

# Oyster Creek 1R21 Outage

Startup PORC

Update on Drywell Shell Inspections

November 4, 2006

# Agenda

- Issues Identified
- External Questions and Concerns
- Actions Initiated
- Corrective Actions
- Drywell Shell Integrity
- Conclusions
- Next Steps
- Reference Drawings

# Issues Identified

- Standing water was identified in the trench inside the Drywell at the Drywell floor level in Bay 5 when the foam fill was removed for planned inspections.
- Dampness was identified in the other trench in bay 17, however, no standing water was present.

# Actions Initiated

- Performed detailed drawing reviews to identify potential sources of water
- Obtained water samples and performed lab analysis
- Performed in plant inspections to identify potential leakage paths
- Performed a dye tracer test in the sub pile room trough to determine leakage source

# Actions Initiated - continued

- Removed additional concrete to perform UT exams to determine any impact to the Drywell shell
- Prepared a comprehensive engineering evaluation to evaluate the impact of water on the Drywell shell integrity
- Performed field repairs and modifications to mitigate future water intrusion

# Corrective Actions

- Inspection of the stainless steel liner (VT 1) of the Drywell floor drain sump confirmed that the liner remains leak tight.
- Sealed the concrete curb to Drywell shell interface at the perimeter of the Drywell with approved caulking materials.
- Repaired leakage paths in the sub pile room drainage trough
- Caulked the concrete to Drywell shell interface in bay #5 and #17 trenches
- Performed a post modification leakage test of the trough to confirm the repairs were adequate

# Drywell Shell Integrity Review

- Engineering evaluations were developed to evaluate the current acceptability of the drywell shell
- Specific areas evaluated included:
  - Detailed field walk-downs and inspections
  - Chemistry sample analysis of the water in the bay #5 trench
  - Non destructive and visual examinations of the Drywell shell in both trenches and on the exterior side in the sand bed region.
  - Removal of additional concrete on the bottom of bay #5 trench and completion of non destructive and visual examinations
  - A corrosion evaluation of the Drywell shell steel, in contact with concrete in the presence of water

# Conclusions

- Investigations concluded that the likely entry point for the water was a deteriorated connection at the sub-pile room drainage trough
- Non destructive exams confirmed that the drywell shell thickness maintains adequate margin by exceeding the required minimum wall thickness
- Established that the drywell shell structural integrity is not impacted by continued water in the drywell elevation 10'-3" concrete
- Drywell structural integrity is maintained and continues to meet all of its design bases requirements
- Will perform additional inspections during 2008 refueling outage



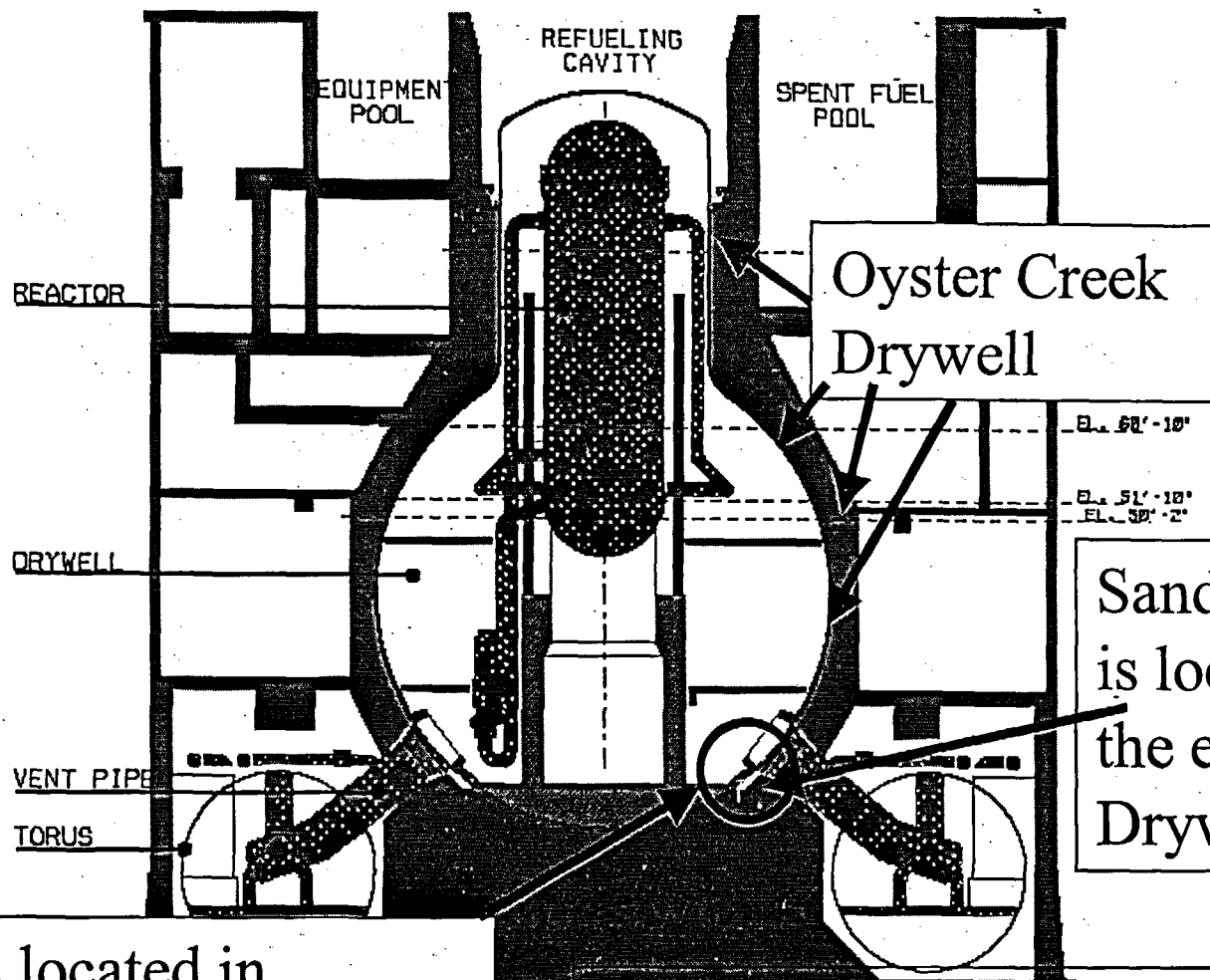
# Next Steps

- Technical Evaluation Updates and Completion
- Evaluations Support Current Restart Schedule
- Notifications to Stake-holders
- Ongoing Communications with NRC & State officials

# Reference Drawings

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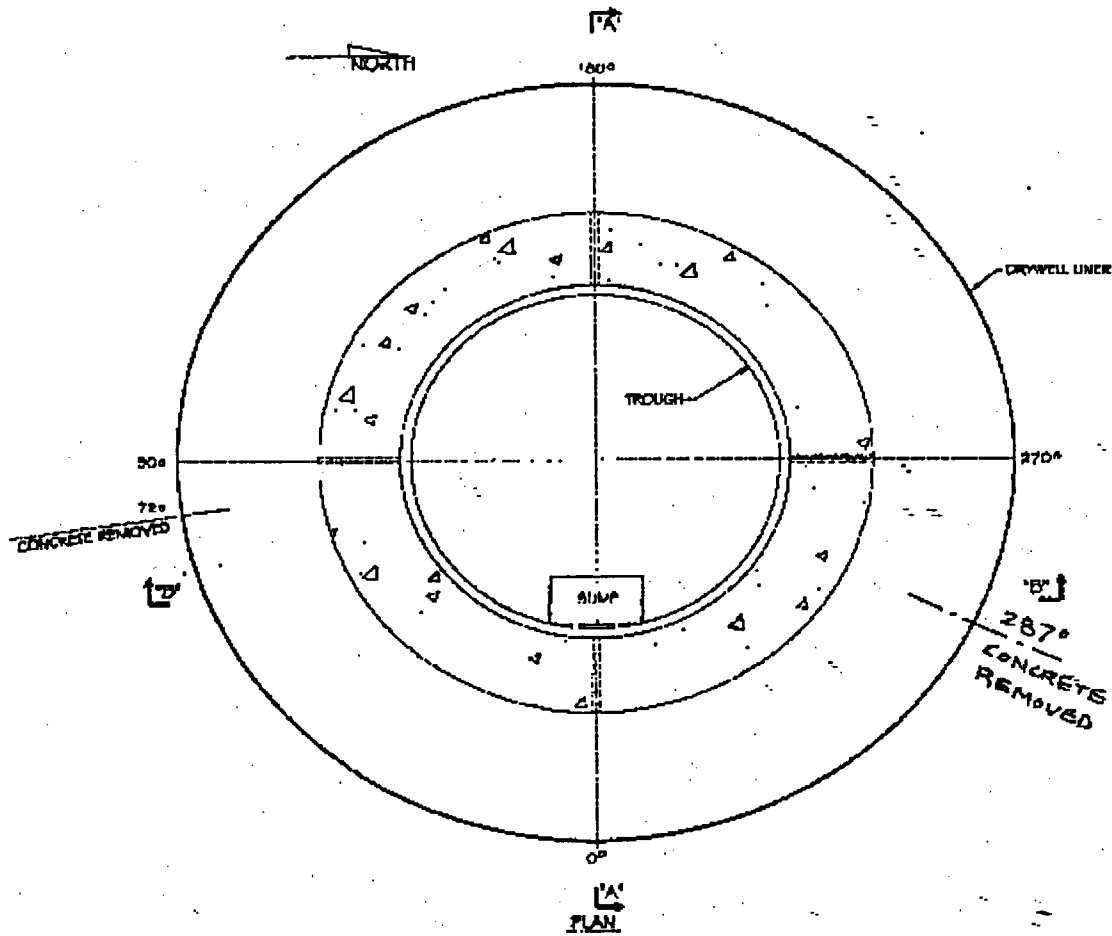


Sandbed region is located on the exterior of Drywell

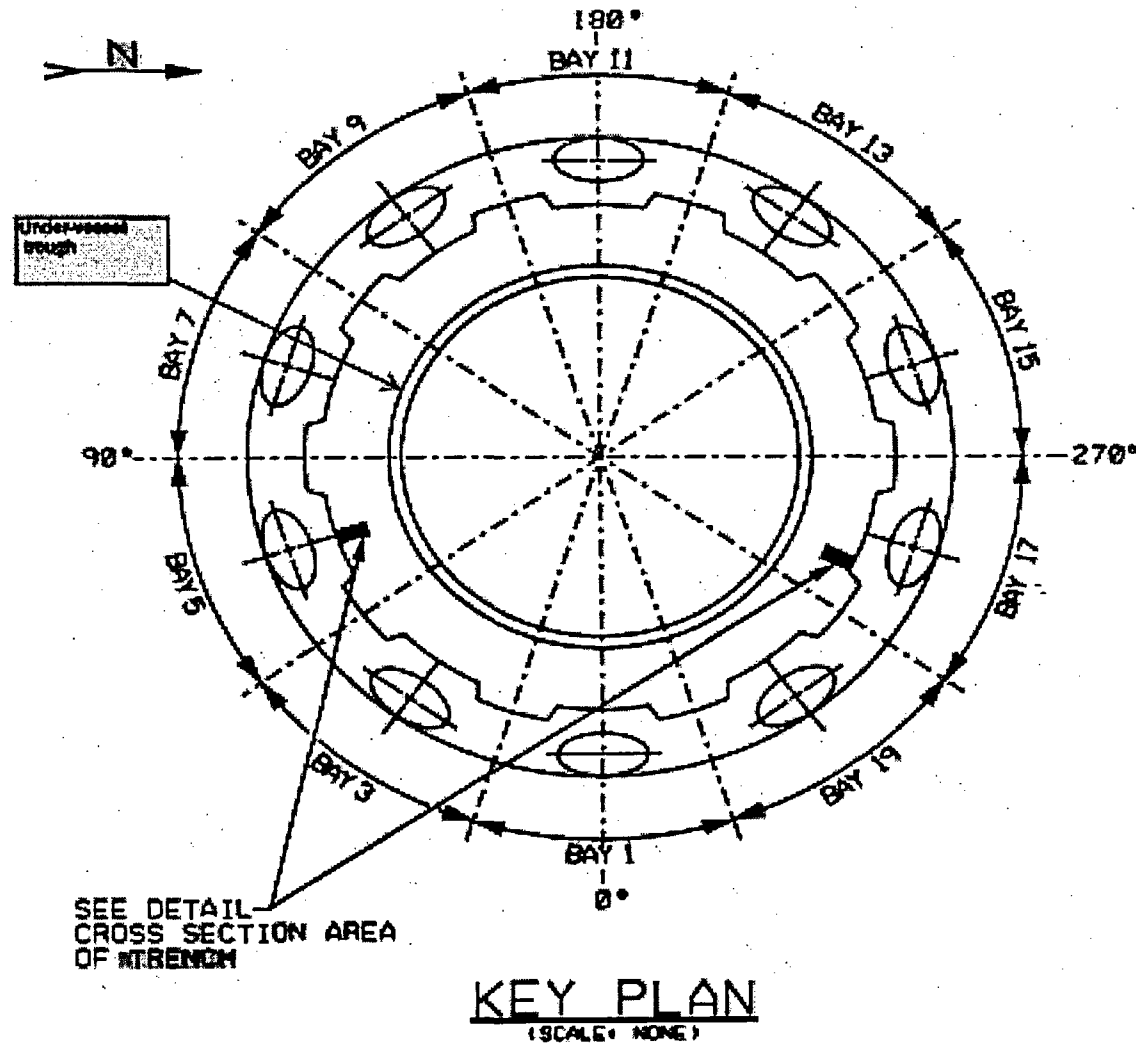
Trenches located in concrete floor inside the Drywell in two locations

In 1986, the station removed concrete at two locations inside the drywell to create the "trench area" to gain access to the drywell shell adjacent to the sand bed region. The purpose of clearing out the area was to obtain UT thickness measurements.

# Top View – Drywell Floor Sketch

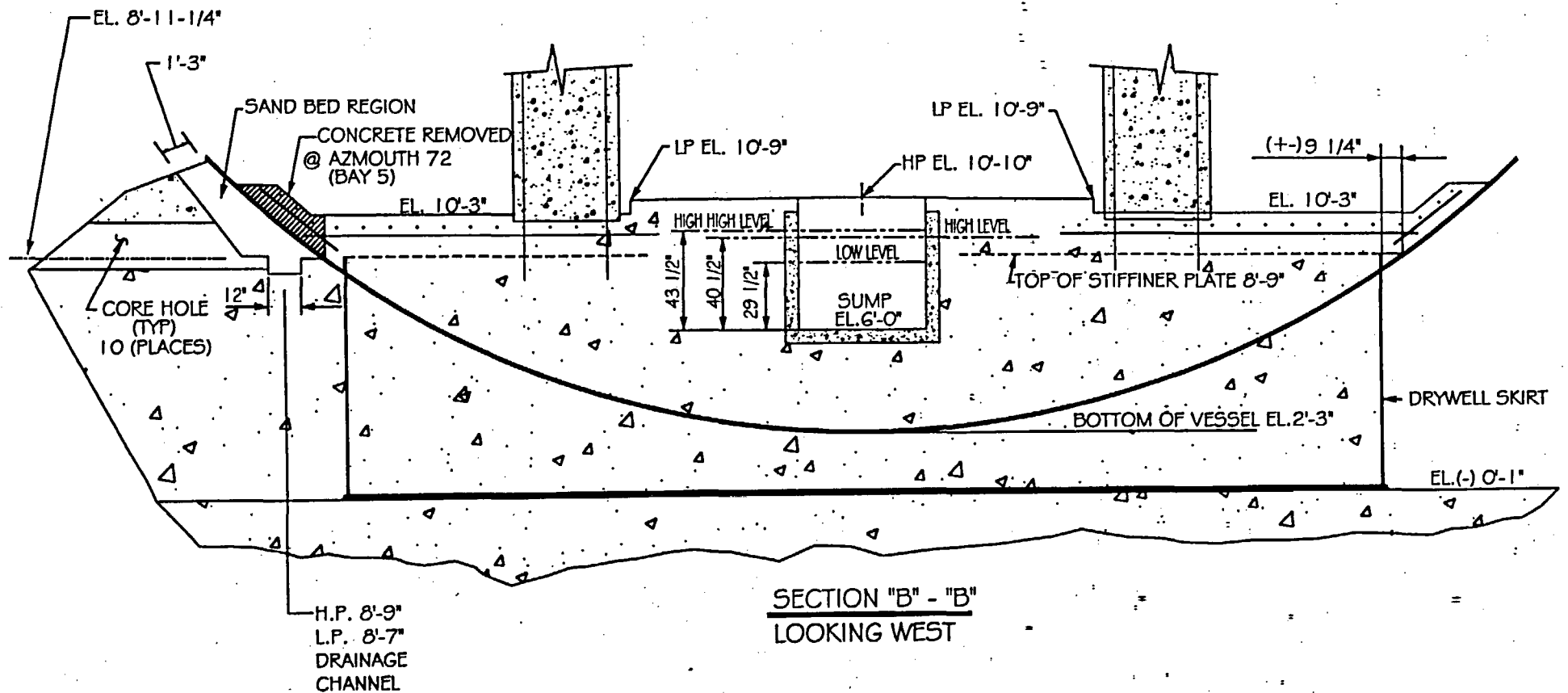


# Plan View of Trough and Trenches

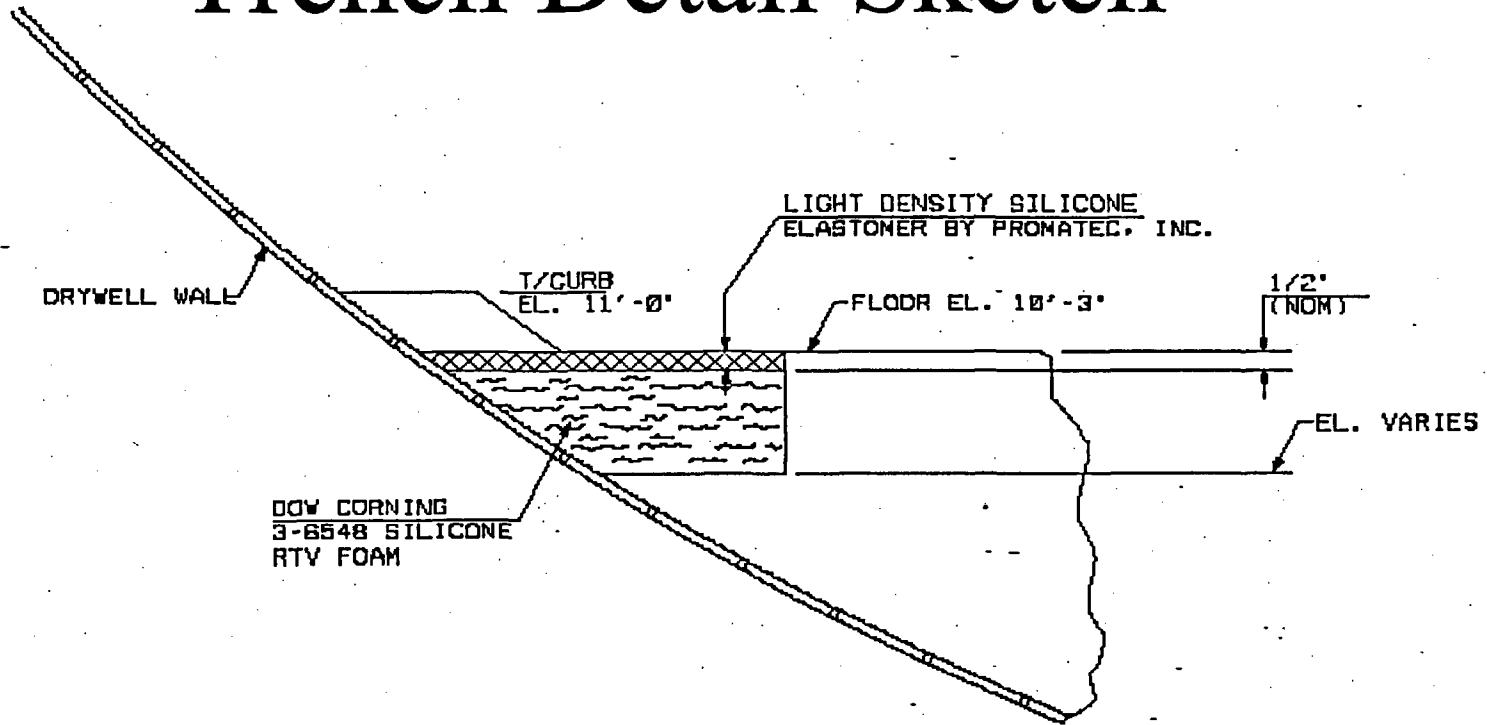


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# SKETCH SHOWING LOWER DRYWELL- SAND BED, TRENCH & SUMP



# Trench Detail Sketch



CROSS-SECTION AREA  
OF TRENCHES IN BAYS 5 & 17

# External Questions and Concerns

- Analysis of data from 2 UT measurements in upper region
- Previously unidentified construction issues (voids, cracks) effect on design bases/assumptions
- Completion of repairs prior to completion of evaluations
- Assurance that corrosion has been arrested ( water and iron oxide present in trench)
- Questions were reviewed and addressed during combined AmerGen, NRC and State meeting on 11/3/2006