

Open Phase Condition Resolution

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Open Phase Condition Initiative (OPC)

- Topics:
 - OPC Initiative Approval
 - OPC Initiative Changes
 - OPC Initiative Milestones
 - Industry Progress

OPC Initiative approval

- Industry Chief Nuclear Officers approved a formal OPC Initiative in September 2013
 - The OPC Initiative is a formal commitment by all the companies that operate nuclear power plants to follow a specific policy or plan of action
 - The OPC Initiative calls for a proactive plan and schedule for addressing potential OPC vulnerabilities

OPC Initiative approval

- The OPC Initiative calls for the following key actions:
 - Establish implementation guidance
 - Complete analysis to demonstrate compliance or identify actions required to demonstrate compliance
 - Implement design changes, if necessary
 - Complete any design adjustments and enabling of all “active” actuation features
 - Complete UFSAR updates and submittal of Technical Specification updates, if required

OPC Initiative changes (1 of 2)

- **Text changes based upon NRC input:**
 - “important to safety” throughout
 - ‘should’ to “must” for criteria
 - ...two open phases must be considered...
 - Sufficient “robust” calculational bases or tests must be provided...
 - ...detection...within a reasonably short period of time (e.g., 24 hours)
 - ...if automatic detection is not possible, requirements for surveillance each shift must be established...
 - New non-Class-1E circuits will not be allowed to replace existing Class-1E circuits
 - Load transfer cases will include reactor trips with and without accident conditions present

OPC Initiative changes (2 of 2)

- **Text changes based upon NRC input (continued):**
 - Operator action may be credited in the evaluation of provisions 1.3 and 1.4 – if existing regulations and guidelines are met...
 - ...ensure that an open phase event will not challenge fuel cooling during hot shutdown, cold shutdown and refueling modes of operation
 - ...must consider situations where alternate sources are removed from service if allowed by the Technical Specifications
- **Note: Passive safety features plants are *not* included in the initiative**
- **A deviation process will be part of the detailed guidelines – requires utility officer approval and notifications to NEI / NRC – may be needed for some milestones given complexity**

OPC Initiative milestones

Operating Plants Milestone Dates

- May 15, 2013 NSIAC endorsement of the industry direction to resolve the open phase condition issue. **Complete.**
- July 31, 2013 Draft NEI Initiative (what is required; industry criteria to address the open phase condition issue). **Complete**
- August 31, 2013 NSIAC vote of the OPC Initiative by CNOs. **Complete**
- December 31, 2013 Draft NEI guidance document (how to meet industry criteria; containing industry research, developments, pilots, technology, etc. to address the open phase condition issue).
- December 31, 2014 Demonstration of compliance with the open phase condition criteria through analysis or identify appropriate actions required to demonstrate compliance.
- December 31, 2016 Implementation of design changes, if necessary, to comply with the open phase condition criteria. The “active” actuation features of new technology designs may be installed in a monitoring mode, with adequate justification, to demonstrate reliability.
- December 31, 2017 If a monitoring period was deemed necessary, completion of any design adjustments identified during the monitoring period and enabling all “active” actuation features needed to demonstrate compliance with the open phase condition criteria.
- UFSAR Updates – Completion in conjunction with the timelines noted above, but no later than December 31, 2017.
- Technical Specification Updates – Submitted by December 31, 2017, if required. If a TSTF Traveler is available, submitted within six months of issuance of an NRC approved TSTF Traveler.

This schedule assumes License Amendments are not required to install any design changes.

Open Phase Condition Initiative

Questions / Discussion