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ESK-95-217

November 8, 1995

Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control Desk
Subject: Quad Cities Station Unit 2
Q2R13 Outage Report
NRC Docket No. 50-265

On August 4, 1995, Quad Cities Station completed the Unit 2 Refuel Outage Q2R13. Enclosed is a report outlining major work performed, modifications completed, major goals established for the outage, and doses received by personnel performing the work.

The following attachments are enclosed for your review:

Attachment A to this letter provides a summary of the outage duration and goals as established by Quad Cities Station prior to the commencement of Q2R13.

Attachment B of this letter discusses the outage critical paths and significant occurrences during the refuel outage.

Attachment C of this letter describes the Q2R13 outage chronology and schedule narrative of the refuel outage.

Attachment D of this letter provides a list of the Q2R13 major projects performed

Attachment E of this letter discusses emergent work and operator work around resolution.

Attachment F of this letter discusses programmatic/NRC commitments being tracked by NRR.

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Mr. William T. Russell, Director

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ComEd has evaluated all work which was originally scheduled, as well as the status of all Unit 2 safety systems. Based upon this evaluation, ComEd has concluded that all Unit 2 safety systems have been fully tested, and will perform the required design functions.

If there are any further questions, please contact Nick Chrissotimos, Regulatory Assurance Supervisor, at (309) 654-2241 extension 3100.

Very truly yours,


E. S. Kraft, Jr.
Site Vice President
Quad Cities Station

Attachments:

- A: Outage Duration and Goals
- B: Outage Critical Paths and Significant Occurrences
- C: Q2R13 Outage Chronology and Schedule Narrative
- D: Q2R13 Major Projects
- E: Emergent Work and Operator Work Around Resolution

cc: W. T. Russell, Director - NRR
R. Pulsifer, Project Manager - NRR
J. Martin, Regional Administrator - Region III
C. Miller, Senior Resident Inspector - Quad Cities Station
Office of Nuclear Facility Safety - IDNS

ATTACHMENT A OUTAGE DURATION

The Q2R13 Refueling Outage lasted a total of 152 days. The original scheduled length was 95 days. Cold shutdown was achieved on March 5, 1995 at 1943. Unit synchronization was on August 4, 1995 at 1600. The unit was resynchronized to the grid at 2143 after the main turbine overspeed tests.

OUTAGE GOALS

1. No Lost Time Accidents.

There was one lost time accident involving ComEd personnel and one lost time accident involving contractors.

2. There will be 15 or less OSHA recordable accidents.

There was a total of 14 OSHA recordable accidents.

3. The outage costs will remain within the budgeted amount of \$37.1 million.

The total cost was \$36.175 million.

4. The radiation exposure will be less than 750 man-rem.

The total Station exposure during the outage period was 543.819 man-rem.

5. Less than 5,000 cubic feet of dry active waste generated.

There were 1845 cubic feet of solid waste generated during Q2R13.

6. No errors equivalent of a Level 2 PIF (Problem Identification Form).

There were 2 level 2 PIFS.

7. Completion of all planned activities.

A very high percentage of all planned activities of Q2R13 were completed.

8. The Outage will be completed in 95 days (March 5, 1995 to June 8, 1995).

The Outage took a total of 152 days to complete. The increase in time was partly due to increased scope from emergent work and repairs, partly due to some actual work taking much longer than the initial estimates and partly due to equipment out of services (i.e. delays, minor errors and corrective action implementation).

ATTACHMENT B CRITICAL PATH

The Outage Design had "Through the Vessel" as the dominant critical path for the Reactor Shroud inspection and repair. There were three other potential critical paths. They were the Torus cleaning and painting; the Reactor Water Cleanup System Piping and Regen Heat Exchanger Replacement; and the Electrical Bus and Transformer work. This work went quite well in Q2R13 and did not threaten critical path.

SIGNIFICANT OCCURRENCES

This Refueling Outage started off slowly. Operations had difficulty in removing equipment and systems from service and two OOS errors were committed on the first weekend (March 4 & 5). A short time later another OOS error occurred and the Station stopped OOSs until a Root Cause could be determined, corrective action implemented and procedure changes incorporated. This time delay was not recovered during the remainder of Q2R13.

The Refuel Bridge and Mast malfunctions caused delays both during core unload and reload. The delays in core unload delayed "Through the Vessel" critical path work.

The Reactor Shroud repair and Reactor Internals inspections took much longer than anticipated. The major impact was encountered during the modification of the steam separator pedestal legs to account for Shroud repair hardware interferences. This accounted for an increased outage duration of over 3 weeks.

During the vessel hydro, inspections revealed an unexpected number of leaking components. These repairs increased outage scope duration 6 days.

The EHC system had a large scope of work completed during the outage. During tuning of the EHC System, it demonstrated instability during certain start-up evolutions. The unit was kept off line until this condition was resolved adding a schedule delay of 5 days.

Major scope increases:

1. Generator Stator Bar Repair/Replacement
2. CRD HCU Valve Inspections
3. Low Pressure Turbine Blading Inspection
4. Recirc M/G Set Motor and Generator Inspection and Testing
5. Reactor Flange Steam Cuts
6. Circ Water Bay/Circ Water Pump Repairs
7. Hydro Leaks
8. EHC System Adjustments
9. Reactor Steam Separator Modification

RADIATION DOSE LEVELS

Our ALARA goal of 750 man-rem was not exceeded. The Station total during Q2R13 was 543.819 man-rem. The difference between projected and actual was due to effective job planning, good system decons, use of temporary shielding, the change in the Torus recoat scope and the entire outage work force striving for dose reduction.

COSTS

The original Q2R13 budget was \$37.1 million. The final budget was \$36.175 million for all outage activities.

UNIT RETURN TO SERVICE

The Unit was synchronized to the grid on August 4, 1995 at 1660. This ended Q2R13. The Main Turbine was taken off line, 2 overspeeds completed, and resynchronized at 2143.

ATTACHMENT C
Q2R13 OUTAGE CHRONOLOGY

MAJOR ACTIVITIES COMPLETED FOR (03-05 to 03-12)

1. Unit off line - 0219 March 5, 1995
2. Cold shut down reached at 1943 March 5, 1995
3. Turbine/Generator OOS
4. Reactor Head removed 0530 March 8, 1995
5. LLRTs
6. Dryer removed
7. Transformers 2 & 21 OOS
8. EHC System OOS
9. 'B' Core Spray OOS

MAJOR PROBLEMS ENCOUNTERED:

1. Out of service difficulties

CURRENT MAJOR WORK ACTIVITIES:

1. RWCU decon
2. Fuel unload
3. Bus 24-1 OOS
4. Torus draining

MAJOR ACTIVITIES COMPLETED FOR (03-13 to 03-19)

1. LLRTs

MAJOR PROBLEMS ENCOUNTERED:

1. Refuel bridge

2. OOSs

CURRENT MAJOR WORK ACTIVITIES:

1. Unloading fuel

MAJOR ACTIVITIES COMPLETED FOR (03-20 to 03-26)

1. Core unloaded
2. Condensate system off
3. LLRTs
4. Torus 100% drained

MAJOR PROBLEMS ENCOUNTERED:

1. OOSs

CURRENT MAJOR WORK ACTIVITIES:

1. RHR decon
2. Preparing Vessel for draining
3. 'A' Loop RHRSW OOS
4. Bus 23-1 OOS

MAJOR ACTIVITIES COMPLETED FOR (03-27 to 04-02)

1. Bus 28, MCC 28-3 & 28-2 de-energized
2. RHR decon
3. Cavity drained
4. Reactor Head passed visual inspection
5. Bus 23-1 OOS
6. 2C & 2B MSIVs OOS

MAJOR PROBLEMS ENCOUNTERED:

1. OOSs

CURRENT MAJOR WORK ACTIVITIES:

1. Finish Core Spray, RHR & RHR SW OOSs
2. Recirc decon

MAJOR ACTIVITIES COMPLETED FOR (04-03 to 04-09)

1. MCC 28-1A
2. Recirc decon discharge side
3. Mod Test on 23-1/13-1 X-tie (SBO)
4. B Circ Bay Dewatered
5. Reactor Head Removed
6. Unit 2 Diesel Generator SMAD run
7. HPCI Sparger welded in place

CURRENT MAJOR WORK ACTIVITIES:

1. Reactor flange work
2. Transformer 21 through fault test
3. RVLIS tie in

MAJOR ACTIVITIES COMPLETED FOR (04-10 to 04-16)

1. 2A 24/48 VDC Battery Discharge test
2. Unit 2 Diesel Generator OOS
3. Bus 24 OOS
4. Vessel Flange Weld repair

5. Main Steam Line plugs installed
6. C Circ Bay & Circ System dewatered
7. Transformer 21 through fault test
8. Condensate OOS
9. Scram Discharge Vol Vents and Drains Passed LLRTs

CURRENT MAJOR WORK ACTIVITIES:

1. Transformer 1 and Transformer 2 Deluge tests
2. Condensate, Feedwater OOSs
3. Recirc System OOSs
4. Diesel Generator work

MAJOR ACTIVITIES COMPLETED FOR (04-17 to 04-23)

1. Transformer 21 Phase checks
2. Bus 24 / Transformer 22 OOS
3. HPCI Sparger installation
4. Jet pump beams & bolts passed inspection
5. Reactor Vessel PM Inspections
6. All Unit 2 24/48 VDC Batteries and Busses RTS
7. Reactor Vessel Nozzle Inspection

MAJOR PROBLEMS ENCOUNTERED:

1. Main Generator Hi Pot Failed

CURRENT MAJOR WORK ACTIVITIES:

1. Unit 2 Diesel Generator

2. Bus 24
3. Bus 23 OOS
4. Shroud Repair

MAJOR ACTIVITIES COMPLETED FOR (04-24 to 04-30)

1. Transformer 22 Re-energized
2. Bus 24 Breaker Mod tests
3. 250 VDC Essential Battery Discharge test
4. Main Generator Upper Stator Bars Removed
5. Bus 23 OOS

MAJOR PROBLEMS ENCOUNTERED:

1. Generator Stator
2. Shroud Inspections / repair

CURRENT MAJOR WORK ACTIVITIES:

1. Bus 23 work
2. Generator Stator repair
3. Reactor Shroud repair

MAJOR ACTIVITIES COMPLETED FOR (05-01 to 05-07)

1. Unit 2 Diesel Generator 24 hour endurance run
2. MCC 27-1 RTS
3. T-22/B-23 OOS
4. AR snubber Repair/Inspections
5. MCC 25-3 RTS

6. Ist Reactor Shroud Tie Rod installed
7. S.B.O. Logic test

MAJOR PROBLEMS ENCOUNTERED:

1. Pot fuse problem on RTS of 722

MINOR PROBLEMS:

1. 2C Circ bay in leakage excessive, stop logs repaired.

CURRENT MAJOR WORK ACTIVITIES:

1. T 22 / Bus 23 work
2. Reactor Shroud
3. Generator Stator repair
4. RTS 'A' Loop RHR SW

MAJOR ACTIVITIES COMPLETED FOR (05-08 to 05-14)

1. T 22 Deluge Test
2. Bus 23 RTS
3. LLRTs
4. 67 Day LCO (Appendix R) exited
5. Bus 23 to T-25 construction and mod test

MINOR PROBLEMS:

1. 2C RHR SW pump ran backwards during coupled run
2. Removed incorrect 112 valve during CRD work
3. One Main Steam Safety Valve out of Tech Spec calibration

CURRENT MAJOR WORK ACTIVITIES:

1. Generator Stator Work
2. Shroud Work
3. 4KV UV

MAJOR ACTIVITIES COMPLETED FOR (05-15 to 05-21)

1. 2A Service Water Pump Mod test
2. 2B RHR Service Water Pump Uncoupled Run
3. Bus 24 Pot Fuse Drawer Inspection
4. Unit 1 Refuel Bridge repaired
5. Physical Shroud repair completed
6. LLRTs
7. ACAD System Hi DW Press Isolation Logic test
8. Bus 24-1 UV test
9. Unit 2 Bridge repairs

MAJOR PROBLEMS ENCOUNTERED:

1. Length of time to perform Core Shroud repair

CURRENT MAJOR WORK ACTIVITIES:

1. Core Spray Logic test
2. 23-1 4KV UV test
3. A & B Loop RHR Logic tests
4. Fuel Load

MAJOR ACTIVITIES COMPLETED FOR (05-22 to 05-28)

1. Bus 23-1 UV test
2. RWCU System Flush
3. IVVI II
4. Generator Stator Bar Bake
5. Core, Spray Logic test
6. A & B Core Spray Breaker Mod tests
7. A RHR loop logic test
8. Main Generator Meggar & Hi Pot
9. LLRTs

MAJOR PROBLEMS ENCOUNTERED:

1. CRD rework of 112 valves

CURRENT MAJOR WORK ACTIVITIES:

1. Energize Bus 21 & 22
2. Prepare for Core Load
3. Venting & Exercising CRDs

MAJOR ACTIVITIES COMPLETED FOR (05-29 to 06-04)

1. SRM/IRM Rod Block measurements
2. Bus 21 & 22 RTS
3. B Loop RHR Logic
4. CRD Accumulator charging
5. 350 fuel bundles loaded

6. EHC accumulators charged
7. Initial closeout of condenser
8. Main Generator Seal Oil Pressure test

MAJOR PROBLEMS ENCOUNTERED:

1. Refuel Bridge software problems
2. SBLC Relief Spring and appropriate set points (U1 & U2)

MINOR PROBLEMS:

1. 2B Recirc Pump Thermocouple holes did not align
2. SBO diesel endurance run delayed for breaker repair
3. Crack in seal trough drain on condenser

MAJOR WORK ACTIVITIES:

1. Hydro
2. Finish Loading Core

MAJOR ACTIVITIES COMPLETED FOR (06-05 to 06-11)

1. Turbine Oil & Seal Oil Systems filled
2. CRD accumulator charging
3. Rewatering circ system
4. LLRTs
5. Condenser final internal inspection
6. Core Reload
7. RHR SW Loops A & B X-Tie Flush
8. Reactor Core Verification

9. A, B & C LP Turbine Blade Inspections
10. CRD Friction testing

MAJOR PROBLEMS ENCOUNTERED:

1. Refuel Bridge
2. Both Reactor Head "O" Rings damaged
3. Sheared bolt on separator lifting plate guide rig

MINOR PROBLEMS:

1. B Torus Purge Fan, 1601-60 Valve failed LLRT
2. Unit 1 MSL Rad Monitor Power Supply (used Unit 2 Monitor)
3. Time required to remove MSL plugs

CURRENT MAJOR WORK ACTIVITIES:

1. Fill and vent Recirc Loop
2. Auto blowdown logic & simulation
3. Reactor assembly
4. Hydro

MAJOR ACTIVITIES COMPLETED FOR (06-12 to 06-18)

1. Upper condenser hatches on
2. LLRTs
3. Generator pressure test
4. RWCU Sys High Temp Flush
5. Bus 21 & 22 energized

6. Condenser tube inspection
7. Recirc portion of RHR Logic test

MAJOR PROBLEMS ENCOUNTERED:

1. Interference setting separator

MINOR PROBLEMS:

1. Water clarity in cavity and dryer/separator pit area temperature
2. RWCU Mod Test problems
3. Installing MSL plug
4. ADS logic testing problems

CURRENT MAJOR WORK ACTIVITIES:

1. Make repair to separator
2. Logic testing

MAJOR ACTIVITIES COMPLETED FOR (06-19 to 06-25)

1. Control Rod timing
2. SBO D/G 24 Hr Endurance test
3. ADS Logic test
4. Main Generator gassed with Hydrogen
5. RCIC Logic test

MAJOR PROBLEMS ENCOUNTERED:

1. Difficulty with separator cutting process
2. Steam Line Plug removal

CURRENT MAJOR WORK ACTIVITIES:

1. HPCI Logic testing
2. Reactor Re-assembly
3. Reactor Vessel Hydro

MAJOR ACTIVITIES COMPLETED FOR (06-26 to 07-02)

1. Unit 2 Diesel Generator operable
2. Separator repair
3. Dryer set
4. Valve lineups
5. EHC Mod testing
6. Reactor Head Set
7. Reactor Hydro

MAJOR PROBLEMS ENCOUNTERED:

1. MSL Plugs
2. Reactor Vessel flange indication

CURRENT MAJOR WORK ACTIVITIES:

1. Post Hydro list
2. ECCS Preparation for testing

MAJOR ACTIVITIES COMPLETED FOR (07-03 to 07-10)

1. Hot Scram timing
2. ECCS testing
3. Drywell head installed

4. 1B MSIV RTS
5. 2B RHR Room Cooler inspected
6. 2B Core Spray Room Cooler inspected

MAJOR PROBLEMS ENCOUNTERED:

1. 1B MSIV
2. 2A RHR Room Cooler
3. 2A Recirc Pump Bus Bar

CURRENT MAJOR WORK ACTIVITIES:

1. Startup checklist
2. Post Hydro / Prior to Startup Work List

MAJOR ACTIVITIES COMPLETED FOR (07-11 to 07-16)

1. J7 and E5 CRD work
2. Drywell Head torqued and LLRT
3. Main Generator Links Installed
4. 2A Reactor Feed Pump tested
5. ATWS tested
6. RVLIS Mod test
7. 2B Core Spray Loop RTS

MINOR PROBLEMS ENCOUNTERED:

1. Vacuum breaker work

CURRENT MAJOR WORK ACTIVITIES:

1. Post Hydro and Pre-startup work

MAJOR ACTIVITIES COMPLETED FOR (07-17 Lo 07-23)

1. 2B & 2C RFPs tested
2. 1601-33D Vacuum Breaker seat replaced
3. HPCI Aux Oil Pump work
4. Group II logic test
5. Drywell separation test
6. Mode switch to startup

MAJOR PROBLEMS ENCOUNTERED:

1. Vacuum breaker problems
2. Data acquisition equipment

CURRENT MAJOR WORK ACTIVITIES:

1. Continue with startup / increasing pressure

MAJOR ACTIVITIES COMPLETED FOR (07-24 to 07-30)

1. RCIC overspeed test
2. HPCI overspeed test
3. Repair of EHC problem
4. Reactor critical 7/27/95 time 1921

MAJOR PROBLEMS ENCOUNTERED:

1. Bypass Valves oscillating
2. EHC Pressure oscillating

CURRENT MAJOR WORK ACTIVITIES:

1. Unit 2 Startup

MAJOR ACTIVITIES COMPLETED FOR (07-31 to 08-04)

1. Final Drywell Inspection
2. Installed Main Steam Line vibration resonance filter exempt change (EHC oscillations)
3. X2 Interlock pre-critical LLRT V passed
4. Reactor critical 8/2/95 time 1530
5. HPCI Hi Pressure Operation Run
6. Main Generator Sync at 8/4/95 time 1600
7. Turbine overspeed test
8. Drywell and Torus inerted

CURRENT MAJOR WORK ACTIVITIES:

1. Startup testing to full power

Q2R13 SCHEDULE NARRATIVE

The Unit 2 generator was removed from the grid to start Q2R13 on schedule. On the shutdown we followed the "Soft" Shutdown/Cooldown procedure to gather data and to minimize thermal and hydraulic shock to the Reactor vessel; therefore, the cold shutdown condition was reached at approximately 2000 on March 5, 1995. Based on the data received, the station does not plan to conduct the extended cooldown in the future. All required shutdown testing was completed.

The Reactor disassembly was delayed slightly by the Out of Service (OOS) difficulties. These problems also delayed systems being cleared for work and modifications.

The U-2 refuel bridge mod led to the delay of core unload. The problems were in the software and minor fine tuning. This caused the vessel inspection and repairs to be delayed.

The Main Generator Stator and Rotor Inspection were on schedule when the stator Hi-POT test indicated failed stator bars. This became a significant scope increase. The station and General Electric mobilized, completed repairs, and the generator was assembled with no impact on outage length. The Electro-Hydraulic Control system received many upgrades to improve system reliability. Some of these changes led to unstable bypass valve operation during startup which impacted the outage end date.

The torus draining, inspection and painting project proceeded at a deliberate pace based on Lessons Learned from Q1R13. The hydrolazing of the shell and ring header significantly lowered the area dose. The Ring header Emergency Core Cooling System suction valves were replaced and the High Pressure Core Injection sparger was installed.

Core Spray and Residual Heat Removal system work progress was satisfactory once the systems were OOS. The logic testing for these systems was completed in a timely manner.

The transformer and bus electrical work went very well after these components were ready to be worked. The bus work could have had a potential for major outage impact, but planning was extensive and proved effective.

The Reactor Water Clean-up system had extensive work completed. This included the replacement of the inlet and outlet piping and the replacement of the regenerative heat exchangers. This difficult project progressed quite well. Since the cleanup system was not available after the recirc system decon, a submersible 600 GPM Tri-Nuke filter skid was used to clean the Reactor vessel water for flood up. This was a success.

Job length estimates for vessel internal inspections and repairs were not accurate. These activities took longer to complete than originally forecasted. This delay did not include

the steam separator modification or the Reactor flange steam cut repair.

The Control Rod Drive and recirc system windows were lengthened with the addition of increased work scope. These decisions were made by station management after system work had started to increase system reliability.

The Reactor Water Clean-up, Residual Heat Removal and Recirc System Decon all progressed satisfactory. The actual recirc decon finished 2 days ahead of schedule.

The Reactor Core Isolation Cooling, High Pressure Core Injection and condensate/feedwater system work went routinely. Their respective end dates were delayed due to late starts.

The Stand-by Liquid Control system work closure was delayed due to newly installed safety related check valves not passing local leak rate tests. This did not impact core reload.

The refuel bridge caused problems during the core reload. These caused a 3 day delay in the reload. After extensive troubleshooting and repairs, it worked well in the last stages of core reload.

During Reactor assembly, it was discovered that the steam separator would not fit on the shroud flange due to the shroud repair hardware. The subsequent modification to the separator support legs took over two weeks to complete before reactor reassembly could restart.

During the hydro which progressed well, an uncommon number of components which see Reactor pressure, were found to be leaking. These all were repaired prior to unit startup.

When the Unit began startup, it went smoothly. Once the reactor reached pressure it was discovered that the Electro-Hydraulic Control system was causing bypass valve oscillations and the new pilot operated relief valves were leaking. The unit was shutdown to rectify these issues. When repairs were completed, the unit was restarted and the generator synchronized to the grid on August 4, 1995 at 1600.

ATTACHMENT D
Q2R13 Major Projects

RVLIS III

Reactor Feedwater Vessel Nozzle Inspection

HPCI Turbine and Pipe Alignment

EHC System Upgrades

Refuel Bridge Modifications

Main Generator Rotor and Stator Inspection/Repair

Turbine Control, Stop and bypass valve inspections

Replaced 7 LPRMs

Replaced 28 Control Rod Drives

Completed numerous CRD HCU valve inspections

Replaced 40 CRD HCU accumulators

Replaced 4 Reactor safety valves and the 1 Reactor safety/relief valve

Installed PORVs in place of the ERVs

Replaced both Reactor Recirc Pump seals

Performed RWCU, RHR and Recirc System decons

Completed 6 major 4 kV motor refurbishments (B&C RHRSW, C&D RHR, 2D Condensate and 2A Core Spray)

Completed Reactor Shroud vertical weld inspections and the horizontal weld repairs

Rebuilt ESS UPS Panel

Inspected the Reactor Building 125 VDC distribution panel

Cleaned and inspected MCCs 29-1, 29-1-1, 20-1, 25-3 and 28-3

Cleaned and inspected 250 VDC Reactor Building Busses 2A and 2B; and Turbine Building

Bus 2

Tied in SBO D/G to Busses 23-1 and 24-1

Cleaned and inspected Busses 21, 22 and 23-1

Completed switchgear enhancements to Bus 23 and 24

Completed 82 Mods, Minor Design and Exempt Changes

Upgraded the Reactor Feed Water Level Control System

Completed 14 dynamic VOTES Tests

Completed 46 Static VOTES Tests

Replaced RWCU Regen HXs and all inlet and outlet piping

Rebuilt 2 safety related feedwater check valves

Inspected and repaired 65 check valves (IST Program)

Performed 6 MOV magnesium rotor inspections

Inspected, repaired and upgraded numerous safety related MOVs

Completed the full set of Reactor Vessel IVVI

Replaced aux contacts on all Bus 23, 24, 23-1 and 24-1 breakers

Repaired all 4 steam moisture separators

Rebuilt 2 MSIVs

Made 5 major repairs in the extraction steam system

Completed major repairs in the drywell ventilation system

Completed fixes to reduce flux heating in the Unit 2 Main Transformer

Replaced the X-12 primary containment bellows

Performed SRM/IRM upgrades and replaced 5 detectors

Completed all backlogged main condenser work

Completed extensive circ water system/crib house maintenance

Repaired 2A RHR HX

Inspected and modified various Unit 2 Room Cooler HXs

Completed 21 4kV and 15 480V breaker inspections

Completed Torus draining, cleaning and detailed paint touchup/repair

Replaced many feedwater heater level controllers

OCB 10-11 and 11-1 inspection and refurbishments

Asbestos removal and replacement with conventional insulation

Inspected and tested Torus T-Quencher bolts

Transformer 21 replacement

HPCI exhaust sparger installation

Completed 54 erosion/corrosion inspections

Functionally tested 52 snubbers

Completed 142 ISI examinations, 4241 surveillances and PMs

ATTACHMENT E
OPERATOR WORK AROUNDS AND EMERGENT WORK

MAJOR EMERGENT WORK:

1. Generator Stator Bar Repair/Replacement
2. CRD HCU Valve Inspections
3. Low Pressure Turbine Blading Inspection
4. Recirc M/G Set Motor and Generator Inspection and Testing
5. Reactor Flange Steam Cuts
6. Circ Water Bay/Circ Water Pump Repairs
7. Hydro Leaks
8. EHC System Adjustments
9. Reactor Steam Separator Modification

OPERATOR WORK AROUNDS

During Q2R13 a total of 21 were scheduled/completed and the station completed an additional 27 other Operator Work Arounds.

ATTACHMENT F
STATUS OF PROGRAMMATIC/NRC
COMMITMENTS FOR NRR

GENERIC LETTER 89-13 (SERVICE WATER):

- Refurbished B & C RHR Service Water Motors
- The following heat exchangers were inspected during Q2R13: 2A and B RHR Room Coolers, 2A and B Core Spray Room Coolers Unit 2 HPCI, 2A and B RHRSW Room Coolers, 2A RHR Heat Exchanger, Unit 2 DG Heat Exchangers, Unit 2 and 1/2 DGCW Pump Room Cooler. Unit 1/2 DG Heat Exchangers were performed in February 1995.
- Several sections of ECCS piping was hydrolased during Q2R13, due to past flow balancing problems.

REACTOR WATER CLEANUP (RWCU)

- Performed decontamination of the system
- Replaced RWCU Regen HXs and all inlet and outlet piping

SHROUD REPAIR WORK

- Station completed the modification for the Core Shroud
- Completed Reactor Shroud Vertical weld inspections

GENERIC LETTER 89-10 (MOVs)

- Completed 14 dynamic VOTES tests
- Completed 46 Static VOTES tests
- Performed 6 MOV Magnesium Rotor Inspections
- Inspected, repaired, and upgraded numerous safety related MOVs
- Per John Schrage letter to NRC (dated June 30, 1995) the station has completed the required Generic Letter 89-10 testing for Unit 2