

Project 2007-09 Generator Verification Implementation Plan

Implementation Plan for PRC-024-1, Generator Performance During Frequency and Voltage Excursions

Approvals Requested:

PRC-024-1 – Generator Performance During Frequency and Voltage Excursions

Definitions:

~~**Frequency Excursion**—an exceedance of system frequency beyond a continuous operating band; 60±0.5 Hertz.~~

~~**Voltage Excursion**—an exceedance of system voltage beyond a continuous operating band; ±5% of scheduled voltage. None~~

Prerequisite Approvals

None

Revisions to Approved Standards and Definitions

None

Compliance with the Standard

The following entities are responsible for being compliant with all requirements of PRC-024-1:

- Generator Owner

Effective Date

~~Each Generator Owner shall verify that at least 33 percent of its applicable units are fully compliant with Requirements R1, R2, R3, R4, and R6 by the first day of the first calendar quarter one year following applicable regulatory approval; or, in those jurisdictions where no regulatory approval is required, the first day of the first calendar quarter one year following Board of Trustees adoption.~~

Each Generator Owner shall verify that at least 66 percent of its applicable units are fully compliant with Requirements R1, R2, R3, R4, and R6 by the first day of the first calendar quarter two years following applicable regulatory approval; or, in those jurisdictions where no regulatory approval is required, the first day of the first calendar quarter two years following Board of Trustees adoption.

Each Generator Owner shall verify that 100 percent of its applicable units are fully compliant with Requirements R1, R2, R3, R4, and R6 by the first day of the first calendar quarter three years following applicable regulatory approval; or, in those jurisdictions where no regulatory approval is required, the first day of the first calendar quarter three years following Board of Trustees adoption.

Requirement R5 shall be effective on the first day of the first calendar quarter six years following applicable regulatory approval; or, in those jurisdictions where no regulatory approval is required, the first day of the first calendar quarter six years following Board of Trustees adoption.

~~The first day of the first calendar quarter one year following applicable regulatory approval; or, in those jurisdictions where no regulatory approval is required, the first day of the first calendar quarter one year following Board of Trustees adoption:~~

- ~~• Each Generator Owner shall verify at least 33% applicable units fully compliant with this standard.~~

~~The first day of the first calendar quarter two years following applicable regulatory approval; or, in those jurisdictions where no regulatory approval is required, the first day of the first calendar quarter two years following Board of Trustees adoption:~~

- ~~• Each Generator Owner shall verify at least 66% applicable units fully compliant with this standard.~~

~~The first day of the first calendar quarter three years following applicable regulatory approval; or, in those jurisdictions where no regulatory approval is required, the first day of the first calendar quarter three years following Board of Trustees adoption:~~

- ~~• Each Generator Owner shall verify 100% applicable units fully compliant with this standard~~

~~The phasing allows Generator Owners to effect any needed changes to the protective system settings during normally scheduled outages.~~

According to its Implementation Plan, PRC-006-1, Requirement R4 (see project 2007-01, Underfrequency Load Shedding) does not become effective until PRC-024 becomes effective. Upon the effective date of PRC-024-1, R4 of PRC-006-1, ~~R4~~ will also go into effect.

Justification of Phasing

Requirements R1, R2, R3, R4, and R6 involve evaluation of existing protection system settings and equipment capabilities. Typically, generator protection system setting changes are made during scheduled generator outages. The Implementation Plan allows a three-year window for these changes to be made which corresponds to typical outage cycles. Generating units that have outage cycles that extend longer than three years are not typically base loaded and offer opportunities to effect protection system settings changes during economic shut down periods.

Requirement R5 involves the performance of complete generation facilities (i.e. the prime mover, its fuel supply, and all auxiliary systems). To date, most Generator Owners have not specified this type of performance and the engineering companies designing generating facilities have not designed the facilities to ride through frequency and voltage excursions of the severity specified in PRC-024. In order to allow Generator Owners and architect/engineering companies time to develop new designs to meet R5, the SDT allows six years from regulatory approval for implementation.