Entergy

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2CAN090402

September 10, 2004

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: License Renewal Application Clarifications
TAC No. MB8402
Arkansas Nuclear One – Unit 2
Docket No. 50-368
License No. NPF-6

Dear Sir or Madam:

During recent teleconferences, the Staff requested clarifications to previously docketed requests for additional information (RAI) responses for the Arkansas Nuclear One, Unit 2 (ANO-2) License Renewal Application (LRA). These clarifications are contained in Attachment 1.

New commitments contained in this submittal are summarized in Attachment 2. Should you have any questions concerning this submittal, please contact Ms. Natalie Mosher at (479) 858-4635.

I declare under penalty of perjury that the foregoing is true and correct. Executed on September 10, 2004.

Sincerely,

Dale E. James
Manager, Licensing

DEJ/nbm

Attachments

A100

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Attachment 1

2CAN090402

LRA Clarifications

LRA Clarifications

RAI 2.3.4.2-1 Second Clarification: The Staff requested that Entergy clarify this RAI with respect to scoping.

Response: Entergy previously stated these valves perform their function with moving parts and, in accordance with 10CFR54.21(a)(1)(i), are not subject to aging management review. However, these valves are attached to nonsafety-related piping and, in accordance with Section 2.1.1.2.2 of the LRA, "Spatial Failures of Nonsafety-Related SSCs," they are within the scope of license renewal and subject to aging management review as part of nonsafety-related piping and supports up to and including the first equivalent anchor beyond the safety/nonsafety interface. The safety/nonsafety interface is shown on LRA drawings through the use of license renewal boundary flags. For the main feedwater system the safety-nonsafety interface is at the boundary flag on LRA drawing M-2206 sheet 1 (C2) and (C8) at feedwater block valves 2CV-1074-1 and 2CV-1024-1. Attached in-scope piping includes the second (outboard) block valve in question and the main feedwater piping upstream of both block valves up to the first equivalent anchor. The valves are included in the line item for component type valve in Table 2.3.4-2 of the ANO-2 LRA. The component type, material, environment and aging management program combination for the valves are included in Table 3.4.2-2 in the line item for valve, carbon steel, treated water >220°F.

RAI 2.3.3.4-1 Clarification: The Staff requested that Entergy provide a reference to the LRA tables that the alternate AC exhaust piping insulation should have been included.

Response: The insulation on the alternate AC exhaust piping should have been included in Tables 2.3.3-4 and 3.3.2-4.

RAI 3.3-1 Second Clarification: The applicant clarified that fatigue cracking in the charging pump block (casing) occurred in the early 1990s at ANO-2. The applicant stated that the pump block design was modified and since the design change was implemented, there have been no instances of charging block cracking which provides evidence that the condition has been corrected. In regard to the bolting, the applicant stated that cracking of charging pump bolting was not identified in the operating experience review and as such was not identified as an aging effect requiring management. The applicant concluded that, based on operating experience, cracking due to fatigue was not identified in the LRA as an aging effect requiring management for the charging pump block or bolting.

The LRA identifies fatigue-cracking in the chemical volume control system (CVCS) pump casing is managed by the Periodic Surveillance and Preventive Maintenance (PSPM) Program, however, LRA Appendix B.1.18 does not identify fatigue-cracking for the CVCS pumps. The applicant clarified that, based on operating experience, fatigue was not identified as an aging effect for the charging pump block bolting. The Staff recognizes that various industry experience with reciprocating type pumps shows that fatigue is plausible for CVCS charging pumps. The American Society of Mechanical Engineers (ASME) Section III Code identifies that, for reciprocating type pumps, the liquid cylinder and pressure retaining bolting are exposed to significant fatigue loadings. The Generic Aging Lessons Learned (GALL) item VII E1.5.1 and E1.5.2 identify crack initiation and growth/cracking in the high pressure pump casing and closure bolting in the CVCS. The Calvert Cliffs LRA Section 5.2 identifies operating experience with fatigue failures in the

CVCS piping and considers fatigue to be plausible for the charging pump block and bolts in that these components are subject to significant transients, including high or low cycle vibration, thermal cycles and pressure cycles. The ANO-1 LRA Appendix C Section 9.3.3 also identifies cracking of bolting materials caused by fatigue as an aging effect. The applicant is requested to clarify if pump casing and bolting in the CVCS are susceptible to fatigue-cracking and, if they are, to update the PSPM Program to include inspection criteria for fatigue-cracking. If CVCS pumps are not subject to fatigue-cracking, the applicant is requested to provide the technical justification considering the ASME Code/industry experience and clarify why LRA Table 3.3.2-5 identifies fatigue-cracking as an applicable aging effect for the CVCS pump casing managed by the PSPM Program. Also, if after further review, cracking-fatigue will be considered an appropriate aging effect in CVCS pump bolting, the applicant is requested to clarify which program will manage this aging effect.

Response: Cracking of the charging pump casing was identified as an aging effect requiring management in LRA Table 3.3.2-5 for the charging pump plunger cap since operating experience indicated that cracking due to fatigue of the plunger cap is a credible failure mechanism. Although cracking due to fatigue of the charging pump block was not identified as a likely failure mechanism, the pump block will be periodically inspected for indications of cracking. Consistent with the clarification response on page 8 of correspondence dated July 22, 2004 (2CAN070409), the PSPM Program will manage cracking of the charging pump plunger cap and block.

Parameters monitored:
During maintenance inspections, plunger caps and blocks are visually inspected for indications of cracking.

Detection of aging effects:
Inspections for wear or damage, including cracking, are performed on any parts removed and the pump cylinder bore during maintenance.

Acceptance criteria:
Indications of cracking results in additional non-destructive examination (such as dye penetrant tests) and replacement of the affected component if cracking is confirmed.

For the charging pump bolting, Electric Power Research Institute (EPRI) Report 1003056 (the Mechanical Tools) states that cracking of bolting may be attributed to stress corrosion cracking and/or fatigue. It further states that fatigue cracking of bolting due to high cycle fatigue is not a concern for license renewal since it would be discovered during the current license period in most cases where systems are frequently operated. During regular pump maintenance (each pump has historically been repacked two to three times a year), bolting is inspected for defects. Evidence of cracking would be detected during these inspections. Recent maintenance history (since 1998) is consistent with previous operating experience and with EPRI Report 1003056 in that there have been no instances of pump casing bolting requiring replacement due to cracking or other defects. Also, a review of condition reports prior to 1998 indicated no instances of cracking of charging pump bolting. Since the CVCS charging pump bolting has been in service for over 25 years with no operating experience indicating fatigue cracking, cracking due to fatigue is not an aging effect requiring management for the charging pump bolting. As past precedence documented in NUREG-1779, Safety Evaluation Report Related to the License Renewal of St. Lucie

Nuclear Plant, Units 1 and 2, cracking of charging pump bolting is not identified as an aging effect requiring management.

RAI 3.3-2 Second Clarification: The applicant clarified that, although opportunistic inspections are performed during maintenance on many auxiliary systems, some are performed periodically. The applicant identified various periodic verification inspections of auxiliary system components including the PSPM Program, the chemistry inspections and the Service Water Integrity Program. The applicant also identified specific recent inspections, including components exposed to stagnant conditions, that have been performed for each auxiliary system material/environment group and additional inspections from other systems that are considered representative of the material/environment group. Therefore, the applicant concludes that the effectiveness of the water chemistry control programs has been confirmed. The LRA shows the majority of aging management review components in a treated water environment does not have a chemistry verification inspection and the response does not answer the question regarding an appropriate sample size addressed in industry documents such as the GALL One-Time Inspection Program and Nuclear Energy Institute (NEI) 95-10 Section 4.3. The Staff is concerned that the limited sample of auxiliary system components inspected may have not been sufficient to conclude that the effectiveness of the water chemistry programs has been confirmed and additional inspections may be required. The applicant is requested to provide technical justification that an adequate sample size has been or will be selected prior to period of extended operation on the basis of industry criteria/operating experience.

Response: The sample of components inspected is sufficient to conclude that the effectiveness of the water chemistry programs has been confirmed and additional inspections are not required. The inspections identified are an adequate sample on the basis of industry criteria and operating experience.

Industry criteria are as follows.

NUREG-1801 One-Time Inspection Program states,

> "The inspection includes a representative sample of the system population, and, where practical, focus [sic] on the bounding or lead components most susceptible to aging due to time in service, severity of operating conditions, and lowest design margin."

NEI 95-10 states,

> "A sample consists of one or more structures or components drawn from the scope. The applicant must determine a sample size that is adequate to provide reasonable assurance that the effects of aging on the structure or component population will not prevent the performance of intended functions during the period of extended operation. The size of the sample should include consideration of the specific aging effect, location, existing technical information, materials of construction, service environment, previous failure history, etc. The sample should be biased toward locations most susceptible to the specific aging effect of concern."

ANO-2 auxiliary systems contain five groups of components that credit water chemistry control programs.

1. carbon steel and aluminum exposed to treated water*
2. cast iron exposed to treated water
3. copper alloy exposed to treated water
4. stainless steel exposed to treated borated water
5. stainless steel exposed to treated water

*Group 1 contains one aluminum component which was installed in1998. Because aluminum has better corrosion resistance than carbon steel, conditions identified in inspections of carbon steel components bound the condition of the aluminum component.

The sample for each of the five groups includes components that are subject to loss of material; components made of the same material; and components exposed to the same, or a harsher, service environment. The samples include components in stagnant or low flow areas, where loss of material is more likely and are representative of components in most susceptible locations. Operating experience has shown that loss of material is more likely in stagnant or low flow areas. The samples for each of the five auxiliary system groups include items such as heat exchangers, piping and valves normally in standby, and system low points or stagnant areas which are the most susceptible locations.

A review of maintenance data for the past five years indicates that the number of inspections completed for each of the groups exceeds the minimum number of random samples necessary to obtain a 90% confidence level that aging effects would have been identified, if present.

The ANO-2 review of operating experience included a review of condition reports (CRs), CR trending data, and interviews with site personnel regarding water chemistry program operating experience. The operating experience review did not identify component failures or significant adverse conditions that were the result of an ineffective water chemistry program. Also, the CR trending data did not identify recurrent component degradation occurring in the systems covered under this aging management program.

Since the identified inspections address all industry criteria and operating experience and constitute a statistically significant sample, they are an adequate sample on the basis of industry criteria and operating experience. Therefore, the sample of components inspected is sufficient to conclude that the effectiveness of the water chemistry programs has been confirmed and additional inspections are not required.

RAI 3.3.2.4.11-1 Clarification: In a letter dated August 18, 2004 (2CAN080401), the response to the clarification identified eight systems containing raw or untreated water that relied on the System Walkdown Program as the sole aging management program for internal aging effects and provided justification that this program would be adequate to manage the effects of aging. The NRC Staff has concluded that the System Walkdown Program is not appropriate as a sole aging management program for these systems.

Response: As a result, ANO-2 will implement a One-Time Inspection Program for the components subject to aging management review that were included for 10CFR54.4(a)(2) in the following systems.

- Auxiliary building heating and ventilation
- Auxiliary building sump
- Drain collection header
- Liquid radwaste management
- Post accident sampling
- Resin transfer
- Regenerative waste
- Spent resin

The ANO-2 One-Time Inspection Program will be consistent with the program description in NUREG-1801 Vol. 2, XI.M32, One-Time Inspection. Adverse conditions identified during the inspections will be addressed as part of the ANO-2 Corrective Action Program. Corrective actions may include additional inspections, if warranted based on the inspection results. The following description of the One-Time Inspection Program will be added to the ANO-2 SAR as Section A.2.1.34.

A.2.1.34 ONE-TIME INSPECTION

The One-Time Inspection Program confirms that the aging effects are being adequately managed for components in raw or untreated water. This program will perform destructive or nondestructive inspections on internal surfaces of a sample of components in the following systems.

- Auxiliary building heating and ventilation
- Auxiliary building sump
- Drain collection header
- Liquid radwaste management
- Post accident sampling
- Resin transfer
- Regenerative waste
- Spent resin

The One-Time Inspection Program will be initiated prior to the period of extended operation.

RAI 4.5-2 Second Clarification: The Staff requested Entergy to propose a plan or a program that would provide a valid time-limited aging analysis (TLAA) for each group of tendons in the ANO-2 containment.

Response: Consistent with 10CFR54.21(c)(1)(iii), loss of tendon prestress will be adequately managed during the period of extended operation by continued implementation of tendon inspections required by ASME Code Section XI IWL. Relevant operating experience, including experience with prestressing systems described in NRC Information Notice (IN) 99-10, will be considered during inspections and data analysis. Prior to the period of extended operation, trend lines for ANO-2 tendon prestressing forces will be developed using regression analysis in accordance with guidance provided in NRC Information Notice (IN) 99-10. If future tendon examination data diverge from the expected trend, the discrepancy will be addressed in accordance with requirements of the Containment Inservice Inspection (ISI) Program (IWE/IWL) and the current licensing basis. Specifically, if prestressing force trend lines indicate that existing prestressing forces in the containment would go below the minimum required values (MRVs) prior to the next scheduled inspection (Reference 10CFR50.55a(b)(2)(ix)(B) or 10CFR50.55a(b)(2)(viii)(B)), then systematic retensioning of tendons, a reanalysis of the containment or a reanalysis of the post-tensioning system is warranted to ensure the design adequacy of containment.

In summary, the ANO-2 Containment ISI Program in accordance with the requirements of ASME Code Section XI IWL will provide reasonable assurance that the effects of aging on the intended functions of tendons will be adequately managed for the period of extended operation in accordance with the provisions of 10CFR54.21 (c)(1)(iii). ANO-2 SAR Section A.2.2.4 will be revised to read as follows.

A.2.2.4 CONCRETE CONTAINMENT TENDON PRESTRESS

The analysis of loss of prestress in the containment building post-tensioning system is a time-limited aging analysis. Loss of tendon prestress in the containment building post-tensioning system will be managed for license renewal in accordance with 10CFR54.21(c)(1)(iii), by the Containment ISI Program. This program, discussed in Section A.2.1.14, includes tendon surveillance testing. Prior to the period of extended operation, trend lines for ANO-2 tendon prestressing forces will be developed using regression analysis in accordance with guidance provided in NRC IN 99-10. If prestressing force trend lines indicate that existing prestressing forces in the containment would go below the minimum required values (MRVs) prior to the next scheduled inspection (Reference 10CFR50.55a(b)(2)(ix)(B) or 10CFR 50.55a(b)(2)(viii)(B)), then systematic retensioning of tendons, a reanalysis of the containment or a reanalysis of the post tensioning system is warranted to ensure the design adequacy of containment.

RAI 4.7.3-1 Restated: In 4.7.3 (Page 4.7-2) of the LRA, the applicant concluded that the reactor coolant pump (RCP) flywheel is not a TLAA. The basis for this conclusion is a 1997 safety evaluation of a fatigue crack growth analysis that was presented in a CE Owners Group (CEOG) topical report. This safety evaluation allowed the licensee to lengthen the RCP flywheel inspection period for ANO-1, ANO-2, and five other units. The fatigue crack growth analysis for ANO-1 and ANO-2 is based on 4,000 RCP startup and shutdown cycles. The RCP flywheel was identified as a TLAA in the LRA for ANO-1, and two other units that are identified in the topical report and that have been granted renewed licenses.

Please provide justification why the RCP flywheel is not a TLAA for ANO-2. If the RCP flywheel is a TLAA, provide the TLAA for the RCP flywheel for ANO-2, and include the justification for why 4,000 RCP startup and shutdown cycles remain bounding through the end of the extended period of operation for ANO-2. In addition, the applicant must include a SAR Supplement summary description, in Appendix A, of the LRA for the TLAA on fatigue-induced crack growth of the ANO-2 RCP flywheel. The summary description should include a discussion on the safety margin for the acceptable flaw size, and the justification for why 4,000 RCP startup and shutdown cycles remain bounding through the end of the extended period of operation for ANO.

Clarification: As defined in 10CFR54.3, TLAAs are those licensee calculations and analyses that involve time-limited assumptions defined by the current operating term, for example, 40 years. The RCP flywheel analysis was based on an assumption of 4,000 startup and shutdown cycles equivalent to a period much longer than the cumulative operating period of 60 years. These 4,000 cycles are not a time-limited assumption defined by the current operating term. Therefore, this analysis does not meet the 10CFR54.3 definition of a TLAA. This is consistent with the previously approved licensee position for license renewal of the H. B. Robinson plant as documented in Section 4.1.2 of NUREG-1785, Safety Evaluation Report related to the License Renewal of H. B. Robinson Steam Electric Plant, Unit 2.

RCP startup and shutdown cycles typically occur only in conjunction with reactor coolant system (RCS) heatup or cooldown cycles. As indicated in LRA Table 4.3-1, the allowable number of heatup or cooldown cycles for 60 years of operation is 500. The number of RCP startup and shutdown cycles assumed in the flywheel fatigue crack growth analysis is eight times the number of RCS heatup or cooldown cycles allowed through the period of extended operation.

Entergy conservatively elects to treat the RCP flywheel analysis as a TLAA. As indicated in LRA Section 4.7.3, 4,000 cycles will not be approached during a 60-year plant license term. Therefore, the analysis remains valid for the period of extended operation. The following Section A.2.2.6.6 addressing the RCP motor flywheel will be added to the SAR Supplement (Appendix A).

A.2.2.6.6 RCP Motor Flywheel

The flaw growth analysis associated with the reactor coolant pump motor flywheel is conservatively treated as a time-limited aging analysis. The analysis addresses the growth of pre-existing cracks subjected to 4,000 reactor coolant pump motor startup or shutdown cycles, which exceeds by a factor of eight the number of RCP cycles projected through the period of extended operation. Therefore, the flaw growth analysis remains valid for the period of extended operation.

RAI B.1.1-4(a) Restated: In the Alloy-600 Program under the program attribute, "Detection of Aging Effects," the applicant states that "guidance from the MRP in conjunction with the pressurized water reactor (PWR) owners groups will be used to identify critical locations for inspection and augmentation of existing ISI inspections at ANO-2 where appropriate." The Staff believes that the strategic plan developed by the industry will be comprehensive and recommendations may be applicable to all 10 elements of the Alloy-600 Program. Identify the date that ANO-2 commits to submit, for review and approval, an augmented aging management program that includes all recommendations from the industry's strategic plan, and meets the 10 elements in accordance with the guidance in NUREG-1800, Appendix A.1, "Aging Management Review - Generic," Table A.1-1, "Elements of an Aging Management Program for License Renewal." The date must be prior to the period of extended operation.

Clarification: Primary water stress corrosion cracking (PWSCC) of nickel-based alloys is a current license term issue. As such, interaction between Entergy and the NRC Staff is ongoing to develop a program to manage the effects of aging due to this mechanism. In accordance with the statements of consideration, issues that are relevant to current plant operation are addressed by the existing regulatory process within the present license term rather than deferred until the time of license renewal. Consequently, the existing regulatory process provides assurance that aging effects caused by PWSCC of nickel-based alloys will be adequately managed during the period of extended operation. Consistent with all programs credited for license renewal at ANO-2, the Alloy-600 Program will be available on-site for NRC review. In addition, as requested by the NRC Staff, a description of the program will be submitted to the NRC for review and approval. The submittal date will be at least 24 months prior to the period of extended operation.

RAI B.1.22-1 Restated: The Reactor Vessel Internals Cast Austenitic Stainless Steel (CASS) Components Program is currently not in place. The applicant states in LRA Section B.1.22, that the aging management program will be consistent with NUREG-1801 (GALL), and that it will initiate the program prior to the period of extended operation. Management of the aging effects associated with void swelling of PWR reactor vessel internals is not included in the GALL report. The Staff requests that the applicant formally make a commitment to participate in industry initiatives, and to implement industry recommendations regarding void swelling when they become available. The Staff also requests that the applicant submit the inspection program to manage the aging effects associated with void swelling to the NRC for review and approval no later than three years prior to the period of extended operation.

Clarification: The Reactor Vessel Internals CASS Program will manage distortion due to void swelling. This program will provide visual inspections and non-destructive examinations of the reactor vessel internals during the period of extended operation. In addition, the investigation of the internals aging effects through activities of EPRI and other industry groups focused on reactor vessel internals will ensure a better understanding of void swelling. The results of industry investigations into void swelling will be considered when developing the ANO-2 Reactor Vessel Internals CASS Program.

As described in the LRA, the Reactor Vessel Internals Program is a new program to be developed prior to the period of extended operation. Consistent with all programs credited for license renewal at ANO-2, the Reactor Vessel Internals CASS Program, once

developed, will be available on site for NRC review. In addition, as requested by the NRC Staff, a description of the program will be submitted to the NRC for review and approval. The submittal date will be at least 24 months prior to the period of extended operation.

RAI B.1.23-1 Restated: This Reactor Vessel Internals' Stainless Steel Plates, Forgings, Welds, and Bolting Program is currently not in place. The applicant states in LRA Section B.1.23, that the aging management program will be consistent with NUREG-1801, and that it will initiate the program prior to the period of extended operation. Management of the aging effects associated with void swelling of PWR reactor vessel internals is not included in the GALL report. The Staff requests that the applicant formally make a commitment to participate in industry initiatives, and to implement industry recommendations regarding void swelling when they become available. The Staff also requests that the applicant submit the inspection program to manage the aging effects associated with void swelling to the NRC for review and approval no later than three years prior to the period of extended operation.

Clarification: The Reactor Vessel Internals' Stainless Steel Plates, Forgings, Welds, and Bolting Program will manage distortion due to void swelling. This program will provide for visual inspections and non-destructive examinations of the reactor vessel internals during the period of extended operation. In addition, investigation of the internals aging effects through activities of EPRI and other industry groups will ensure a better understanding of void swelling. The results of industry investigations into void swelling will be considered during development of the ANO-2 Reactor Vessel Internals' Stainless Steel Plates, Forgings, Welds, and Bolting Program.

As described in the ANO-2 LRA, the Reactor Vessel Internals Program is a new program to be developed prior to entering the period of extended operation. Consistent with all programs credited for license renewal at ANO-2, the Reactor Vessel Internals Program, once developed, is available on site for NRC review. In addition, as requested by the NRC Staff, a description of the program will be submitted to the NRC for review and approval. The submittal date will be at least 24 months prior to the period of extended operation.

Attachment 2

2CAN090402

List of Regulatory Commitments

List of Regulatory Commitments

The following table identifies those actions committed to by Entergy in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

COMMITMENT	TYPE (Check One)		SCHEDULED COMPLETION DATE (If Required)
	ONE-TIME ACTION	CONTINUING COMPLIANCE	
Although cracking due to fatigue of the charging pump block was not identified as a likely failure mechanism, the pump block will be periodically inspected for indications of cracking. Consistent with the clarification response on page 8 of correspondence dated July 22 2004 (2CAN070409), the PSPM Program will manage cracking of the charging pump plunger cap and block. Parameters monitored: During maintenance inspections, plunger caps and blocks are visually inspected for indications of cracking. Detection of aging effects: Inspections for wear or damage, including cracking, are performed on any parts removed and the pump cylinder bore during maintenance. Acceptance criteria: Indications of cracking results in additional non-destructive examination (such as dye penetrant tests) and replacement of the affected component if cracking is confirmed.		X	July 17, 2018

ANO-2 will implement a One-Time Inspection Program for the components subject to aging management review that were included for 10CFR54.4(a)(2) in the following systems. • Auxiliary building heating and ventilation • Auxiliary building sump • Drain collection header • Liquid radwaste management • Post accident sampling • Resin transfer • Regenerative waste • Spent resin The ANO-2 One-Time Inspection Program will be consistent with the program description in NUREG-1801 Vol. 2, XI.M32, One-Time Inspection. Adverse conditions identified during the inspections will be addressed as part of the ANO-2 Corrective Action Program. Corrective actions may include additional inspections, if warranted based on the inspection results.		X	Prior to July 17, 2018

The following description of the One-Time Inspection Program will be added to the ANO-2 SAR as Section A.2.1.34. **A.2.1.34 ONE-TIME INSPECTION** The One-Time Inspection Program confirms that the aging effects are being adequately managed for components in raw or untreated water. This program will perform destructive or nondestructive inspections on internal surfaces of a sample of components in the following systems. • Auxiliary building heating and ventilation • Auxiliary building sump • Drain collection header • Liquid radwaste management • Post accident sampling • Resin transfer • Regenerative waste • Spent resin The One-Time Inspection Program will be initiated prior to the period of extended operation.	X		Upon issuance of renewed license

Consistent with 10CFR54.21(c)(1)(iii), loss of tendon prestress will be adequately managed during the period of extended operation by continued implementation of tendon inspections required by ASME Code Section XI IWL. Relevant operating experience, including experience with prestressing systems described in NRC Information Notice (IN) 99-10, will be considered during inspections and data analysis. Prior to the period of extended operation, trend lines for ANO-2 tendon prestressing forces will be developed using regression analysis in accordance with guidance provided in NRC Information Notice (IN) 99-10. If future tendon examination data diverge from the expected trend, the discrepancy will be addressed in accordance with requirements of the Containment Inservice Inspection (ISI) Program (IWE/IWL) and the current licensing basis. Specifically, if prestressing force trend lines indicate that existing prestressing forces in the containment would go below the minimum required values (MRVs) prior to the next scheduled inspection (Reference 10CFR50.55a(b)(2)(ix)(B) or 10CFR50.55a(b)(2)(viii)(B)), then systematic retensioning of tendons, a reanalysis of the containment or a reanalysis of the post-tensioning system is warranted to ensure the design adequacy of containment.		X	July 17, 2018

ANO-2 SAR Section A.2.2.4 will be revised to read as follows. **A.2.2.4 CONCRETE CONTAINMENT TENDON PRESTRESS** The analysis of loss of prestress in the containment building post-tensioning system is a time-limited aging analysis. Loss of tendon prestress in the containment building post-tensioning system will be managed for license renewal in accordance with 10CFR54.21(c)(1)(iii), by the Containment ISI Program. This program, discussed in Section A.2.1.14, includes tendon surveillance testing. Prior to the period of extended operation, trend lines for ANO-2 tendon prestressing forces will be developed using regression analysis in accordance with guidance provided in NRC IN 99-10. If prestressing force trend lines indicate that existing prestressing forces in the containment would go below the minimum required values (MRVs) prior to the next scheduled inspection (Reference 10CFR50.55a(b)(2)(ix)(B) or 10CFR 50.55a(b)(2)(viii)(B)), then systematic retensioning of tendons, a reanalysis of the containment or a reanalysis of the post tensioning system is warranted to ensure the design adequacy of containment.	X		Upon issuance of renewed license

The following Section A.2.2.6.6 addressing the RCP motor flywheel will be added to the SAR Supplement (Appendix A). **A.2.2.6.6 RCP Motor Flywheel** The flaw growth analysis associated with the reactor coolant pump motor flywheel is conservatively treated as a time-limited aging analysis. The analysis addresses the growth of pre-existing cracks subjected to 4,000 reactor coolant pump motor startup or shutdown cycles, which exceeds by a factor of eight the number of RCP cycles projected through the period of extended operation. Therefore, the flaw growth analysis remains valid for the period of extended operation.	X		Upon issuance of renewed license
Consistent with all programs credited for license renewal at ANO-2, the Alloy-600 Program will be available on-site for NRC review. In addition, as requested by the NRC Staff, a description of the program will be submitted to the NRC for review and approval. The submittal date will be at least 24 months prior to the period of extended operation.	X		July 17, 2016

Consistent with all programs credited for license renewal at ANO-2, the Reactor Vessel Internals CASS Program, once developed, will be available on site for NRC review. In addition, as requested by the NRC Staff, a description of the program will be submitted to the NRC for review and approval. The submittal date will be at least 24 months prior to the period of extended operation.	X		July 17, 2016
Consistent with all programs credited for license renewal at ANO-2, the Reactor Vessel Internals Program, once developed, is available on site for NRC review. In addition, as requested by the NRC Staff, a description of the program will be submitted to the NRC for review and approval. The submittal date will be at least 24 months prior to the period of extended operation.	X		July 17, 2016