

Enforcement Action NEA-2011-03: Deficiencies in the Installation and Inspection of Fire Seals and Other Components at the Nevada National Security Site (NNSS)

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Enforcement Action Summary

- Preliminary Notice of Violation issued on August 11, 2011
 - Quality Improvement – Severity Level II
 - Failed to identify, control, and prevent recurrence of quality problems related to inspection and installation of penetration seals and other components
 - Inspection and Acceptance Testing – Severity Level II
 - Failed to inspect penetration seals and other components using established acceptance and performance criteria
 - Work Processes – Severity Level II
 - Multiple instances where procedures used to ensure proper installation and inspection were either inadequate or not followed
 - Technical Safety Requirements – Severity Level II
 - Failed to ensure that TSRs were derived from the DSA to provide for the visual inspection of penetration seals
 - Discovery of 58 unsealed penetrations
- \$178K civil penalty mitigated from \$220K
 - Penalty based on levels in existence at the time of the violations



Setting the Stage – The Device Assembly Facility



**DAF was built in 1991 by the Army Corps of Engineers
as a moderate hazard facility operated by the
National Laboratories**

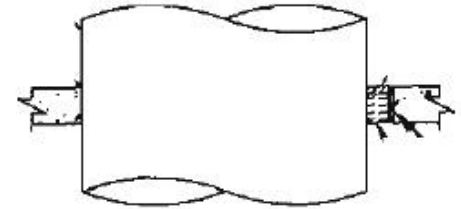
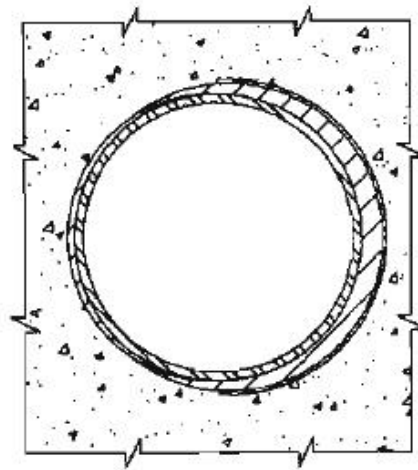


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Setting the Stage – Typical Seal Installation

Penetration seals installed to commercial codes in existence at time of construction

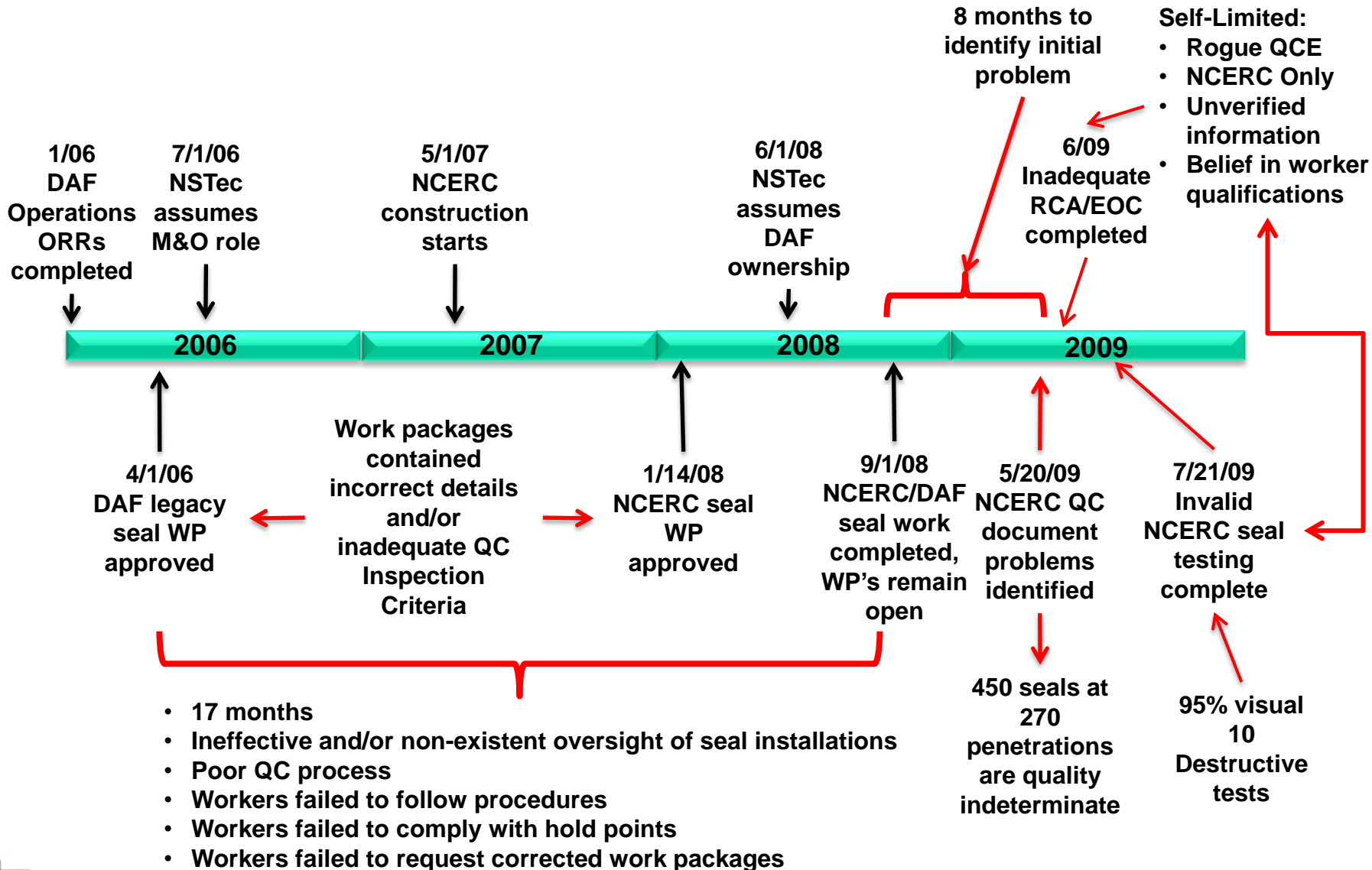


Setting the Stage – Phased Seal Replacement

- DAF Operational Area as of January 2006 – seal replacement in operational area from 2004 to 2006
- National Criticality Experiments Research Center (NCERC) Build-Out – 2008/2009
- Additional legacy seal replacement concurrent with NCERC Build-Out – 2006/2009



Timeline – 2006 to 2009

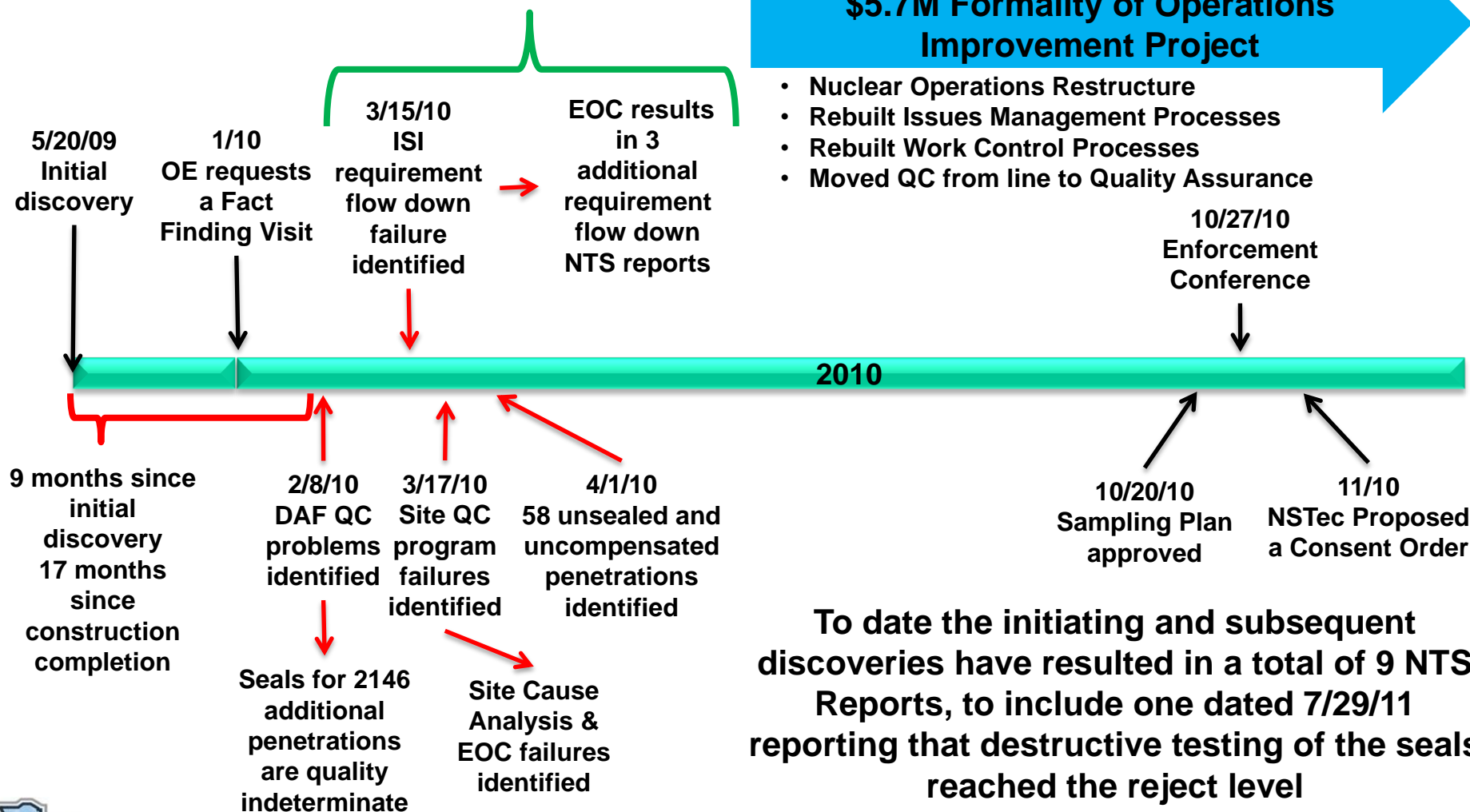


Timeline – 2010

- Elevated NSTec Executive Management engagement
- Parent Organization Assisted Reviews and EOC
- Site Level Common Cause Analysis

\$5.7M Formality of Operations Improvement Project

- Nuclear Operations Restructure
- Rebuilt Issues Management Processes
- Rebuilt Work Control Processes
- Moved QC from line to Quality Assurance



To date the initiating and subsequent discoveries have resulted in a total of 9 NTS Reports, to include one dated 7/29/11 reporting that destructive testing of the seals reached the reject level



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Missed Opportunities

- Effective in-process reviews of the work packages were not completed
 - 8 months to identify the original problem
 - 17 months to identify true Extent of Condition
- Self-Limited the RCA/EOC to NCERC construction work packages
 - Convinced that the condition was the result of the actions of one “rogue” QCE
 - Did not physically verify the acceptability of the DAF work packages
 - Did not consider the RCA contributing cause related to inadequate QC controls which would later be determined to be a universal
- Initial seal testing regimen was not statistically valid
- Did not immediately statistically sample after DAF issues identified
- Failed to develop work packages that could be performed as written
- Failed to instill a culture of procedural compliance into workers
 - Involved craft workers were from the union bench



Enforcement Process Lessons Learned

- Investigation
 - Fact Finding Visit and rapid document responses obviated the need for an on-site investigation
 - Reduction in unallowable costs
- Cost Segregation
 - Established a separate charge number immediately on receiving notification of the pending Enforcement Conference
- Keeping the Site Office involved throughout OE's review helped demonstrate a common understanding of the problems



Enforcement Process Lessons Learned

- The Enforcement Conference was critical in presenting our position that we understood our cultural problems and what was being done to correct them
 - 3-hour Conference
 - Right length
 - Right focus
 - Right detail
 - President, COO, Senior Directors, Counsel, SMEs, Enforcement Coordinator
- Use of the Consent Order Option
 - When it is clear that the water is just getting deeper and muddier and your canoe is sinking, don't wait to negotiate a Consent Order
 - Requesting the Consent Order after the Enforcement Conference is too late



Lessons Learned

- Do not allow preconceptions to drive the Extent of Condition review
 - Consider all possible conditions and then eliminate them rather than de-scoping before you even start
- Assessment processes (operational awareness, management assessment, independent assessment) must be effective in the early identification of adverse conditions
 - Look for problems throughout the process and not just at the end
- Aggressive approach must be taken to complete cause analyses, extent of condition reviews, and corrective action plans in timely and **comprehensive** manner



Questions?



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