PSEG Nuclear Operating Experience (OE)

Hope Creek
Salem
PSEG Nuclear Corporate
Utilities Services Alliance (USA)

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Salem and Hope Creek

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PSEG Nuclear OE Program

Incoming

- INPO IERs - INPO OE Program
- INPO Daily OE
- NRC Information Notices and Summaries
- NRC Daily Report
- Nuclear OEM and Contractors
- PSEG station reports
- Utilities Services Alliance (USA) utility and station reports
- Industry activities – meetings, benchmarking, self assessments
- USA "Jump Calls"
- PSEG and USA peer group calls and meetings

Outgoing

- OE submissions to INPO
- OE to USA
- USA "Jump Calls"
- PSEG and USA peer group calls and meetings

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Reactive Use of OE

- **OE Search is institutionalized in event response and troubleshooting processes**
  1. Hope Creek Safety Relief Valves (SRVs)
     - Problem – chronic valve seat leakage and setpoint drift on 2-stage SRV
     - OE search for Root Cause Evaluation
     - Benchmarking
     - New design in engineering and construction stage – due for testing 12/13
  2. Salem Tagging Issue
     - Problem – low voltage found during circulating water modification
     - Immediate action - USA "Jump" call - identifies immediate actions
     - Follow-up face-to-face meeting - identifies extent of gap to industry standards

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Proactive Use of OE

- Main Turbine
  - Seabrook issued OE 32328 in Nov 2010
  - Main turbine couplings found out of alignment in previous outage
  - Correcting the misalignment was significant effort and added 14 days to the outage
  - Causes – driven by sectionalized HP/LP maintenance
    - aligning couplings by misaligning adjacent bearings
      or
    - comparing "as found" to "as left" rotor position without referring to last rotor position when the couplings were aligned
  - Photogrammetric alignment technology to be used in Salem-1 outage April-May 2013
    - Methodical approach to measuring bearing alignment at different phases of turbine assembly

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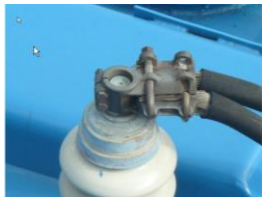
Proactive Use of OE

- Salem transformer bushing clamp
  - Metal piece found on pavement during operator rounds
  - Where did the piece come from?
  - Immediate actions taken to monitor the bushing
  - OE shared with Hope Creek and USA



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Other Examples of Application of OE

- Hope Creek Scram Header
  - Trend in instrument air soldered joint separations OE in 2007-08
  - Hope Creek joints tested in Sep 2008
  - Data transcription error to maintenance work order results in missing the largest leak
  - Hope Creek trip due to rods drifting in in May 2009
- Hurricane Sandy – Salem Trip
  - OE overconfidence – muscle memory
  - Monitor for deviations to previous OE

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Present and Future Challenges

- Nuclear Professionalism
  - Desire and ability to find and use OE is a fundamental
  - Personnel Turnover – Retiring to Replacements
  - Learning that there are few original problems
- Volume of Information
  - Compartmentalizing OE
  - Delivery and access to maintenance supervisors and workers
- OEM and Contractor Input
  - Effectively sharing OE may not be well developed
  - Avenues for processing may not be not well established
- Inspections and Evaluations
  - Sending an unintended message that every OE report must receive follow-up

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