

## Implementation Plan

### Project 2007-09 Generator Verification

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

##### *Approvals Required*

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

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 will also go into effect.

##### *Prerequisite Approvals*

None

##### *Revisions to Glossary Terms*

None

##### *Applicable Entities*

Generator Owner

##### *Conforming Changes to Other Standards*

None

##### *Effective Dates*

In those jurisdictions where regulatory approval is required:

- o By the first day of the first calendar quarter, two calendar years following applicable regulatory approval, each Generator Owner shall have verified at least 40 percent of its applicable Facilities are fully compliant with Requirements R1, R2, R3, R4, and R6.
- o By the first day of the first calendar quarter, three calendar years following applicable regulatory approval, each Generator Owner shall have verified at least 60 percent of its applicable Facilities are fully compliant with Requirements R1, R2, R3, R4, and R6.

- By the first day of the first calendar quarter, four calendar years following applicable regulatory approval, each Generator Owner shall have verified at least 80 percent of its applicable Facilities are fully compliant with Requirements R1, R2, R3, R4, and R6.
- By the first day of the first calendar quarter, five calendar years following applicable regulatory approval, each Generator Owner shall have verified 100 percent of its applicable Facilities are fully compliant with Requirements R1, R2, R3, R4, and R6.
- By the first day of the first calendar quarter, six calendar years following applicable regulatory approval, each Generator Owner shall have verified 100 percent of its applicable Facilities are fully compliant with Requirement R5.

In those jurisdictions where regulatory approval is not required:

- By the first day of the first calendar quarter, two calendar years following Board of Trustees approval, each Generator Owner shall have verified at least 40 percent of its applicable Facilities are fully compliant with Requirements R1, R2, R3, R4, and R6.
- By the first day of the first calendar quarter, three calendar years following Board of Trustees approval, each Generator Owner shall have verified at least 60 percent of its applicable Facilities are fully compliant with Requirements R1, R2, R3, R4, and R6.
- By the first day of the first calendar quarter, four calendar years following Board of Trustees approval, each Generator Owner shall have verified at least 80 percent of its applicable Facilities are fully compliant with Requirements R1, R2, R3, R4, and R6.
- By the first day of the first calendar quarter, five calendar years following Board of Trustees approval, each Generator Owner shall have verified 100 percent of its applicable Facilities are fully compliant with Requirements R1, R2, R3, R4, and R6.
- By the first day of the first quarter, six calendar years following Board of Trustees approval, each Generator Owner shall have verified 100 percent of its applicable Facilities are fully compliant with Requirement R5.

~~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.~~

### *Retirements*

None

### *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~~five-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~~five 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.