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AR 00557180 Report

Aff Fac:	Oyster Creek	**AR Type:**	CR	**Status:**	COMPLETE
Aff Unit:	NA	**Owed To:**	ACAPALL	**Due Date:**	08/24/2007
Aff System:	--			**Event Date:**	11/07/2006
CR Level/Class:	4/D			**Disc Date:**	11/07/2006
How Discovered:	H02			**Orig Date:**	11/13/2006
WR/PIMS AR:		**Component #:**			

Action Request Details

Subject: COMMITMENTS MADE FOR GL 87-05 ARE NOT IN THE RA DATABASE

Description:

Originator: KATHY BARNES Supv Contacted: J. Kandasamy

Condition Description:
Commitments were made as a result of the GL 87-05 as well as other correspondence, meetings, etc. concerning our Drywell Corrosion Monitoring and Water Intrusion mitigation plans. The correspondence covers the time period of 1986 through present. A check of the Lotus Notes database presently used for commitment tracking did not indicate any commitments have been made. Based on limited research an SER was issued with subsequent correspondence, which committed us to a corrosion monitoring activities and leakage monitoring activities for the Drywell. The correspondence was used to formulate what is thought to be the present commitments for leakage monitoring. That information was utilized as an input to the outage leakage monitoring activities to determine the steps necessary to meet the present commitments and the License Renewal commitments for leakage monitoring. The documents were annotated with reference to the correspondence for the present commitments and to Passport commitment tracking numbers for the License Renewal commitments.

Subsequent research determined other correspondence exists which indicated we initiated preventive maintenance to clear the sand bed drains periodically. There were no preventive maintenance activities prior to this outage to clear the sand bed drains. It is not known at this time whether this is a commitment by virtue of it being in our correspondence with the NRC. IR 547236 documents the existence of debris in the sand bed drains, when performing the first known formalized maintenance activity to inspect the drains. Although the debris did not affect the capability to monitor the leakage from the sand bed drains, there is a question of where did the debris came from and when should be the next time we inspect the drains, and on what frequency. An ACIT was issued to address these concerns. No frequency is presented in the previous correspondence found, but there may be other correspondence, which did make commitments to a frequency, or removed this activity. Without having a commitment tracking system for these historical commitments renders the site to potential repeat occurrences of missed commitments from a current license basis perspective.

Immediate actions taken:
License renewal assembled a partial list of documents retrieved from the correspondence database that had been assembled to support the License

C/3

Renewal Project. Correspondence was discovered relevant to the water intrusion measures including the monitoring of the sand bed drains. Regulatory Assurance was notified of the finding.

This IR was submitted.

Recommended Actions:
1. Perform a complete review of all correspondence relative to the GL 87-05, and the drywell corrosion monitoring and water intrusion mitigation plan for legitimate commitments. Review these commitments for confirmation of implementation. For commitments that are determined to no longer be appropriate, disposition those commitments in accordance with the corporate commitment management procedures.

Assure documents are annotated properly for commitments, which will be retained. Enter those commitments into the commitment tracking system with cross-references to the implementing documents for retrieval purposes. This is required to answer an existing question for the NRC Inspection 2006-13 Report, which is ongoing.

2. Considering the risks associated with missing commitments (examples being: failure to perform leakage monitoring for the sand bed drains, potentially failure to perform periodic clearing of the sand bed drains, etc.) evaluate the need to initiate efforts to retrieve historical commitments, and confirm formal implementation mechanisms exist for those items determined to be legitimate commitments, and that they are being tracked and annotated in accordance with corporate commitment tracking requirements. This would be a significant manpower effort and probably require outside support.

3. Develop and expand the correspondence data base similar to the one which was provided to regulatory assurance from the license renewal project for easy retrieval of the basis documents which provide an input to our Current License Basis (CLB). This would also be beneficial for those performing 50.59 evaluations, which rely on the determination of our CLB.

What activities, processes, or procedures were involved?
During 1R21, NRC Inspections of the drywell water intrusion activities prompted a more extensive search for related correspondence.

Why did the condition happen?
The age of OC has resulted in an enormous volume of regulatory correspondence that had not been reviewed in searching for prior commitments. Commitments were not tracked in a database for all teh years of OC operation. Changes of ownership and changes in definition of what constitutes a commitment has resulted in inadequate understanding of what this older correspondence requires.

What are the consequences?
Without having a commitment tracking system or proper disposition of these historical commitments renders the site to potential repeat occurrences of missed commitments from a current license basis perspective.

Were any procedural requirements impacted?
LS-AA-110 provides requirements for managing commitments in current regulatory correspondence. This issue report is related to historical commitments made by GPUN.

Were there any adverse physical conditions?
There was no PM established to periodically clear the sand bed drains of clogs.

List of knowledgeable individuals:
T.Quintenz, H.Ray, P.Tamburro, J.Huffnagel, J.Kandasamy, D.Helker

Repeat or similar condition?
Yes. There have been other recent examples of missed commitments from "old" correspondence that had not been captured in the OC commitment tracking database. IR 348545 (Tell-tale Drains - Poly bottles not having a PM to monitor DW leakage)

Operable Basis:
N/A

Reportable Basis:
N/A

SOC Reviewed by: 11/16/2006 05:52:04 CST
SOC Comments:
11/15/06 tas Followup Reg Assurance

11.16.06 tas ACITs created for recomended actions. Close to actions created.

Trend Codes

TC1	TC2	TC3	Proc	Org	Rank
PWP	WPWI	5EL	LS07	RA	P
HP	T	*	LS07	RA	
F-RA	S-PR	*	LS07	RA	

Assignments

Assign #:	01	**Assigned To:**		**Status:**	COMPLETE
Aff Fac:	Oyster Creek	**Prim Grp:**	ACAPALL	**Due Date:**	11/18/2006
Assign Type:	TRKG	**Sec Grp:**		**Orig Due Date:**	µµ/µµ/µµµµ
Priority:					
Schedule Ref:					
Unit Condition:					
Subject/Description:	COMMITMENTS MADE FOR GL 87-05 ARE NOT IN THE RA DATABASE				

Assign #:	02	**Assigned To:**	U999LRL	**Status:**	COMPLETE
Aff Fac:	Oyster Creek	**Prim Grp:**	A5301RAPR	**Due Date:**	06/15/2007
Assign Type:	ACIT	**Sec Grp:**		**Orig Due Date:**	12/20/2006
Priority:					
Schedule Ref:					
Unit Condition:					

Perform a complete review of all correspondence relative to the GL 87-05, and the drywell corrosion monitoring and water intrusion mitigation plan for legitimate commitments. Review these commitm ents for confirmation of implementation. For commitments that are determine d to no longer be appropriate, disposition those

Subject/Description:	commitments in accorda nce with the corporate commitment management procedures. Assure documents are annotated properly for commitmen ts, which will be retained. Enter those commitments into the commitment tracking system with cross-references to the implementing documents for re trieval purposes. This is required to answer an existing question for t he NRC Inspection 2006-13 Report, which is ongoing.

Assign #:	03	**Assigned To:**	U999LRL	**Status:**	COMPLETE
Aff Fac:	Oyster Creek	**Prim Grp:**	A5301RAPR	**Due Date:**	07/20/2007
Assign Type:	ACIT	**Sec Grp:**		**Orig Due Date:**	12/20/2006
Priority:					
Schedule Ref:					
Unit Condition:					
Subject/Description:	Considering the risks associated with missing commitments (examples being: failure to perform leakage monitoring for the sa nd bed drains, potentially failure to perform periodic clearing of the sand bed drains, etc.) evaluate the need to initiate efforts to retrieve historical commitments, and confirm formal implementation mechanis ms exist for those items determined to be legitimate commitments, and that they are being tracked and annotated in accordance with corporate comm itment tracking requirements. This would be a significant manpower effo rt and probably require outside support.				

Assign #:	04	**Assigned To:**	DUPOSG	**Status:**	COMPLETE
Aff Fac:	Oyster Creek	**Prim Grp:**	A5301RAPR	**Due Date:**	08/24/2007
Assign Type:	ACIT	**Sec Grp:**		**Orig Due Date:**	02/08/2007
Priority:					
Schedule Ref:					
Unit Condition:					
Subject/Description:	Develop and expand the correspondence data base similar t o the one which was provided to regulatory assurance from the license renewal project for easy retrieval of the basis documents wh ich provide an input to our Current License Basis (CLB). This would also be beneficial for those performing 50.59 evaluations, which rely on th e determination of our CLB.				

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Assignment Report

Assign #: 02 **AR #: 00557180**

Aff Fac:	Oyster Creek	**Assign Type:**	ACIT	**Status:**	COMPLETE
Priority:		**Assigned To:**	U999LRL	**Due Date:**	06/15/2007
Schedule Ref:		**Prim Grp:**	A5301RAPR	**Original Date:**	12/20/2006
Unit Condition:		**Sec Grp:**			

Assignment Request

Subject/Description: Perform a complete review of all correspondence relative to the GL 87-05, and the drywell corrosion monitoring and water intrusion mitigation plan for legitimate commitments. Review these commitments for confirmation of implementation. For commitments that are determined to no longer be appropriate, disposition those commitments in accordance with the corporate commitment management procedures. Assure documents are annotated properly for commitments, which will be retained. Enter those commitments into the commitment tracking system with cross-references to the implementing documents for retrieval purposes. This is required to answer an existing question for the NRC Inspection 2006-13 Report, which is ongoing.

Assignment Completion

In Progress Notes: A review of correspondence relative to the GL 87-05, and the drywell corrosion monitoring and water intrusion mitigation plan for was conducted. From this review it was determined that the current commitment for monitoring drywall corrosion is a the 12/15/95 letter where GPUN made commitments regarding the actions to be taken if a leak is identified coming from the drains in the DW sand bed region. The following commitments concerning drywell leakage were made in the GPU letter to the NRC dated 12/15/95:

1. Notify OC NRC Resident Inspector of discovery of leakage.
2. The source of the leakage will be investigated and appropriate corrective actions taken.
3. An evaluation of the impact of the leakage on drywell structural integrity will be performed to ensure sufficient structural margin is maintained for operation to the next scheduled drywell inspection.
4. In the unexpected event that the evaluation of the impact of the leakage on drywell structural integrity does not ensure sufficient structural margin will be maintained for operation to the next scheduled outage, an additional drywell inspection will be performed within approximately 3 months after discovery of water leakage.

PMs had been created for tracking and continuity of assurance in meeting the commitment. Drywell corrosion related PMs, PM 18701M through 18716M were performed during 1R21.

IR 485800-04 is tracking this commitment. Additional commitments are being made as part of the licensing renewal project. Inspection requirements will be part of ASME Section XI Program at OC. This is tracked in IR 330592 tasks 57, 7 and 27-06. The following information is from those IRs.

Oyster Creek License Renewal Application (OCLRA) Appendix A.5 establishes the commitment for the Aging Management Program (AMP) for ASME Section XI, Subsection IWE. OCLRA Appendices A and B provide further details concerning this commitment. The Program Basis Document for this AMP

supplements this discussion. Each of these documents is provided below.

The following is extracted from Appendix A.5 of the OCLRA, as supplemented through RAIs and other correspondence, through 02-15-07 (The latest version of Appendix A, Table A.5 and Appendix A, Subsection A.1.27 should be consulted to confirm):

Item Number: 27) ASME Section XI, Subsection IWE

Commitment: Existing program is credited.

The program will be enhanced to include:

1. Ultrasonic Testing (UT) thickness measurements of the drywell shell in the sand bed region will be performed on a frequency not to exceed 10 years, except that the initial inspection will occur prior to the period of extended operation and the subsequent inspection will occur two refueling outages after the initial inspection, to provide early confirmation that corrosion has been arrested. The UT measurements will be taken from the inside of the drywell at the same locations where UT measurements were performed in 1996. The inspection results will be compared to previous results. Statistically significant deviations from the 1992, 1994, and 1996 UT results will result in corrective actions that include the following:

? Perform additional UT measurements to confirm the readings.
? Notify NRC within 48 hours of confirmation of the identified condition.
? Conduct visual inspection of the external surface in the sand bed region in areas where any unexpected corrosion may be detected.
? Perform engineering evaluation to assess the extent of condition and to determine if additional inspections are required to assure drywell integrity.
? Perform operability determination and justification for operation until next inspection.
These actions will be completed prior to restart from the associated outage.

Note: The frequency for the inspections described in commitment 1 (above) has been changed to every other refueling outage, in accordance with commitment 21 of the IWE Inspection Program.

2. Consistent with current practice, a strippable coating will be applied to the reactor cavity liner to prevent water intrusion into the gap between the drywell shield wall and the drywell shell during periods when the reactor cavity is flooded.

3. The reactor cavity seal leakage trough drains and the drywell sand bed region drains will be monitored for leakage.
? The sand bed region drains will be monitored daily during refueling outages. If leakage is detected, procedures will be in place to determine the source of leakage and investigate and address the impact of leakage on the drywell shell, including verification of the condition of the drywell shell coating and moisture barrier (seal) in the sand bed region and performance of UT examinations of the shell in the upper regions. UTs will also be performed on any areas in the sand bed region where visual inspection indicates the coating is damaged and corrosion has occurred. UT results will be evaluated per the existing program. Any degraded coating or moisture barrier will be repaired. These actions will be completed prior to exiting the associated outage.
? The sand bed region drains will be monitored quarterly during the plant operating cycle. If leakage is identified, the source of water will be investigated, corrective actions taken or planned as appropriate. In addition, if leakage is detected, the following items will be performed

during the next refueling outage:
? Inspection of the drywell shell coating and moisture barrier (seal) in the affected bays in the sand bed region
? UTs of the upper drywell region consistent with the existing program
? UTs will be performed on any areas in the sand bed region where visual inspection indicates the coating is damaged and corrosion has occurred
? UT results will be evaluated per the existing program
Any degraded coating or moisture barrier will be repaired

4. Prior to the period of extended operation, AmerGen will perform additional visual inspections of the epoxy coating that was applied to the exterior surface of the Drywell shell in the sand bed region, such that the coated surfaces in all 10 Drywell bays will have been inspected at least once. In addition, the Inservice Inspection (ISI) Program will be enhanced to require inspection of 100% of the epoxy coating every 10 years during the period of extended operation. These inspections will be performed in accordance with ASME Section XI, Subsection IWE. Performance of the inspections will be staggered such that at least three bays will be examined every other refueling outage.
Note: The scope and frequency for the inspections described in commitment 4 (above) has been changed to all 10 bays every other refueling outage, in accordance with commitment 21 of the IWE Inspection Program.

5. A visual examination of the drywell shell in the drywell floor inspection access trenches will be performed to assure that the drywell shell remains intact. If degradation is identified, the drywell shell condition will be evaluated and corrective actions taken as necessary. In addition, one-time ultrasonic testing (UT) measurements will be taken to confirm the adequacy of the shell thickness in these areas. Beyond these examinations, these surfaces will either be inspected as part of the scope of the ASME Section XI, Subsection IWE inspection program or they will be restored to the original design configuration using concrete or other suitable material to prevent moisture collection in these areas.
Note: Commitment 5 (above) is supplemented by commitments 16 and 20 of the IWE Inspection Program.

6. The coating inside the torus will be visually inspected in accordance with ASME Section XI, Subsection IWE, per the Protective Coatings Program. The scope of each of these inspections will include the wetted area of all 20 torus bays. Should the current torus coating system be replaced, the inspection frequency and scope will, as a minimum, meet the requirements of ASME Section XI, Subsection IWE.

7. AmerGen will conduct UT thickness measurements in the upper regions of the drywell shell every other refueling outage at the same locations as are currently measured.

8. The IWE Program will be credited for managing corrosion in the Torus Vent Line and Vent Header exposed to an Indoor Air (External) environment.

9. During the next UT inspections to be performed on the drywell sand bed region (reference AmerGen 4/4/06 letter to NRC), an attempt will be made to locate and evaluate some of the locally thinned areas identified in the 1992 inspection from the exterior of the drywell. This testing will be performed using the latest UT methodology with existing shell paint in place. The UT thickness measurements for these locally thinned areas may be taken from either inside the drywell or outside the drywell (sand bed region) to limit radiation dose to as low as reasonably achievable (ALARA).
Note: Commitment 9 (above) is supplemented by commitments 14 and 21 of the IWE Inspection Program.

10. AmerGen will conduct UT thickness measurements on the 0.770 inch thick plate at the junction between the 0.770 inch thick and 1.154 inch thick plates, in the lower portion of the spherical region of the drywell shell. These measurements will be taken at four locations using the 6"x6" grid. The specific locations to be selected will consider previous operational experience (i.e., will be biased toward areas that have had corrosion or leakage). These measurements will be performed prior to the period of extended operation and repeated at the second refueling outage after the initial inspection, at the same location. If corrosion in this transition area is greater than areas monitored in the upper drywell, UT inspections in the transition area will be performed on the same frequency as those in the upper drywell (every other refueling outage).

11. AmerGen will conduct UT thickness measurements in the drywell shell "knuckle" area, on the 0.640 inch thick plate above the weld to the 2.625 inch thick plate. These measurements will be taken at four locations using the 6"x6" grid. The specific locations to be selected will consider previous operational experience (i.e., will be biased toward areas that have had corrosion or leakage). These measurements will be performed prior to the period of extended operation and repeated at the second refueling outage after the initial inspection, at the same location. If corrosion in this transition area is greater than areas monitored in the upper drywell, UT inspections in the transition area will be performed on the same frequency as those in the upper drywell (every other refueling outage).

12. When the sand bed region drywell shell coating inspection is performed (item 27, commitments 4 and 21), the seal at the junction between the sand bed region concrete and the embedded drywell shell will be inspected per the Protective Coatings Program.
Note: The frequency for the inspections described in commitment 12 (above) has been changed to every other refueling outage, in accordance with commitment 21 of the IWE Inspection Program.

13. The reactor cavity concrete trough drain will be verified to be clear from blockage once per refueling cycle. Any identified issues will be addressed via the corrective action process.

14. UT thickness measurements will be taken from outside the drywell in the sandbed region during the 2008 refueling outage on the locally thinned areas examined during the October 2006 refueling outage. The locally thinned areas are distributed both vertically and around the perimeter of the drywell in all ten bays such that potential corrosion of the drywell shell would be detected.

Note: The frequency for the inspections described in commitment 14 (above) has been changed to every other refueling outage, in accordance with commitment 21 of the IWE Inspection Program.

15. Starting in 2010, drywell shell UT thickness measurements will be taken from outside the drywell in the sandbed region in two bays per outage, such that inspections will be performed in all 10 bays within a 10-year period. The two bays with the most locally thinned areas (bay #1 and bay #13) will be inspected in 2010. If the UT examinations yield unacceptable results, then the locally thinned areas in all 10 bays will be inspected in the refueling outage that the unacceptable results are identified.
Note: The scope and frequency for the inspections described in commitment 15 (above) have been changed to all 10 bays every other refueling outage, in accordance with commitment 21 of the IWE Inspection Program.

16. Perform visual inspection of the drywell shell inside the trenches

in bay #5 and bay #17 and take UT measurements inside these trenches in 2008 at the same locations examined in 2006. Repeat (both the UT and visual) inspections at refueling outages during the period of extended operation until the trenches are restored to the original design configuration using concrete or other suitable material to prevent moisture collection in these areas.
Note: Commitment 16 (above) is supplemented by commitment 20 of the IWE Inspection Program.

17. Perform visual inspection of the moisture barrier between the drywell shell and the concrete floor/curb, installed inside the drywell during the October 2006 refueling outage, in accordance with ASME Section XI, Subsection IWE during the period of extended operation.

18. AmerGen will perform a 3-D finite element structural analysis of the primary containment drywell shell using modern methods and current drywell shell thickness data to better quantify the margin that exists above the Code required minimum for buckling. The analysis will include sensitivity studies to determine the degree to which uncertainties in the size of thinned areas affect Code margins. If the analysis determines that the drywell shell does not meet required thickness values, the NRC will be notified in accordance with 10 CFR 50 requirements.

19. AmerGen will perform an engineering study to investigate cost-effective replacement or repair options to eliminate or reduce reactor cavity liner leakage.

20. AmerGen is committed to perform visual and UT inspections of the drywell shell in the inspection trenches in drywell bays 5 and 17 during the Oyster Creek 2008 refueling outage (see commitment 16 of AmerGen's IWE Program (item 27), made in its letter 2130-06-20426). AmerGen will extend this commitment and also perform these inspections during the 2010 refueling outage. In addition, AmerGen will monitor the two trenches for the presence of water during refueling outages. Visual and UT inspections of the shell within the trenches will continue to be performed until no water is identified in the trenches for two consecutive refueling outages, at which time the trenches will be restored to their original design configuration (e.g., refilled with concrete) to minimize the risk of future corrosion.

21. Perform the full scope of drywell sand bed region inspections prior to the period of extended operation and then every other refueling outage thereafter. The full scope is defined as:
? UT measurements from inside the drywell (commitment 1)
? Visual inspections of the drywell external shell epoxy coating in all 10 bays (commitment 4)
? Inspection of the seal at the junction between the sand bed region concrete and the embedded drywell shell (commitment 12)
? UT measurements at the external locally thinned areas inspected in 2006 (commitments 9 and 14)

Note: Refer to AmerGen letter 2130-07-20464 for the full update to the A.5 commitment list for the IWE program, item #27 of the LRA commitment list.

UFSAR Supplement Location (LRA App. A): A.1.27

Enhancement or Implementation Schedule: Various - refer to the latest version of LRA Appendix A, Section A.5 Commitment list (or the updated FSAR after it is updated) for details.

Source: Section B.1.27

The following is extracted from Appendix A of the OCLRA:

The ASME Section XI, Subsection IWE, aging management program is an existing program based on ASME Code and complies with the provisions of 10 CFR 50.55a. The program consists of periodic inspection of primary containment surfaces and components, including integral attachments, and containment vacuum breakers system piping and components for loss of material, loss of sealing, and loss of preload.

Examination methods include visual and volumetric testing as required by the Code. Observed conditions that have the potential for impacting an intended function are evaluated for acceptability in accordance with ASME requirements or corrected in accordance with corrective action process. Procurement controls and installation practices, defined in plant procedures, ensure that only approved lubricants and tension or torque are applied.

The following is extracted from Appendix B of the OCLRA:

Program Description

The ASME Section XI, Subsection IWE, aging management program provides for inspection of primary containment components and the containment vacuum breakers system piping and components. It is implemented through station plans and procedures and covers steel containment shells and their integral attachments; containment hatches and airlocks: seals and gaskets; containment vacuum breakers system piping and components; and pressure retaining bolting. The program includes visual examination and limited surface or volumetric examination, when augmented examination is required, to detect loss of material. The program also provides for managing loss of sealing for seals and gaskets, and loss of preload for pressure retaining bolting. Procurement controls and installation practices, defined in plant procedures, ensure that only approved lubricants and tension or torque are applied. The Oyster Creek program complies with Subsection IWE for steel containments (Class MC) of ASME Section XI, 1992 Edition including 1992 Addenda, in accordance with the provisions of 10 CFR 50.55a.

NUREG 1801 Consistency

The ASME Section XI, Subsection IWE aging management program is consistent with the ten elements of aging management program XI.S1, "ASME Section XI, Subsection IWE," specified in NUREG 1801 with the following exception:

Exceptions to NUREG 1801

NUREG 1801 evaluation is based on ASME Section XI, 2001 Edition including 2002 and 2003 Addenda. The current Oyster Creek ASME Section XI, Subsection IWE, program plan for the First Ten-Year inspection interval effective from September 9, 1998, through September 9, 2008, approved per 10CFR50.55a, is based on ASME Section XI, 1992 Edition including 1992 addenda. The next 120-month inspection interval for Oyster Creek will incorporate the requirements specified in the version of the ASME Code incorporated into 10 CFR 50.55a twelve months before the start of the inspection interval.

Enhancements

None.

Operating Experience

ASME Section XI, Subsection IWE, as described in Oyster Creek First10-Year Containment (IWE) Inservice Inspection Program Plan and Basis is effective September 9, 1998, to September 9, 2008. Baseline inspection of containment surfaces was completed in 2000 and a second inspection was completed in 2004. The 2004 inspection identified two recordable conditions, a loose locknut was identified on a spare drywell penetration and a weld rod was found stuck to the underside of the drywell head. Engineering evaluation concluded the stuck weld rod has no adverse impact on drywell head structural integrity and the loose locknut did not affect the seal of the containment penetration.

The upper region of drywell shell has experienced loss of material, due to corrosion, as result of water leakage into the gap between the containment and the reactor building in the 1980's. As a result the area is subject to augmented examinations as required by ASME Section XI, Subsection IWE. The examination is by ultrasonic (UT) thickness measurements. UT measurements taken in 2004 showed that the drywell shell thickness meets ASME criteria and that the rate of corrosion is in a declining trend. Engineering evaluation of the UT results also concluded that the containment drywell, considering the current corrosion rate, is capable of performing its intended function through the period of extended operation. Further discussion is provided in Section 4.7.2, "Drywell Corrosion" TLAA evaluation.

Similarly the sand bed region also experienced loss of material due to corrosion. Corrosion was attributed to the presence of oxygenated wet sand and exacerbated by the presence of chloride and sulfate in the sand bed region. As a corrective measure, the sand was removed and a protective coating was applied to the shell to mitigate further corrosion. Subsequent inspections confirmed that corrosion of the shell has been arrested. The coating is monitored periodically under the Protective Coating Monitoring and Maintenance Program, B.1.33. Refer to program B.1.33 for additional details.

The suppression chamber (Torus) and vent system were originally coated with Carboline Carbo-Zinc 11 paint. The coating is inspected every outage and repaired, as required, to protect the torus shell and the vent system from corrosion. Refer to program B.1.33 for additional details.

Operating experience review concluded that ASME Section XI, Subsection IWE, is effective for managing aging effects of primary containment surfaces.

Conclusion

The ASME Section XI, Subsection IWE, aging management program ensures that loss of material, loss of sealing, and loss of preload of primary containment components and the containment vacuum breakers system piping and components are adequately managed so that there is a reasonable assurance their intended function will be maintained consistent with the current licensing basis during the period of extended operation.

Completion Notes: See in prog notes