Open Phase Solution Functional Requirements and Issue Closeout

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January 14, 2014

Open Phase Solution Functional Requirements – Requirement 1

The **[electric power system]** design should address single failure criteria as outlined in the GDCs or the principal design criteria specified in the updated final safety analysis report for the specific nuclear power plant (i.e., for an OPC, a non-Class 1E circuit should not preclude the onsite electrical power system from being able to perform its safety function given a single failure in the onsite power system).

Functional Requirement 1 (Continued)

Failure modes for electric power system designs

OPIS	Offsite Power System	Onsite Power System
Functional	Single failure – OPC – inoperable – affected circuit(s) isolated by OPIS	Operable – affected division(s) – standby power
Functional	Operable	Single failure – Single train inoperable
Single failure – non-functional (unable to isolate an OPC – failure annunciated in MCR)	Affected circuit(s) – declared inoperable in accordance with applicable TS	Operable
Single failure – non-functional (spuriously isolates)	Inoperable – associated circuit(s) – isolated	Operable – affected division(s) – standby power

Functional Requirement 2

The OPC should be automatically detected and alarmed in the main control room under all operating electrical system configurations and loading conditions.

Functional Requirements – Requirement 3

If offsite power circuits are degraded due to OPC, the power source should be transferred automatically to the onsite power system within the time assumed in the accident analysis and without actuating any protective devices, given a concurrent design basis event.

Functional Requirement 4

TS Surveillance Requirement and Limiting Condition of Operation for equipment used for mitigation of OPC should be consistent with the operability requirements specified in the existing plant TSs.

Issue Closeout
Elements of the NEI OPC Initiative

- Demonstrate compliance with the NEI open phase condition (OPC) Initiative criteria through analysis or alternatively actions required to demonstrate compliance with the NEI OPC Initiative are identified and tracked in the corrective action program. **12/31/14**
- Design changes, if necessary, to comply with the NEI OPC Initiative criteria will be implemented. The "active" actuation features of new technology designs may be installed in a monitoring mode, with adequate justification, to demonstrate reliability. **12/31/16**
- Necessary design adjustments identified during the monitoring period, if applicable, are implemented and all "active" actuation features needed to demonstrate compliance with the OPC Initiative criteria will be enabled. **12/31/17**
- Updated Final Safety Analysis Report (UFSAR) Updates and associated Technical Specifications Bases changes will be completed. **12/31/17**

Issue Closeout (continued)

- Analyses for NRC audits/inspections
  - Plant-specific documentation to support design
  - Failure modes analysis
- Close-out letter to the NRC when full OPC resolution is achieved.
  - Update to Bulletin response?
  - NRC sending 50.54(f) letter?
  - Other method?