the coolant oxygen level that is being controlled in a water chemistry program to mitigate pipe cracking." As stated in LRA Section B.1.30.2, the Water Chemistry Control – BWR Program is consistent with the program described in NUREG-1801, Section XI.M2, "Water Chemistry." The One-Time Inspection Program, described in LRA Section B.1.21 includes inspections to verify the effectiveness of the water chemistry control aging management programs (Water Chemistry Control – Auxiliary Systems, Water Chemistry Control – BWR, and Water Chemistry Control – Closed Cooling Water) by confirming that unacceptable cracking, loss of material, and fouling is not occurring. As stated in LRA Section B.1.21, the One-Time Inspection Program is a new program which will be consistent with the program described in NUREG-1801, Section XI.M32, "One-Time Inspection." The 10 attributes of SRP-LR Appendix A1 for the Water Chemistry Control – BWR Program and the One-Time Inspection Program are the same as the attributes of the NUREG-1801 programs XI.M2 and XI.M32. Added Response to 5/11/2006 email - Page 3.3-74 has multiple line items for heat exchanger (tubes) managed using Water Chemistry Control – BWR. The response assumes this question refers to the line item for cracking of heat exchanger (tubes) since this line item references NUREG-1801 item VII.E3-3 which recommends a plant-specific program. As stated in LRA Section B.1.30.2, the Water Chemistry Control – BWR Program optimizes the primary water chemistry to minimize the potential for loss of material and cracking. This is accomplished by limiting the levels of contaminants in the RCS that could cause loss of material and cracking. Additionally, VYNPS has instituted hydrogen water chemistry (HWC) with noble metals to limit the potential for intergranular SCC (IGSCC) through the reduction of dissolved oxygen in the treated water is consistent with the program described in NUREG-1801, Section XI.M2, "Water Chemistry." The One-Time Inspection Program, described in LRA Section B.1.21 includes inspections to verify the effectiveness of the water chemistry control aging management programs (Water Chemistry Control – Auxiliary Systems, Water Chemistry Control – BWR, and Water Chemistry Control – Closed Cooling Water) by confirming that unacceptable cracking, loss of material, and fouling is not occurring.	Closed

Item	Request	Response	Status
223	3.3.1-13-K-01 On page 3.3-92, the component type 'neutron absorber (boral)' is managed using water chemistry control - BWR. GALL recommends a plant-specific program. Please clarify how each of the attributes of SRP-LR Appendix A1 is addressed by a purely preventive program.. Edit from 5/11/2006 email - On page 3.3-92, the component type 'neutron absorber (boral)' is managed using water chemistry control - BWR. GALL recommends a plant-specific program. Please clarify how this component is addressed by a purely preventive program.	Page 3.3-92 has multiple line items for neutron absorber (boral) managed using Water Chemistry Control – BWR. The response assumes this question refers to the line item for loss of material for neutron absorber (boral) since this line item references NUREG-1801 item VII.A2-3 which recommends a plant-specific program. SRP-LR Appendix A1 is applicable to purely preventive programs. In fact, Section A.1.2.3.3, Item 4, states, "For prevention and mitigation programs, the parameters monitored should be the specific parameters being controlled to achieve prevention or mitigation of aging effects. An example is the coolant oxygen level that is being controlled in a water chemistry program to mitigate pipe cracking." As stated in LRA Section B.1.30.2, the Water Chemistry Control – BWR Program is consistent with the program described in NUREG-1801, Section XI.M2, "Water Chemistry." The One-Time Inspection Program, described in LRA Section B.1.21 includes inspections to verify the effectiveness of the water chemistry control aging management programs (Water Chemistry Control – Auxiliary Systems, Water Chemistry Control – BWR, and Water Chemistry Control – Closed Cooling Water) by confirming that unacceptable cracking, loss of material, and fouling is not occurring. As stated in LRA Section B.1.21, the One-Time Inspection Program is a new program which will be consistent with the program described in NUREG-1801, Section XI.M32, "One-Time Inspection." The 10 attributes of SRP-LR Appendix A1 for the Water Chemistry Control – BWR Program and the One-Time Inspection Program are the same as the attributes of the NUREG-1801 programs XI.M2 and XI.M32. Added Response per 5/11/2006 email As stated in LRA Section B.1.30.2, the Water Chemistry Control – BWR Program optimizes the primary water chemistry to minimize the potential for loss of material and cracking. This is accomplished by limiting the levels of contaminants in the RCS that could cause loss of material and cracking. Additionally, VYNPS has instituted hydrogen water chemistry (HWC) with noble metals to limit the potential for intergranular SCC (IGSCC) through the reduction of dissolved oxygen in the treated water is consistent with the program described in NUREG-1801, Section XI.M2, "Water Chemistry." The One-Time Inspection Program, described in LRA Section B.1.21 includes inspections to verify the effectiveness of the water chemistry control aging management programs (Water Chemistry Control – Auxiliary Systems, Water Chemistry Control – BWR, and Water Chemistry Control – Closed Cooling Water) by confirming that unacceptable cracking, loss of material, and fouling is not occurring.	Accepted

Item	Request	Response	Status
224	3.3.1-14-K-01 In many cases, beginning on page 3.3-61 for auxiliary systems, component types exposed to oil are managed using the oil analysis program. Please confirm that the VYNPS Oil Analysis AMP is consistent with GALL XI.M32, "One-Time Inspection," as well as with XI.M39, "Lubricating Oil Analysis."	LRA Amendment As stated in LRA Section 3.2.2.7, steel piping and components in auxiliary systems at VYNPS that are exposed to lubricating oil are managed by the Oil Analysis Program, which includes periodic sampling and analysis of lubricating oil to maintain contaminants within acceptable limits, thereby preserving an environment that is not conducive to corrosion. As stated in LRA Section B.1.20, the Oil Analysis Program is consistent with the program described in NUREG-1801, Section XI.M39, Lubricating Oil Analysis, with a minor exception. The Oil Analysis Program is not consistent with GALL XI.M32, "One-Time Inspection," nor are one-time inspections necessary to verify the effectiveness of the program. Metals are not corroded by the hydrocarbon components of lubricants. Lubricating oils are not good electrolytes and the oil film on the wetted surfaces of components tend to minimize the potential for corrosion. Corrosion in lube oil systems only occurs as the result of the presence of impurities or moisture. Therefore, an effective oil analysis program, which maintains impurities and moisture below specified limits, precludes the need for one-time inspections. Operating experience at VYNPS has confirmed the effectiveness of the Oil Analysis Program in maintaining moisture and impurities within limits such that corrosion has not and will not affect the intended functions of these components. In numerous past precedents (including NUREG-1828, Arkansas Nuclear One Unit 2 SER, Section 3.0.3.3.6, and NUREG-1831, Donald C. Cook SER, Section 3.0.3.3.8), the staff concluded that an effective oil analysis program, which maintains impurities and moisture below specified limits, is sufficient to demonstrate that the effects of aging will be adequately managed so that the intended functions will be maintained consistent with the current licensing basis for the period of extended operation. The One-Time Inspection program will be revised to include activities to confirm the effectiveness of the Oil Analysis and Diesel Fuel Monitoring programs.	Accepted