

Initial Questions for VYNPS

Question No.	Question
AMPs	
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?
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?
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?
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 <u>subject to aging management review</u> ." What is the basis for including piping but excluding tanks?
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?
B.1.1-L-05	Detection of Aging Effects Element - The GALL Report states, "Inspections performed to confirm that coating and wrapping are intact are an effective method to ensure that corrosion of external surfaces has not occurred and the intended function is maintained." The LRA states, "Inspections via methods that allow assessment of pipe condition without excavation may be 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?
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.
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 report 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?

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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.
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.
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?
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 will be adequately managed during the period of extended operation.
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.
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.
B.1.8-L-01	Operating Experience Element - The LRA states, "A QA audit in 2001 revealed latent noncompliance with station administrative and Appendix J implementing procedures." Please clarify the meaning of "latent" in this context.
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.
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.
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.
B.1.9-K-04	Please provide the technical justification for not adding fuel oil additives.
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.
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?
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?
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?
B.1.9-K-09	How often is the fuel oil in the tanks sampled? Is this data trended and what criteria is used to initiate corrective actions?
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?
B.1.10-N-01	The results of the EQ of electrical equipment in LRA Section 4.4. indicate that the aging effects of the EQ of electrical equipment identified in the TLAA will be managed during the extended period of operation under 10 CFR 54.21(c)(1)(iii). However, no information is provided on the attribute of a re-analysis of an aging evaluation to extend the qualification life of electrical 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).
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.
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.
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.
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?
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?
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 rationale for why the Halon 1301 suppression system is not subject to review.
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?
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?
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?
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?
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 biofouling 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?
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.
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.
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.
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?
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.
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.
B.1.15.1-W-03	Explain why the Containment Inservice Inspection Program is a plant-specific program instead of a 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.
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.
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 inservice inspection program.
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.
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.
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.
B.1.17-N-03	As stated in FSAR Section 8.3.3 (Page 8.3-5 of 8), the underground power lines - which run from the adjacent Vernon Hydroelectric Station to station switchgear - have been designated as the Station Backout 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.
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.
B.1.18-N-02	Confirm that the test includes both cables and connections.
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.
B.1.19-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.
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).
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?
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.
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?
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?
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.
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?
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 <u>throughout the volume of material</u> . 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.
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.M2, [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?
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.
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.
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.
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.
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.
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.
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.
B.1.27.1-W-01	Provide a masonry wall inspection report for an unreinforced masonry wall.
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.
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?
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.
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.
B.1.27.2-W-03	Explain if VYNPS has any porous concrete subfoundations and a site dewatering system. Explain if the Structures Monitoring Program requires periodic sampling and testing of groundwater to determine and confirm 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.
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?
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.
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.
B.1.27.2-W-07	VYNPS lists the following structure issues under operating experience for this AMP. <ul style="list-style-type: none"> • 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 followup 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.
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.
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.
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?
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"?
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..."?
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?
B.1.30.3-M-02	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"?
AMRs	
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)
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.
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.
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., heatup) 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 bolts. Provide a discussion why torque relaxation for bolted connections of switchyard bus is not a concern for VYNPS.
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.
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

	<p>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.</p>
3.6.2.2-N-05	<p>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.</p>
3.6.2.2-N-06	<p>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).</p>
3.6.2.2-N-07	<p>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: <u>3.6.2.2-7(a)</u>. 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? <u>3.6.2.2-7(b)</u>. 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? <u>3.6.2.2-7(c)</u>. 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.</p>

3.6.2.2-N-08	<p>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.</p>
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