Welcome to the Generator Operations section of the PJM Manual for Generator Operational Requirements. In this section you will find the following information:

- Description of the dispatching process (see "Dispatching of Generation").
- Switching requirements for all equipment a Generator Resource owns, operates or controls (see "Switching Requirements").
- Generator information and reporting requirements (see "Critical Information and Reporting Requirements").
- Requirements and procedures for Generator synchronization and disconnect (see "Synchronization and Disconnection Procedures").

### 7.1 Dispatching of Generation

#### 7.1.1 Generator Real-Power Control

The Generator must deliver the electric energy generated by the facility to PJM at the point(s) of interconnection in the form of 3 phase, 60-Hertz alternating current at the nominal system voltage at the point of interconnection.

Generators and their protective systems (relaying, V/Hz, etc.), larger than 20 MW, should meet the frequency guidelines listed in Manual M36, System Restoration, Section 2.3, to coordinate with system preservation under-frequency load shedding. Additionally, generators and their protective systems should be capable of operation at over-frequency up to 62 Hz for a limited duration.

At no time shall the operation of the generating facility, including the associated generators or any of their auxiliary devices, result in an electrical output in which harmonic distortion exceeds the recommended limits contained in IEEE Standard 519, which defines voltage waveform and harmonic content.

The generator shall operate on unrestricted governor control to assist in maintaining interconnection frequency, except for the period immediately before being removed from service and immediately after being placed in service. **With exception of nuclear generators, all generating resources with gross plant / facility aggregate nameplate rating greater than 75 MVA should ensure that, in the absence of technical or operational considerations, the generator governor and Distributed Control System (DCS) settings provide dead bands that do not exceed +/- 36 mHz, and droop settings that do not exceed 5%. Exceptions to this criteria shall be forwarded to PJM for review.** Governor outages during periods of operations must be kept to a minimum and must be immediately reported to PJM. When a generator governor is not available, the unit output should not fluctuate from pre-scheduled output unless otherwise directed.

System conditions permitting, Generators must respond immediately to a PJM request directing a change in generation output and must proceed at a rate which is within 2% of the generator’s stated ramp-rate, until the prescribed output is reached.