John Richmond

From: John Richmond , RI
Sent: Wednesday, October 22, 2008 6:42 PM
To: Michael Modes
Subject: Draft OC Insp Plan
Attachments: OC LRI Insp Plan_rev-2.doc

Importance: High

Please review - all comments are welcome!

This will be the basis for Darrell's briefing, on Friday - now moved to 2PM

G/9

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Oyster Creek
License Renewal Outage Commitments
Inspection Plan

I PURPOSE

This plan specifies licensee outage activities to be inspected in order to verify license renewal (LR) commitments and proposed conditions of license are properly implemented. In addition, this plan specifies licensee outage activities to be inspected in order to verify the structural integrity of the primary containment. The plan also provides guidance for inspection scheduling, inspection activities, and resources.

II INSPECTION OBJECTIVES

(1) Verify "outage-only" SER proposed license conditions are adequately implemented.

(2) Verify selected outage related SER LR commitments are adequately implemented.

(3) Assess AmerGen's actions to evaluate structural integrity of the primary containment.

(4) Verify revisions and changes to outage related LR commitments, made after the SER was issued, were performed in accordance with AmerGen's commitment management program.

(5) Verify that any changes to the current licensing basis (CLB), that materially affects the LR application, pursuant to § 54.21(b), were reviewed and evaluated in accordance with § 54, for outage related commitments.

III INSPECTION REQUIREMENTS

Assess AmerGen's actions to evaluate (1) structural integrity of the primary containment, (2) any actual or potential corrosion rates are projected through the next operating cycle, and (3) significance of any water in the two floor trenches located inside the drywell.

Inspect a sample of outage activities, including modifications, maintenance, testing, and inspections, that implement aging management programs (AMPs) and time-limited aging analyses (TLAA) from existing, enhanced, and new programs. Assess AmerGen's implementing activities and examine records, to independently evaluate the effectiveness of AmerGen's aging management activities and programs. For the selected outage related inspection samples, verify that:

(1) AmerGen completed the necessary actions to comply with the SER proposed license conditions, and implemented the AMPs and TLAA in the SER.

(2) AmerGen followed the guidance in NEI 99-04 for LR commitment changes, including the elimination of commitments, and properly evaluated and reported, where necessary, changes to commitments which will be listed in the UFSAR, in accordance with § 50.59.

(3) AmerGen identified and evaluated CLB changes and revised AMPs, in accordance with § 54.21(b).

IV INSPECTION SAMPLES

Outage-only SER Proposed License Conditions to be Inspected

4th Proposed License Condition: Perform full scope inspections of the drywell sand bed region every other refueling outage. This will be verified by completion of inspection samples for Commitment 27, listed below.

5th Proposed License Condition: Monitor drywell trenches every refueling outage to identify and eliminate the sources of water and receive NRC approval prior to restoring the trenches to their original design configuration. This will be verified by completion of inspection samples for Commitment 27, listed below.

Outage Related LR Commitment Items to be Inspected

SER Commitment 24, One-Time Inspection Program
SER Commitment 27, ASME IWE, Containment Metallic Liner Inservice Inspection
SER Commitment 31, Structures Monitoring Program
SER Commitment 32, RG 1.127, Inspection of Water-Control Structures
SER Commitment 33, Protective Coating Monitoring and Maintenance Program
SER Commitment 34, Non-EQ Electrical Cables and Connections
SER Commitment 36, Non-EQ Inaccessible Medium Voltage Cables
SER Commitment 41, Periodic Inspection Program
SER Commitment 44, Metal Fatigue of Reactor Coolant Pressure Boundary
SER Commitment 63, Buried Piping

V INSPECTOR ASSIGNMENTS

Tim O'Hara

1. Inside the drywell at sand bed region elevations, inspect licensee's drywell shell thickness (UT) and Service Level I Coating verifications (not 100%). Independently assess shell and coating conditions, and compare to licensee inspection records.

2. Inside the drywell in the 2 floor trenches, inspect licensee's drywell shell thickness (UT) and Service Level I Coating verifications. Independently assess shell and coating conditions, and water accumulation, if any. Independently assess caulk seal at the trench edge where the concrete meets the shell. Compare observations to licensee inspection records.

3. Inside the drywell, inspect licensee's visual inspection of moisture barrier seal between drywell shell and concrete floor curb inside drywell. Independently assess seal conditions, and compare to licensee inspection records.

4. Outside the drywell, in the sand bed bays, inspect licensee's shell thickness (UT) and Service Level II Coating verifications (not 100%). Independently assess shell and coating conditions, and compare to licensee inspection records. If schedule permits, independently inspect or observe licensee activities in Bay No. 1, 11, and 13.

5. Outside the drywell, in the sand bed bays, inspect licensee's visual inspection of moisture barrier seal between the sand bed concrete and the embedded drywell shell. Independently assess seal conditions. Independently assess overall conditions in the sand bed bays. Compare observations to licensee inspection records.

6. Review 100% of the NDE data and inspection records (UT & VT) for the above items (schedule time permitting). Compare UT data against licensee established acceptance criteria.

Michael Modes

1. Backup for Tim's inspection items (especially item 6, UT data review).

2. Inside the upper drywell at 23' (transition from 0.770" plate to 1.154" plate), 51', 60', 71' (knuckle region, transition from 2.625" plate to 0.640" plate), and 87' elevations, inspect licensee's drywell shell thickness (UT) and Service Level I Coating verifications (not 100%). Choose elevations and samples based, in part, on schedule, availability, and ALARA. Independently assess shell and coating conditions, and compare to licensee inspection records.

> At the 23' and 71' elevations, 4 locations (6"x6" grids) at each elevation will be UT inspected. At each elevation, 2 of the 4 locations are new (no pre-existing data). At least one inspection sample should be from either the 23' or 71' elevation.

3. Review NDE data and inspection records (UT & VT) for item (2) above (100% data review is desired). Compare UT data against licensee established acceptance criteria.

4. Drywell floor trench in Bay 5 will have approximately 6" of grout removed for additional UT & VT inspections. Verify licensee's inspection results, and verify grout is reinstalled.

5. For the Fatigue Monitoring Program, verify whether any fatigue program inputs have changed base line calculations; verify whether the list of high cumulative usage factor (CUF) components changed. If locations on vulnerable components have changed, that may require a visual inspection or review of the component. Perform direct inspection as necessary.

6. For the Isolation Condenser, inspect licensee's One-Time Inspection of two stainless steel pipe sections in stagnant or low flow areas in the Isolation Condenser System, to verify no stress corrosion cracking. [this item may already have been performed]

7. For the Isolation Condenser, inspect licensee's One-Time Inspection UT of the "B" Isolation Condenser shell below the waterline, to verify no pitting corrosion and confirm effectiveness of Water Chemistry Program.

8. Select at least one other One-Time Inspection item as an inspection sample, based on schedule, availability, and ALARA.

9. Select at least two Periodic Inspection Program items as an inspection sample, based on schedule, availability, and ALARA. An emergency service water piping expansion joint should be a higher priority, in this AMP category.

John Richmond

1. Inspect at least one (preferably three) sand bed bay, not inspected by Tim. Independently assess shell and coating conditions, and compare to licensee inspection records. If schedule permits, Bay No. 1, 11, and 13 are the highest priority.

2. Review the four engineering evaluations of drywell shell thickness verifications, and compare to licensee established acceptance criteria. Verify predicted corrosion rates will not result in exceeding minimum thickness values during the next operating cycle.

~~TO BE WITHHELD FOR EXEMPTION 5~~

VI INSPECTION LOGISTICS

Inspection Personnel
John Richmond (Lead)
Michael Modes
Tim O'Hara
Glenn Meyer (training)

Inspection Schedule

Site specific training and bag-man trip	Oct 2
In-office Prep	Oct 14 - 24
On-site Inspection	Oct 27 to Nov 6
Entrance Meeting:	Monday, Oct 27 at 10 AM
Exit Meeting:	Thursday, Nov 6 at 10 AM

HRMS Information
Each inspector should track his hours charged to the inspection.

Inspection Report Number
05000219/2008007

Task Codes
COM (Briefing Preparation & Attendance)
LRP (Preparation & Documentation)
LRT (Travel Time)
LI - 71003 (Direct Inspection)

Inspection Report Documentation
Feeders are to be written in MS Word; format specifics to be provided later.

Weekend and Daily Over Time Authorization
R. Conte has approved weekend & daily OT, as needed to support outage inspection schedule.

3. Verify reactor cavity strippable coating was applied prior to cavity flood-up (records and video review).

4. Verify reactor cavity concrete trough drain line is not blocked (camera video record).

5. Verify by records review and direct observation, that daily checks are performed to quantify and monitor reactor cavity seal leakage, when the cavity is flooded.

6. Verify by records review and direct observation, that daily checks are performed to identify any water leakage from the five sand bed region drain lines.

7. Inspect at least one electrical test of an inaccessible medium voltage cable.

8. Inside the drywell, verify licensee visually inspects a representative sample of accessible cables and connections located in adverse localized environments, for indications of accelerated insulation aging. Independently assess cable conditions, and compare to licensee inspection records. If schedule conflicts prevent drywell inspection, then inspect in the trunion room.

9. Verify new ESW piping is tied-in and placed in-service in place of existing old piping.

10. Verify licensee's structural monitoring inspection of intake structure for components submerged in salt water. Review video inspection records of ESW/SW piping & components located under the Deck. Independently assess observable conditions, and compare to licensee inspection records.

Attachment 1 - Scheduling & Planning Details

Drywell Shell Thickness Verifications

27 Oct - General D/W Access

Lower Drywell Shell Internal UT (at Sand Bed Region elevations)
19 Locations inside drywell [IS-328227-004, 3.2.2]
7x7 arrays over a 6"x6" area, and 1x7 arrays, on 1" increments
29 Oct Day Shift, R2096031 [date confirmed by NDE]
Commitment 27, Item (1 & 21)

Lower Drywell Shell External UT (in Sand Bed Bays)
106 UT readings, in the 10 bays (2-shift, 24-hr activities) [IS-328227-004, 3.2.3]
Access through 20" manway (tunnel)
Commitment 27, Item (9, 14, & 21)

Bay 1	28 Oct	[critical bay, based on previous inspection]
Bay 3	28 Oct	
Bay 5	27 Oct	
Bay 7	29 Oct	
Bay 9	28 Oct	
Bay 11	28 Oct	[critical bay, based on previous inspection]
Bay 13	28 Oct	[critical bay, based on previous inspection]
Bay 15	28 Oct	
Bay 17	28 Oct	
Bay 19	28 Oct	

Upper Drywell Shell UT at Elev 71' (knuckle region)
Transition from 2.625" plate to 0.640" plate [IS-328227-004, 3.2.8]
4 locations using a dynamic scan of a 6"x6" area
1 Nov, R2096037
Commitment 27, Item (11)

Lower Drywell Shell UT at Elev 23' (bottom to middle spherical plates)
Transition from 0.770" plate to 1.154" plate [IS-328227-004, 3.2.7]
4 locations using a dynamic scan of a 6"x6" area
1 Nov, (R2096037 ??)
Commitment 27, Item (10)

Upper Drywell Shell UT at Various Elevations
9 locations using a 7x7 array, at elev. 50', 51', 60', and 87' [IS-328227-004, 3.2.1]
1 Nov, (R2096037 ??)
Commitment 27, Item (7)

Drywell Floor Inspection Access Trenches
UT & VT in Bay 5 & Bay 17 Trenches [IS-328227-004, 3.2.6]
Remove & reinstall lower 6" of grout at bottom of Bay 5 trench
Inspect caulk sealant (trench edge where concrete meets shell)
Verify no water accumulation
29 Oct, R2117387
Commitment 27, Item (5, 16, & 20)

Drywell Shell Leakage Verifications

Cavity Strippable Coating
prior to flood-up
27 Oct, R2098683
Commitment 27, Item (2)

Rx Cavity Concrete Trough Drain
Camera Inspection of Rx cavity trough drain line for blockage
only 1 drain line, goes to RW drain on Elev 70'
29Oct, R2095857
Commitment 27, Item (13)

Rx Cavity Seal Leakage Trough Drains
Daily leakage check when cavity is flooded
Acceptance criteria < 12 gpm
1 drain line, goes to RW drain on Elev 70'
No leakage detection instrumentation
27 Oct, R2102695
Commitment 27, Item (3)

Sand Bed Region Drains (5 drain lines)
Daily leakage check
27 Oct, R2102695
Commitment 27, Item (3)

Moisture Barrier Seal between Sand Bed Region Concrete and Embedded Drywell Shell
Inspect seal at junction between concrete and shell [IS-328227-004, 3.2.4.1.4]
see sandbed dates
Commitment 27, Item (3, 12, & 21)

Moisture Barrier between Drywell Shell and Concrete Floor Curb inside Drywell
Inspect moisture barrier between curb and shell
29-30 Oct, R2097321
Commitment 27, Item (17)

Drywell Shell Coating Verifications

Drywell Interior Service Level I Coating
Inspect shell coating inside drywell
28 Oct, R2096685
Commitment 33, Item (1)

Drywell Exterior Service Level II Coating in Sand Bed Bays
VT epoxy coating in each bay (2-shift, 24-hr activities) [IS-328227-004, 3.2.4]
see sandbed dates
Commitment 27, Item (4 & 21)
Commitment 33

Electrical Cable Inspections

Feeder Cable to Auxiliary Transformer (Bank 4)
Inaccessible Medium Voltage Cable
Perform power factor test of 4 kV transformer feeder cable
30 Oct, R2026131
Commitment 36

Feeder Cable to Startup Transformer (Bank 6)
Inaccessible Medium Voltage Cable
Power factor test of 4 kV transformer feeder cable
4 Nov, R2033700
Commitment 36

Feeder Cable to P-37-1
Inaccessible Medium Voltage Cable
Hi-Pot feeder cable
28 Oct, R2054006
Commitment 36

Feeder Cable to P-37-5
Inaccessible Medium Voltage Cable
Hi-Pot feeder cable
?? Schedule Date, (R2059713 ??)
Commitment 36

Cable Inspection in Trunion Room
Visually inspect a representative sample of accessible cables and connections located in adverse localized environments, for indications of accelerated insulation aging
28 Oct, R2122597
Commitment 34

Cable Inspection in Drywell
Visually inspect a representative sample of accessible cables and connections located in adverse localized environments, for indications of accelerated insulation aging
28 Oct, R2122597
Commitment 34

Non-drywell ISI & NDE Inspections

Isolation Condenser
One-time Inspection UT of "B" Isolation Condenser shell below the waterline, to verify no pitting corrosion and confirm effectiveness of Water Chemistry Program.
31 Oct - coatings inspection with UT
Commitment 24, Item (2)

Isolation Condenser
One-time Inspection of two stainless steel pipe sections in stagnant or low flow area in the Isolation Condenser System, to verify no stress corrosion cracking.
A2184119 (AR/Library)
?? Schedule Date **<<< this item may already have been performed in 2004**
Commitment 24, Item (8)

Open Cycle Cooling & Buried Pipe Inspections

ESW Expansion Joint
Periodic inspection
27 Oct, R2081668
Commitment 41

ESW Buried Piping
Replace previously un-replaced buried ESW piping
New pipe already installed, needs to be connected in-place of existing old pipe
5 Nov, C2017279 (date for new piping tie-in)
Commitment 63

ESW Intake Structure
Periodic inspection of components submerged in salt water
Structures Monitoring Program, inspect ESW/SW piping & components located under the Deck
ROV video of piping and coating
28-29 Oct, (R2120584 ??)
5 Nov, (R0808959 ??)
Commitment 31 Item (7)
Commitment 32 Item (2)