Operating Experience Review

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Clearwater, Florida

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Operating Experience Review

TOPICS

• Recent INPO Operating Experience

• Selected EQ Related Part 21 Reports

• Selected LER
Recent INPO Operating Experience

• The following INPO OE reports have potential relevance or applicability to EQ and were selected based on:
  - Reports issued in ICES since summer of 2016
  - Identified Using a key word search on:
    - Equipment Qualification
    - Environmental Qualification
    - 50.49
    - Qualified Life
    - EQ Program
Recent INPO Operating Experience

- OE #323560 – High Energy Line Break Analysis Inadequacy – 7-12-2016
- OE #324212 – Reactor Plant Sampling Drywell Isolation Valve Loss of Indication – 7-24-2016
- OE #324878 – Automatic Depressurization System Master Trip Unit Card Failure – 9-22-2016
- OE #325341 – Blown Fuse Causes Containment Monitoring / Primary Containment Isolation Valve to Fail Open – 10-18-2016
Recent INPO Operating Experience

• OE # 325344 – Containment High Range Radiation Monitors Inoperable Due to Thermally Induced Current Effects (NRC IN 97-45) – 10-26-2016

• OE #325495 – Inadequate Design Input Results in Inaccurate Accident Range Monitor Measurements – 11-16-2016

• OE #325772 – Wide Range Reactor Level Transmitter Failure – 12-02-2016

• OE #325820 – Unapproved Environmental Qualification Material Caused Inoperability of One Containment Cooling Train – 12/19/16
Recent INPO Operating Experience

- OE #407310 – Electromagnetic Interference From Permanently Installed Plant Equipment – 2-20-2017

- OE #417454 (Non US) – Environmental Qualification Expired for Components Included in the EQ Program – 2-15-2017

- OE #407693 – Decay Heat Removal Low Pressure Core Spray Injection Pressure Switch Failed Outside of Limiting Condition for Operation Limits – 2-18-2017

### 2016 EQ Related Part 21 Reports

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<tr>
<td>Palo Verde</td>
<td>2017-49-00</td>
<td>10-18-2017</td>
<td>HPSI Motor Lead Insulation</td>
<td>Gouged See EN 53023. This deviation was identified by Palo Verde Electrical Maintenance staff during a pre-storage inspection. The gouge was inside the main terminal box, close to the (T2) terminal landing and was deep enough to expose the internal conductive wire. This motor was received on April 5, 2017, following refurbishment at the Westinghouse, Waltz Mill, Pennsylvania, facility.</td>
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| Callaway | 2017-46-00     | 10-03-2017 | INITIAL PART 21 NOTIFICATION - CAMERON MODEL 752B DIFFERENTIAL PRESSURE TRANSMITTERS | See EN 52998  
The 10 CFR Part 21 evaluation is based on the technical information provided by Westinghouse. The notification letter describes that shifts up to 10-20 percent of instrument scale (1.6-3.2mA) can be observed within the transmitter output under the grounding conditions such as those introduced by the original equipment manufacturer during testing. Westinghouse evaluations concluded that such instabilities would be self-revealing within plant applications for which the transmitter output signal was supplied to a Westinghouse 7300 system, assuming the transmitter stanchion was grounded. Not all transmitters within this product line were subject to this concern. |
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| Curtiss-Wright Flow Control Co.              | 2017-31-03 | 9-11-17 (Update) | PART 21 - POTENTIAL DEFECT IN GRAYBOOT SOCKET CONTACTS | See EN 52756  
At initial issuance, the evaluation documented in Report No. EGS-TR-880708-15 presented metallurgical analysis as well as thermal, functional and seismic testing. This report has been revised to include cycle aging, functional testing and pull-out force. Test results confirm that affected socket contacts will continue to perform their intended safety function throughout their qualified life.  
"Based on these final findings, no further actions are recommended for the potentially affected utilities previously notified. Any potentially affected socket contacts, either in inventory or installed, are acceptable for use in their intended safety-related application |
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<td>Mirion Technologies (Canberra), Inc</td>
<td>2016-05-01</td>
<td>8-14-2017</td>
<td>Final Part 21 Report Related to Several Improperly Dedicated Commercial Grade Components</td>
<td>This report is specific to Fort Calhoun. The affected components were replacement parts in the Containment Air Radiation Monitoring System.</td>
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<td>ITT Enidine, Inc (Conoflow)</td>
<td>2016-68-01</td>
<td>2-28-2017</td>
<td>Potential Defect in ITT Conoflow models GT25CA1826 and GT25CD1826 Current to Pressure (I/P) Transducers (Final Report)</td>
<td>On November 2, 2016 a discovery was made of unqualified electrical component substitutions on the internal circuit board. Supplier and internal record reviews indicate these unqualified components were used as early as May 10, 2013, as the previously qualified PCB components are no longer available. Environmental Qualification of test samples containing the suspect circuit boards has been completed. The subject parts continued to operate and perform their intended safety function throughout all EQ tests.</td>
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<td>Valcor Engineering Corp</td>
<td>EN 52407</td>
<td>12/05/2016</td>
<td>PART 21 - NON-CONFORMING COVER MACHINING ON SOLENOID VALVE</td>
<td>See EN 52407 Cover Machining is installed on upper section of Solenoid Valve and it allows for the electrical connection to the valve solenoid and protects inside wiring of the solenoid from environmental condition. Cover machining part number V52636-567 has 0.190 radius (Drawing V52620-50 Zone D3) which was machined too deep removing material from surface needed for proper O-ring seal. The lack of material exposes part of the sealing O-ring which could diminish the O-ring sealing capability. With O-ring sealing capability diminished, Valcor cannot ensure that valves with Cover Machining Installed on Solenoid Assembly will perform its safety function during all postulated events.</td>
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<td>SOR, Inc.</td>
<td>2016-54-00</td>
<td>12/02/2016 (Update)</td>
<td>Notification of Deviation - SOR Qualification Test Report 9058-102 (Updated)</td>
<td>See EN 52359 Related to Steris Isomedix and NRC IN 2015-012. Corrections are now complete to test report 9058-102 regarding the uncertainty calculations. The calculations changed from 8% uncertainty to 9.6% uncertainty for the minimum irradiation aging.</td>
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<td>Emerson Fisher Controls International</td>
<td>2016-52-02</td>
<td>2/24/2017 (Update)</td>
<td>Potential Failure to Comply Concerning Type 546NS Electro-Pneumatic Transducer Seismic Qualification Reports (Update)</td>
<td>See EN 52324 Pursuant to 1 OCFR21.21 (a)(2), Fisher Controls International LLC ('Fisher') is providing required written interim notification of a potential failure to comply concerning Type 546NS Electro-Pneumatic Transducer Qualification Reports. This notification serves as a follow-up to a similarly titled report dated October 27, 2016. Fisher initiated in-house seismic testing to analyze the performance of the device when exposed to high-level seismic activity. The tests concluded on February 10, 2017. Test data analysis is still underway. However, preliminary observations and conclusions can be made. The device itself, when rigidly mounted, does not exhibit natural frequencies in the tested frequency range consistent with previous qualification literature. When mounted to the standard 546 mounting bracket, the tested assemblies do not exhibit natural frequencies below 60 Hz.</td>
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<td>Rotork Controls</td>
<td></td>
<td>10/31/2016</td>
<td>Part 21 - Anomaly Related To Micro Switches (Update)</td>
<td>Rotork have developed versions of the V12 &amp; K5 switches that eliminate adhesive from the materials of construction. Evaluation of pre-production V12 switches, by thermal aging for 10 days at 125°C (257°F), demonstrate the switch non-metallic housing and plunger also outgas materials that contributed to the accumulated contamination observed on switch electrical contacts as reported in Event 51907. The cause of the new outgassing sources and extent of condition is currently being investigated.</td>
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Selected LER

- Farley LER 2016-004-00 (ML16354B551)
  - Reported 12-19-2016
  - Unapproved Environmental Qualification Material Caused Inoperability of One Containment Cooling Train
  - LER identifies that during a refueling outage, motor field cables on the 1C Containment Cooler were found to contain splice material that was EQ but not approved for use in containment.
• Farley LER 2016-004-00 (continued)
  - Splice was installed as part of a design change during the previous refueling outage.
  - LER indicates that an EQ SME did not review the design change
  - Cause was identified as a Human Performance error that resulted in selection of an incorrect splice kit for a design change.
Farley LER 2016-004-00 (continued)

- LER indicated the following corrective actions:
  - Installation of an appropriately qualified splice suitable for use inside containment
  - Additional training was conducted for design engineering
  - A new expectation to have an EQ specialist review design packages when working with EQ component replacements
Operating Experience Review

Question or Comments?