

Glossary of Terms

ACE Diversity Interchange (ADI)

A frequency neutral exchange program where multiple participating Balancing Authorities utilize it to achieve reductions in their generation control and Reporting ACE through offsets to either Actual Net Interchange or Scheduled Net Interchange ACE components to create an ACE value closer to zero for each participant.

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Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Actual Frequency (FA)

The Interconnection frequency measured in Hertz (Hz)

BOT Adoption Date: February 11, 2016

Effective Date: July 01, 2016

FERC Filing Date: April 06, 2017

FERC Docket No.: RM16-13-000

FERC Approval Date: September 20, 2017

Project No.: [2010-14.2.1 Phase 2 of Balancing Authority Reliability-based Controls](#)

Actual Net Interchange NI_A

The algebraic sum of actual megawatt transfers across all Tie Lines, including Pseudo-Ties, to and from all adjacent Balancing Authority Areas within the same Interconnection. Actual megawatt transfers on asynchronous DC tie lines that are directly connected to another Interconnection are excluded from Actual Net Interchange.

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Adequacy

The ability of the electric system to supply the aggregate electrical demand and energy requirements of the end-use customers at all times, taking into account scheduled and reasonably expected unscheduled outages of system elements.

BOT Adoption Date: February 08, 2005

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FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Adjacent Balancing Authority

A Balancing Authority whose Balancing Authority Area is interconnected with another Balancing Authority Area either directly or via a multi-party agreement or transmission tariff.

BOT Adoption Date: February 06, 2014

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FERC Filing Date: February 27, 2014

FERC Approval Date: June 30, 2014

FERC Docket No.: RD14-4-000

Project No.: 2008-12

Adverse Reliability Impact

The impact of an event that results in frequency-related instability; unplanned tripping of load or generation; or uncontrolled separation or cascading outages that affects a widespread area of the Interconnection.

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: Coordinate Operations

After the Fact (ATF)

A time classification assigned to an RFI when the submittal time is greater than one hour after the start time of the RFI.

BOT Adoption Date: October 29, 2008

Effective Date: July 01, 2010

FERC Filing Date: February 05, 2009

FERC Approval Date: December 17, 2009

FERC Docket No.: RM09-8-000

Project No.: 2007-14

Agreement

A contract or arrangement, either written or verbal and sometimes enforceable by law.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Alternative Interpersonal Communication

Any Interpersonal Communication that is able to serve as a substitute for, and does not utilize the same infrastructure (medium) as, Interpersonal Communication used for day-to-day operation.

BOT Adoption Date: November 07, 2012

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FERC Filing Date: May 14, 2014

FERC Approval Date: April 16, 2015

FERC Docket No.: RM14-13-000

Project No.: 2006-06

Altitude Correction Factor

A multiplier applied to specify distances, which adjusts the distances to account for the change in relative air density (RAD) due to altitude from the RAD used to determine the specified distance. Altitude correction factors apply to both minimum worker approach distances and to minimum vegetation clearance distances.

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: 2007-07

Ancillary Service

Those services that are necessary to support the transmission of capacity and energy from resources to loads while maintaining reliable operation of the Transmission Service Provider's transmission system in accordance with good

utility practice. (From FERC order 888-A.)

BOT Adoption Date: February 08, 2005

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FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Anti-Aliasing Filter

An analog filter installed at a metering point to remove the high frequency components of the signal over the AGC sample period.

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FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Area Control Error (ACE)

The instantaneous difference between an entity's Actual Net Interchange (NIA) and Scheduled Net Interchange (NIS), taking into account the effects of Frequency Bias, of correction for meter error, and of Inadvertent Interchange Management (IIM) if operating in the IIM mode. For compliance usage, refer to the term Reporting ACE.

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Area Interchange Methodology

The Area Interchange methodology is characterized by determination of incremental transfer capability via simulation, from which Total Transfer Capability (TTC) can be mathematically derived. Capacity Benefit Margin, Transmission Reliability Margin, and Existing Transmission Commitments are subtracted from the TTC, and Postbacks and counterflows are added, to derive Available Transfer Capability. Under the Area Interchange Methodology, TTC results are generally reported on an area to area basis.

BOT Adoption Date: August 22, 2008

Effective Date: April 01, 2011

FERC Filing Date: August 29, 2008

FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Arranged Interchange

The state where a Request for Interchange (initial or revised) has been submitted for approval.

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FERC Docket No.: RD14-4-000

Project No.: 2008-12

Attaining Balancing Authority

A Balancing Authority bringing generation or load into its effective control boundaries through a Dynamic Transfer from the Native Balancing Authority.

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FERC Filing Date: February 27, 2014

FERC Approval Date: June 30, 2014

FERC Docket No.: RD14-4-000

Project No.: 2008-12

Automatic Generation Control (AGC)

A process designed and used to adjust a Balancing Authority Area's Demand and resources to help maintain the Reporting ACE in that Balancing Authority Area within the bounds required by applicable NERC Reliability Standards.

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Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Automatic Generation Control (WECC term) (AGC)

Means equipment that automatically adjusts a Control Area's generation from a central location to maintain its interchange schedule plus Frequency Bias.

BOT Adoption Date: March 12, 2007

Effective Date: July 01, 2007

FERC Approval Date: June 08, 2007

Project No.: [WECC](#)

Automatic Time Error Correction (ATEC)

The addition of a component, represented by the term IATEC, to the Reporting ACE equation for the Western Interconnection that modifies the control point for the purpose of continuously paying back Primary Inadvertent Interchange and to correct Time Error. Automatic Time Error Correction is only applicable in the Western Interconnection. ATEC shall be zero when operating in any other AGC mode.

The absolute value of IATEC shall not exceed LMax.

$$I_{ATEC} = \frac{PII_{accum}^{on/off\ peak}}{(1-Y) \cdot H}$$

IATEC shall be zero when operating in any other AGC mode.

- Lmax is the maximum value allowed for IATEC set by each BA between $0.2 \cdot |B_i|$ and L10; i.e. $0.2 \cdot |B_i| \leq L_{max} \leq L10$.

- $$L_{10} = 1.65 \cdot \epsilon_{10} \cdot \frac{\sqrt{(-10B_i)(-10B_s)}}$$

- ϵ_{10} is a constant derived from the targeted frequency bound. It is the targeted rootmean-square (RMS) value of ten-minute average Frequency Error based on frequency performance over a given year. The bound, ϵ_{10} , is the same for every Balancing Authority Area within an Interconnection.
- $Y = B_i/B_s$.
- H = Number of hours used to pay back primary Inadvertent Interchange energy. The value of H is set to 3.
- B_i = Frequency Bias Setting for the Balancing Authority Area (MW/0.1 Hz).
- B_s = Sum of the Frequency Bias Settings for the Interconnection (MW/0.1 Hz). For entities with a variable Frequency Bias, the annual time weighted average FBS based on the one minute values used in BAL-001 when frequency is greater than 60.036Hz or less than 59.964 Hz.

- $$PII_{hourly} = (1-Y) \cdot (I_{actual} - B_i) \cdot \frac{\Delta TE}{6} \cdot BA_{island}$$

- BA_{island} = Binary term: 1 indicates the BA is interconnected; 0 indicates the BA is entirely islanded and not interconnected. I_{actual} is the hourly Inadvertent Interchange for the last hour.

- ΔTE is the hourly change in system Time Error as distributed by the Interconnection time monitor, where:

$$\Delta TE = TE_{\text{end hour}} - TE_{\text{begin hour}} - TD_{\text{adj}} - t * (TE_{\text{offset}})$$

- TD_{adj} is the Reliability Coordinator adjustment for differences with Interconnection time monitor control center clocks.
- t is the number of minutes spent performing manual Time Error Correction that occurred during each hour.
- TE_{offset} is 0.000 or +0.020 or -0.020.
- PII_{accum} is the Balancing Authority Area's accumulated PII_{hourly} in MWh. An On-Peak and Off Peak accumulation accounting is required, where:

$$PII_{\text{accum}}^{\text{on/offpeak}} = \text{last period's } PII_{\text{accum}}^{\text{on/offpeak}} + PII_{\text{hourly}}$$

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Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Automatic Time Error Correction (WECC term) (ATEC)

The addition of a component to the ACE equation that modifies the control point for the purpose of continuously paying back Primary Inadvertent Interchange to correct accumulated time error.

BOT Adoption Date: December 19, 2012

Effective Date: April 01, 2014

FERC Approval Date: October 16, 2013

Project No.: [WECC](#)

Available Flowgate Capability (AFC)

A measure of the flow capability remaining on a Flowgate for further commercial activity over and above already committed uses. It is defined as TFC less Existing Transmission Commitments (ETC), less a Capacity Benefit Margin, less a Transmission Reliability Margin, plus Postbacks, and plus counterflows.

BOT Adoption Date: August 22, 2008

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FERC Filing Date: August 29, 2008

FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Available Transfer Capability (ATC)

A measure of the transfer capability remaining in the physical transmission network for further commercial activity over and above already committed uses. It is defined as Total Transfer Capability less Existing Transmission Commitments (including retail customer service), less a Capacity Benefit Margin, less a Transmission Reliability Margin, plus Postbacks, plus counterflows.

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FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Available Transfer Capability Implementation Document (ATCID)

A document that describes the implementation of a methodology for calculating ATC or AFC, and provides information related to a Transmission Service Provider's calculation of ATC or AFC.

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FERC Filing Date: August 29, 2008

FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Balancing Authority

The responsible entity that integrates resource plans ahead of time, maintains Demand and resource balance within a Balancing Authority Area, and supports Interconnection frequency in real time.

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FERC Docket No.: RM16-13-000

Project No.: [2010-14.2.1 Phase 2 of Balancing Authority Reliability-based Controls](#)

Balancing Authority Area (BAA)

The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.

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Balancing Contingency Event (BCE)

Any single event described in Subsections (A), (B), or (C) below, or any series of such otherwise single events, with each separated from the next by one minute or less.

A. Sudden loss of generation due to:

- i. unit tripping, or
- ii. loss of generator Facility resulting in isolation of the generator from the Bulk Electric System or from the responsible entity's System, or
- iii. sudden unplanned outage of transmission Facility;

And, that causes an unexpected change to the responsible entity's ACE

B. Sudden loss of an Import, due to forced outage of transmission equipment that causes an unexpected imbalance between generation and Demand on the Interconnection.

C. Sudden restoration of a Demand that was used as a resource that causes an unexpected change to the responsible entity's ACE.

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Base Load

The minimum amount of electric power delivered or required over a given period at a constant rate.

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BES Cyber Asset (BCA)

A Cyber Asset or Virtual Cyber Asset that, if rendered unavailable, degraded, or misused would, within 15 minutes of its required operation, misoperation, or non-operation, adversely impact one or more Facilities, systems, or equipment, which, if destroyed, degraded, or otherwise rendered unavailable when needed, would affect the Reliable Operation of the Bulk Electric System (BES). Redundancy of affected Facilities, systems, and equipment shall not be considered when determining adverse impact. Each BES Cyber Asset is included in one or more BES Cyber Systems.

BOT Adoption Date: May 09, 2024

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FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

BES Cyber Asset (BCA)

A Cyber Asset that if rendered unavailable, degraded, or misused would, within 15 minutes of its required operation, misoperation, or non-operation, adversely impact one or more Facilities, systems, or equipment, which, if destroyed, degraded, or otherwise rendered unavailable when needed, would affect the reliable operation of the Bulk Electric System. Redundancy of affected Facilities, systems, and equipment shall not be considered when determining adverse impact. Each BES Cyber Asset is included in one or more BES Cyber Systems.

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FERC Docket No.: RM15-14-000

Project No.: [2014-02 Critical Infrastructure Protection Standards Version 5 Revisions](#)

BES Cyber System (BCS)

Update to Acronym only

One or more BES Cyber Assets logically grouped by a responsible entity to perform one or more reliability tasks for a functional entity.

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FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

BES Cyber System

One or more BES Cyber Assets logically grouped by a responsible entity to perform one or more reliability tasks for a functional entity.

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FERC Approval Date: November 22, 2013

Inactive Date: June 30, 2028

FERC Docket No.: RM13-5-000

Project No.: [2008-06 Cyber Security Order 706](#)

BES Cyber System Information

Information about the BES Cyber System that could be used to gain unauthorized access or pose a security threat to the BES Cyber System. BES Cyber System Information does not include individual pieces of information that by themselves do not pose a threat or could not be used to allow unauthorized access to BES Cyber Systems, such as, but not limited to, device names, individual IP addresses without context, ESP names, or policy statements. Examples of BES Cyber System Information may include, but are not limited to, security procedures or security information about BES Cyber Systems, Physical Access Control Systems, and Electronic Access Control or Monitoring Systems that is not publicly available and could be used to allow unauthorized access or unauthorized distribution; collections of network addresses; and network topology of the BES Cyber System.

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FERC Docket No.: RM13-5-000

Project No.: [2008-06 Cyber Security Order 706](#)

BES Cyber System Information (BCSI)

Information about the BES Cyber System (BCS) that could be used to gain unauthorized access or pose a security threat to the BCS. BES Cyber System Information (BCSI) does not include individual pieces of information that by themselves do not pose a threat or could not be used to allow unauthorized access to BCS, such as, but not limited to, device names, individual IP addresses without context, Electronic Security Perimeter names, or policy statements. Examples of BCSI may include, but are not limited to, security procedures or security information about BCS, Shared

Cyber Infrastructure, Physical Access Control Systems, and Electronic Access Control or Monitoring Systems that is not publicly available and could be used to allow unauthorized access or unauthorized distribution; collections of network addresses; and network topology of the BCS.

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FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Blackstart Resource

A generating unit(s) and its associated set of equipment which has the ability to be started without support from the System or is designed to remain energized without connection to the remainder of the System, with the ability to energize a bus, meeting the Transmission Operator's restoration plan needs for Real and Reactive Power capability, frequency and voltage control, and that has been included in the Transmission Operator's restoration plan.

BOT Adoption Date: November 05, 2015

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FERC Docket No.: RD16-3-000

Project No.: 2015-04

Block Dispatch

A set of dispatch rules such that given a specific amount of load to serve, an approximate generation dispatch can be determined. To accomplish this, the capacity of a given generator is segmented into loadable "blocks," each of which is grouped and ordered relative to other blocks (based on characteristics including, but not limited to, efficiency, run of river or fuel supply considerations, and/or "must-run" status).

BOT Adoption Date: August 22, 2008

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FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Bulk Electric System (BES)

Unless modified by the lists shown below, all Transmission Elements operated at 100 kV or higher and Real Power and Reactive Power resources connected at 100 kV or higher. This does not include facilities used in the local distribution of electric energy.

Inclusions:

- **I1** - Transformers with the primary terminal and at least one secondary terminal operated at 100 kV or higher unless excluded by application of Exclusion E1 or E3.
- **I2** – Generating resource(s) including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100 kV or above with:
 - a) Gross individual nameplate rating greater than 20 MVA. Or,
 - b) Gross plant/facility aggregate nameplate rating greater than 75 MVA.
- **I3** -Blackstart Resources identified in the Transmission Operator’s restoration plan.
- **I4** -Dispersed power producing resources that aggregate to a total capacity greater than 75 MVA (gross nameplate rating), and that are connected through a system designed primarily for delivering such capacity to a common point of connection at a voltage of 100 kV or above. Thus, the facilities designated as BES are:
 - a) The individual resources, and
 - b) The system designed primarily for delivering capacity from the point where those resources aggregate to greater than 75 MVA to a common point of connection at a voltage of 100 kV or above.
- **I5** –Static or dynamic devices (excluding generators) dedicated to supplying or absorbing Reactive Power that are connected at 100 kV or higher, or through a dedicated transformer with a high-side voltage of 100 kV or higher, or through a transformer that is designated in Inclusion I1 unless excluded by application of Exclusion E4

Exclusions:

- **E1** -Radial systems: A group of contiguous transmission Elements that emanates from a single point of connection of 100 kV or higher and:
 - a) Only serves Load. Or,
 - b) Only includes generation resources, not identified in Inclusions I2, I3, or I4, with an aggregate capacity less than or equal to 75 MVA (gross nameplate rating). Or,
 - c) Where the radial system serves Load and includes generation resources, not identified in Inclusions I2, I3 or I4, with an aggregate capacity of non-retail generation less than or equal to 75 MVA (gross nameplate rating).

Note 1 – A normally open switching device between radial systems, as depicted on prints or one-line diagrams for example, does not affect this exclusion.

Note 2 – The presence of a contiguous loop, operated at a voltage level of 50 kV or less, between configurations being considered as radial systems, does not affect this exclusion.

- **E2** - A generating unit or multiple generating units on the customer’s side of the retail meter that serve all or part of the retail Load with electric energy if: (i) the net capacity provided to the BES does not exceed 75 MVA, and (ii) standby, back-up, and maintenance power services are provided to the generating unit or multiple generating units or to the retail Load by a Balancing Authority, or provided pursuant to a binding obligation with a Generator Owner or Generator Operator, or under terms approved by the applicable regulatory authority.

• **E3** - Local networks (LN): A group of contiguous transmission Elements operated at less than 300 kV that distribute power to Load rather than transfer bulk power across the interconnected system. LN's emanate from multiple points of connection at 100 kV or higher to improve the level of service to retail customers and not to accommodate bulk power transfer across the interconnected system. The LN is characterized by all of the following:

a) Limits on connected generation: The LN and its underlying Elements do not include generation resources identified in Inclusions I2, I3, or I4 and do not have an aggregate capacity of non-retail generation greater than 75 MVA (gross nameplate rating);

b) Real Power flows only into the LN and the LN does not transfer energy originating outside the LN for delivery through the LN; and c) Not part of a Flowgate or transfer path: The LN does not contain any part of a permanent Flowgate in the Eastern Interconnection, a major transfer path within the Western Interconnection, or a comparable monitored Facility in the ERCOT or Quebec Interconnections, and is not a monitored Facility included in an Interconnection Reliability Operating Limit (IROL).

• **E4** – Reactive Power devices installed for the sole benefit of a retail customer(s).

Note - Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process.

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Project No.: 2010-17

Bulk-Power System

(A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and

(B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy. (Note that the terms “Bulk-Power System” or “Bulk Power System” shall have the same meaning.)

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FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Burden

Operation of the Bulk Electric System that violates or is expected to violate a System Operating Limit or Interconnection Reliability Operating Limit in the Interconnection, or that violates any other NERC, Regional Reliability Organization, or local operating reliability standards or criteria.

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Bus-tie Breaker

A circuit breaker that is positioned to connect two individual substation bus configurations.

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FERC Approval Date: October 17, 2013

FERC Docket No.: RM12-1-000

Project No.: 2006-02

Capacity Benefit Margin (CBM)

The amount of firm transmission transfer capability preserved by the transmission provider for Load-Serving Entities (LSEs), whose loads are located on that Transmission Service Provider's system, to enable access by the LSEs to generation from interconnected systems to meet generation reliability requirements. Preservation of CBM for an LSE allows that entity to reduce its installed generating capacity below that which may otherwise have been necessary without interconnections to meet its generation reliability requirements. The transmission transfer capability preserved as CBM is intended to be used by the LSE only in times of emergency generation deficiencies.

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FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000-Version 0 Reliability Standards](#)

Capacity Benefit Margin Implementation Document (CBMID)

A document that describes the implementation of a Capacity Benefit Margin methodology.

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FERC Filing Date: August 29, 2008

FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Capacity Emergency

A capacity emergency exists when a Balancing Authority Area's operating capacity, plus firm purchases from other systems, to the extent available or limited by transfer capability, is inadequate to meet its demand plus its regulating requirements.

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FERC Approval Date: March 16, 2007

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Project No.: 2015-04

Cascading

The uncontrolled successive loss of System Elements triggered by an incident at any location. Cascading results in widespread electric service interruption that cannot be restrained from sequentially spreading beyond an area predetermined by studies.

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FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

CIP Exceptional Circumstance

A situation that involves or threatens to involve one or more of the following, or similar, conditions that impact safety or BES reliability: a risk of injury or death; a natural disaster; civil unrest; an imminent or existing hardware, software, or equipment failure; a Cyber Security Incident requiring emergency assistance; a response by emergency services; the enactment of a mutual assistance agreement; or an impediment of large scale workforce availability.

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Project No.: [2008-06 Cyber Security Order 706](#)

CIP Senior Manager

A single senior management official with overall authority and responsibility for leading and managing implementation of and continuing adherence to the requirements within the NERC CIP Standards, CIP-002 through CIP-011.

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Project No.: [2008-06 Cyber Security Order 706](#)

CIP Senior Manager

A single senior management official with overall authority and responsibility for leading and managing implementation of and continuing adherence to the requirements within the NERC Critical Infrastructure Protection Cyber Security Standards.

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Project No.: [2016-02 Modifications to CIP Standards](#)

Clock Hour

The 60-minute period ending at :00. All surveys, measurements, and reports are based on Clock Hour periods unless specifically noted.

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FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Cogeneration

Production of electricity from steam, heat, or other forms of energy produced as a by-product of another process.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Commercial Operation (WECC term)

Achievement of this designation indicates that the Generator Operator or Transmission Operator of the synchronous generator or synchronous condenser has received all approvals necessary for operation after completion of initial start-up testing.

BOT Adoption Date: October 29, 2008

Effective Date: July 01, 2011

FERC Approval Date: April 21, 2011

Project No.: [WECC](#)

Compliance Monitor

The entity that monitors, reviews, and ensures compliance of responsible entities with reliability standards.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Composite Confirmed Interchange

The energy profile (including non-default ramp) throughout a given time period, based on the aggregate of all Confirmed Interchange occurring in that time period.

BOT Adoption Date: February 06, 2014

Effective Date: October 01, 2014

FERC Filing Date: February 27, 2014

FERC Approval Date: June 30, 2014

FERC Docket No.: RD14-4-000

Project No.: 2008-12

Composite Protection System

The total complement of Protection System(s) that function collectively to protect an Element. Backup protection provided by a different Element's Protection System(s) is excluded.

BOT Adoption Date: August 14, 2014

Effective Date: July 01, 2016

FERC Filing Date: September 15, 2014

FERC Approval Date: May 13, 2015

FERC Docket No.: RD14-14-000

Project No.: 2010-05.1

Confirmed Interchange

The state where no party has denied and all required parties have approved the Arranged Interchange.

BOT Adoption Date: February 06, 2014

Effective Date: October 01, 2014

FERC Filing Date: February 27, 2014

FERC Approval Date: June 30, 2014

FERC Docket No.: RD14-4-000

Project No.: 2008-12

Congestion Management Report

A report that the Interchange Distribution Calculator issues when a Reliability Coordinator initiates the Transmission Loading Relief procedure. This report identifies the transactions and native and network load curtailments that must be initiated to achieve the loading relief requested by the initiating Reliability Coordinator.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Consequential Load Loss

All Load that is no longer served by the Transmission system as a result of Transmission Facilities being removed from service by a Protection System operation designed to isolate the fault.

BOT Adoption Date: August 04, 2011

Effective Date: January 01, 2015

FERC Filing Date: October 19, 2011

FERC Approval Date: October 17, 2013

FERC Docket No.: RM12-1-000

Project No.: 2006-02

Constrained Facility

A transmission facility (line, transformer, breaker, etc.) that is approaching, is at, or is beyond its System Operating Limit or Interconnection Reliability Operating Limit.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Contact Path

An agreed upon electrical path for the continuous flow of electrical power between the parties of an Interchange Transaction.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Contingency

The unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch or other electrical element.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Contingency Event Recovery Period

A period that begins at the time that the resource output begins to decline within the first one-minute interval of a Reportable Balancing Contingency Event, and extends for fifteen minutes thereafter.

BOT Adoption Date: November 05, 2015

Effective Date: January 01, 2018

FERC Filing Date: January 29, 2016

FERC Approval Date: January 19, 2017

Contingency Reserve

The provision of capacity that may be deployed by the Balancing Authority to respond to a Balancing Contingency Event and other contingency requirements (such as Energy Emergency Alerts as specified in the associated EOP standard). A Balancing Authority may include in its restoration of Contingency Reserve readiness to reduce Firm Demand and include it if, and only if, the Balancing Authority:

- is experiencing a Reliability Coordinator declared Energy Emergency Alert level, and is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan.
- is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan.

BOT Adoption Date: November 05, 2015

Effective Date: January 01, 2018

FERC Filing Date: January 29, 2016

FERC Approval Date: January 19, 2017

FERC Docket No.: RM16-7-000

Project No.: [2010-14.1 Phase 1 of Balancing Authority Reliability-based Controls: Reserves](#)

Contingency Reserve Restoration Period

A period not exceeding 90 minutes following the end of the Contingency Event Recovery Period.

BOT Adoption Date: November 05, 2015

Effective Date: January 01, 2018

FERC Filing Date: March 08, 2024

FERC Approval Date: January 19, 2017

FERC Docket No.: RM16-7-000

Project No.: [2010-14.1 Phase 1 of Balancing Authority Reliability-based Controls: Reserves](#)

Control Center

One or more facilities hosting operating personnel that monitor and control the Bulk Electric System (BES) in real-time to perform the reliability tasks, including their associated data centers, of: 1) a Reliability Coordinator, 2) a Balancing Authority, 3) a Transmission Operator for transmission Facilities at two or more locations, or 4) a Generator Operator for generation Facilities at two or more locations. OR One or more facilities of a Transmission Owner that have the capability to control transmission Facilities at two or more locations in real-time using Supervisory Control and Data Acquisition (SCADA), including their associated data centers, and excluding field Cyber Assets used for telemetry.

BOT Adoption Date: December 10, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Control Center

One or more facilities hosting operating personnel that monitor and control the Bulk Electric System (BES) in real-time to perform the reliability tasks, including their associated data centers, of: 1) a Reliability Coordinator, 2) a Balancing Authority, 3) a Transmission Operator for transmission Facilities at two or more locations, or 4) a Generator Operator for generation Facilities at two or more locations.

BOT Adoption Date: November 26, 2012

Effective Date: July 01, 2016

FERC Filing Date: January 31, 2013

FERC Approval Date: November 22, 2013

Inactive Date: June 30, 2028

FERC Docket No.: RM13-5-000

Project No.: [2008-06 Cyber Security Order 706](#)

Control Performance Standard (CPS)

Methodology of controlling Reporting ACE relative to Frequency Error, expressed as a moving average subject to a limit. It is used as an indicator of sufficient secondary AGC control to maintain energy balance and Scheduled Frequency.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Corrective Action Plan

A list of actions and an associated timetable for implementation to remedy a specific problem.

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

Cranking Path

A portion of the electric system that can be isolated and then energized to deliver electric power from a generation source to enable the startup of one or more other generating units.

BOT Adoption Date: May 02, 2006

Effective Date: June 18, 2007

FERC Filing Date: February 23, 2007

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: Phase III-IV Planning Standards

Current Zero Time (NPCC term)

The time of the final current zero on the last phase to interrupt.

BOT Adoption Date: November 04, 2010

Effective Date: October 20, 2013

FERC Approval Date: October 20, 2011

Project No.: [NPCC](#)

Curtailment

A reduction in the scheduled capacity or energy delivery of an Interchange Transaction.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

Project No.: [000 - Version 0 Reliability Standards](#)

Curtailment Threshold

The minimum Transfer Distribution Factor which, if exceeded, will subject an Interchange Transaction to curtailment to relieve a transmission facility constraint.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

Cyber Assets

Programmable electronic devices, including the hardware, software, and data in those devices.

BOT Adoption Date: November 26, 2012

Effective Date: July 01, 2016

FERC Filing Date: January 31, 2013

FERC Approval Date: November 22, 2013

Inactive Date: June 30, 2028

FERC Docket No.: RM13-5-000

Project No.: [2008-06 Cyber Security Order 706](#)

Cyber Assets

Programmable electronic devices, excluding Shared Cyber Infrastructure, including the hardware, software, and data in those devices. Application containers are considered software of Virtual Cyber Assets (VCAs) or Cyber Assets. VCAs are not considered software or data of Cyber Assets.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Cyber Security Incident

A malicious act or suspicious event that: -For a high or medium impact BES Cyber System, compromises or attempts to compromise (1) an Electronic Security Perimeter, (2) a Physical Security Perimeter, or (3) an Electronic Access Control or Monitoring System; or -Disrupts or attempts to disrupt the operation of a BES Cyber System.

BOT Adoption Date: February 07, 2019

Effective Date: January 01, 2021

FERC Filing Date: March 07, 2019

FERC Approval Date: June 20, 2019

Inactive Date: June 30, 2028

FERC Docket No.: RD19-3-000

Project No.: [2018-02 Modifications to CIP-008 Cyber Security Incident Reporting](#)

Cyber Security Incident

A malicious act or suspicious event that: • For a high or medium impact BES Cyber System (BCS), compromises or attempts to compromise (1) an Electronic Security Perimeter, (2) a Physical Security Perimeter, (3) an Electronic Access Control or Monitoring Systems; or (4) Shared Cyber Infrastructure; or • Disrupts or attempts to disrupt the operation of a BCS.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Cyber System

One or more Cyber Assets, Virtual Cyber Assets, or Shared Cyber Infrastructure.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Delayed Fault Clearing

Fault clearing consistent with correct operation of a breaker failure protection system and its associated breakers, or of a backup protection system with an intentional time delay.

BOT Adoption Date: November 01, 2006

Effective Date: July 01, 2008

FERC Filing Date: November 15, 2006

FERC Approval Date: December 27, 2007

FERC Docket No.: RM07-3-000

Project No.: Determine Facility Ratings, Operating limits, and Transfer Capabilities

Demand

1. The rate at which electric energy is delivered to or by a system or part of a system, generally expressed in kilowatts or megawatts, at a given instant or averaged over any designated interval of time.
2. The rate at which energy is being used by the customer.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Demand-Side Management (DSM)

All activities or programs undertaken by any applicable entity to achieve a reduction in Demand.

BOT Adoption Date: May 06, 2014

Effective Date: July 01, 2016

FERC Filing Date: May 13, 2014

FERC Approval Date: February 19, 2015

FERC Docket No.: RM14-12-000

Project No.: 2010-04

Dial-up Connectivity

A data communication link that is established when the communication equipment dials a phone number and negotiates a connection with the equipment on the other end of the link.

BOT Adoption Date: November 26, 2012

Effective Date: July 01, 2016

FERC Filing Date: January 31, 2013

FERC Approval Date: November 22, 2013

FERC Docket No.: RM13-5-000

Project No.: [2008-06 Cyber Security Order 706](#)

Direct Control Load Management (DCLM)

Demand-Side Management that is under the direct control of the system operator. DCLM may control the electric supply to individual appliances or equipment on customer premises. DCLM as defined here does not include Interruptible Demand.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [2008-06 Cyber Security Order 706](#)

Dispatch Order

A set of dispatch rules such that given a specific amount of load to serve, an approximate generation dispatch can be determined. To accomplish this, each generator is ranked by priority.

BOT Adoption Date: August 22, 2008

Effective Date: April 01, 2011

FERC Filing Date: August 29, 2008

FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Dispersed Load by Substations

Substation load information configured to represent a system for power flow or system dynamics modeling purposes, or both.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000-Version 0 Reliability Standards](#)

Distributed Energy Resource (DER)

A generator or energy storage technology connected to a distribution system that is capable of providing Real Power in non-isolated parallel operation with the Bulk-Power System, including one connected behind the meter of an end-use customer that is supplied from a distribution system.

BOT Adoption Date: October 31, 2025

Effective Date: April 01, 2026

FERC Filing Date: November 04, 2025

FERC Approval Date: February 19, 2026

FERC Docket No.: RD26-1-000

Project No.: [2022-02 Uniform Modeling Framework for IBR**](#)

Distribution Factor (DF)

The portion of an Interchange Transaction, typically expressed in per unit that flows across a transmission facility (Flowgate).

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

Distribution Provider (DP)

Provides and operates the “wires” between the transmission system and the end-use customer. For those end-use customers who are served at transmission voltages, the Transmission Owner also serves as the Distribution Provider. Thus, the Distribution Provider is not defined by a specific voltage, but rather as performing the distribution function at any voltage.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Disturbance

1. An unplanned event that produces an abnormal system condition.
2. Any perturbation to the electric system.
3. The unexpected change in Reporting ACE that is caused by the sudden failure of generation or interruption of load.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Disturbance Control Standard (DCS)

The reliability standard that sets the time limit following a Disturbance within which a Balancing Authority must return its Area Control Error to within a specified range.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Disturbance Monitoring Equipment (DME)

Devices capable of monitoring and recording system data pertaining to a Disturbance. Such devices include the following categories of recorders* : • Sequence of event recorders which record equipment response to the event • Fault recorders, which record actual waveform data replicating the system primary voltages and currents. This may include protective relays. • Dynamic Disturbance Recorders (DDRs), which record incidents that portray power system behavior during dynamic events such as low-frequency (0.1 Hz – 3 Hz) oscillations and abnormal frequency or voltage excursions *Phasor Measurement Units and any other equipment that meets the functional requirements of DMEs may qualify as DMEs.

BOT Adoption Date: August 02, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: Phase III-IV Planning Standards

Dynamic Interchange Schedule or Dynamic Schedule

A time-varying energy transfer that is updated in Real-time and included in the Scheduled Net Interchange (NIS) term in the same manner as an Interchange Schedule in the affected Balancing Authorities' Reporting ACE

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Dynamic Transfer

The provision of the real-time monitoring, telemetering, computer software, hardware, communications, engineering, energy accounting (including inadvertent interchange), and administration required to electronically move all or a portion of the real energy services associated with a generator or load out of one Balancing Authority Area into another.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Economic Dispatch

The allocation of demand to individual generating units on line to effect the most economical production of electricity.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Electrical Energy

The generation or use of electric power by a device over a period of time, expressed in kilowatthours (kWh), megawatthours (MWh), or gigawatthours (GWh).

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Electronic Access Control or Monitoring Systems (EACMS)

Cyber Assets that perform electronic access control or electronic access monitoring of the Electronic Security Perimeter(s) or BES Cyber Systems. This includes Intermediate Systems.

BOT Adoption Date: November 26, 2012

Effective Date: July 01, 2016

FERC Filing Date: January 31, 2013

FERC Approval Date: November 22, 2013

Inactive Date: June 30, 2028

FERC Docket No.: RM13-5-000

Project No.: [2008-06 Cyber Security Order 706](#)

Electronic Access Control or Monitoring Systems (EACMS)

Cyber System(s) that perform electronic access control or electronic access monitoring of the Electronic Security Perimeter(s) (ESP) or BES Cyber Systems (BCS), including those not protected by an ESP used by the responsible entity to convert routable protocol communications to non-routable communications to a BCS.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Electronic Access Point (EAP)

An electronic policy enforcement point or a Cyber Asset interface on an Electronic Access Control or Monitoring Systems that controls routable communication to and from one or more BES Cyber Systems or their associated Protected Cyber Assets.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Electronic Access Point (EAP)

A Cyber Asset interface on an Electronic Security Perimeter that allows routable communication between Cyber Assets outside an Electronic Security Perimeter and Cyber Assets inside an Electronic Security Perimeter.

BOT Adoption Date: November 26, 2012

Effective Date: July 01, 2016

FERC Filing Date: January 31, 2013

FERC Approval Date: November 22, 2013

Inactive Date: June 30, 2028

FERC Docket No.: RM13-5-000

Project No.: [2008-06 Cyber Security Order 706](#)

Electronic Security Perimeter (ESP)

The logical border surrounding a network to which BES Cyber Systems are connected using a routable protocol; or a logical boundary defined by one or more Electronic Access Points.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 16, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Electronic Security Perimeter (ESP)

The logical border surrounding a network to which BES Cyber Systems are connected using a routable protocol.

BOT Adoption Date: November 26, 2012

Effective Date: July 01, 2016

FERC Filing Date: January 31, 2013

FERC Approval Date: November 22, 2013

Inactive Date: June 30, 2028

FERC Docket No.: RM13-5-000

Project No.: [2008-06 Cyber Security Order 706](#)

Element

Any electrical device with terminals that may be connected to other electrical devices such as a generator, transformer, circuit breaker, bus section, or transmission line. An Element may be comprised of one or more components.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Emergency or BES Emergency

Any abnormal system condition that requires automatic or immediate manual action to prevent or limit the failure of transmission facilities or generation supply that could adversely affect the reliability of the Bulk Electric System.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000-Version 0 Reliability Standards](#)

Emergency Rating

The rating as defined by the equipment owner that specifies the level of electrical loading or output, usually expressed in megawatts (MW) or Mvar or other appropriate units, that a system, facility, or element can support, produce, or withstand for a finite period. The rating assumes acceptable loss of equipment life or other physical or safety limitations for the equipment involved.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Emergency Request for Interchange (Emergency RFI)

Request for Interchange to be initiated for Emergency or Energy Emergency conditions.

BOT Adoption Date: October 29, 2008

Effective Date: July 01, 2010

FERC Filing Date: February 05, 2009

FERC Approval Date: December 17, 2009

FERC Docket No.: RM09-8-000

Project No.: 2007-14

Energy Emergency

A condition when a Load-Serving Entity or Balancing Authority has exhausted all other resource options and can no longer meet its expected Load obligations.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Energy Reliability Assessment (ERA)

Assessment of the resources necessary to reliably supply the Electrical Energy required to serve Demand and to provide Operating Reserves for the Bulk Power System throughout the associated assessment period.

BOT Adoption Date: December 10, 2024

Effective Date: October 01, 2026

FERC Filing Date: January 06, 2025

FERC Approval Date: February 26, 2025

FERC Docket No.: RD25-5-000

Project No.: [2022-03 Energy Assurance with Energy-Constrained Resources](#)

Equipment Rating

The maximum and minimum voltage, current, frequency, real and reactive power flows on individual equipment under steady state, short-circuit and transient conditions, as permitted or assigned by the equipment owner.

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Docket No.: RM06-16-000

FERC Approval Date: March 16, 2007

Project No.: Determine Facility Ratings, Operating limits, and Transfer Capabilities

Existing Transmission Commitments (ETC)

Committed uses of a Transmission Service Provider's Transmission system considered when determining ATC or AFC.

BOT Adoption Date: August 22, 2008

Effective Date: April 01, 2011

FERC Filing Date: August 29, 2008

FERC Docket No.: RM08-19-000

FERC Approval Date: November 24, 2009

Project No.: 2006-07

External Routable Connectivity

The ability to access a BES Cyber System from a Cyber Asset that is outside of its associated Electronic Security Perimeter via a bi-directional routable protocol connection.

BOT Adoption Date: November 26, 2012

Effective Date: July 01, 2016

FERC Filing Date: January 31, 2013

Inactive Date: June 30, 2028

Project No.: [2008-06 Cyber Security Order 706](#)

FERC Approval Date: November 22, 2013

FERC Docket No.: RM13-5-000

External Routable Connectivity (ERC)

The ability to access a BES Cyber System through its Electronic Security Perimeter via a bi-directional routable protocol connection.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Docket No.: RM24-8-000

FERC Approval Date: March 19, 2026

Project No.: [2016-02 Modifications to CIP Standards](#)

Extreme Cold Weather Temperature

The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 1/1/2000 through the date the temperature is calculated.

BOT Adoption Date: February 15, 2024

Effective Date: October 01, 2024

FERC Filing Date: February 16, 2024

FERC Approval Date: June 27, 2024

FERC Docket No.: RD24-5-000

Project No.: [2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination](#)

Extreme Temperature Assessment

Documented evaluation of future Bulk Electric System performance for extreme heat and extreme cold benchmark temperature events.

BOT Adoption Date: December 10, 2024

Effective Date: April 01, 2026

FERC Filing Date: December 17, 2024

FERC Approval Date: February 20, 2025

FERC Docket No.: RD25-4-000

Facility

A set of electrical equipment that operates as a single Bulk Electric System Element (e.g., a line, a generator, a shunt compensator, transformer, etc.)

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: Determine Facility Ratings, Operating limits, and Transfer Capabilities

Facility Rating

The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Fault

An event occurring on an electric system such as a short circuit, a broken wire, or an intermittent connection.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Fire Risk

The likelihood that a fire will ignite or spread in a particular geographic area.

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: 2007-07

Firm Demand

That portion of the Demand that a power supplier is obligated to provide except when system reliability is threatened or during emergency conditions.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Firm Transmission Service

The highest quality (priority) service offered to customers under a filed rate schedule that anticipates no planned interruption.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Fixed Fuel Supply Component

Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

BOT Adoption Date: February 15, 2024

Effective Date: October 01, 2024

FERC Filing Date: February 16, 2024

FERC Approval Date: June 27, 2024

FERC Docket No.: RD24-5-000

Project No.: [2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination](#)

Flashover

An electrical discharge through air around or over the surface of insulation, between objects of different potential, caused by placing a voltage across the air space that results in the ionization of the air space.

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: 2007-07

Flowgate

- 1.) A portion of the Transmission system through which the Interchange Distribution Calculator calculates the power flow from Interchange Transactions.
- 2.) A mathematical construct, comprised of one or more monitored transmission Facilities and optionally one or more contingency Facilities, used to analyze the impact of power flows upon the Bulk Electric System.

BOT Adoption Date: February 10, 2009

Effective Date: April 01, 2011

FERC Filing Date: March 06, 2009

FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Flowgate Methodology

The Flowgate methodology is characterized by identification of key Facilities as Flowgates. Total Flowgate Capabilities are determined based on Facility Ratings and voltage and stability limits. The impacts of Existing Transmission Commitments (ETCs) are determined by simulation. The impacts of ETC, Capacity Benefit Margin (CBM) and Transmission Reliability Margin (TRM) are subtracted from the Total Flowgate Capability, and Postbacks and counterflows are added, to determine the Available Flowgate Capability (AFC) value for that Flowgate. AFCs can be used to determine Available Transfer Capability (ATC).

BOT Adoption Date: February 10, 2009

Effective Date: April 01, 2011

FERC Filing Date: March 06, 2009

FERC Approval Date: November 24, 2009

FERC Docket No.: RM06-16-000

Project No.: 2006-07

Forced Outage

1. The removal from service availability of a generating unit, transmission line, or other facility for emergency reasons.
2. The condition in which the equipment is unavailable due to unanticipated failure.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Frequency Bias

A value, usually expressed in megawatts per 0.1 Hertz (MW/0.1 Hz), associated with a Balancing Authority Area that approximates the Balancing Authority Area's response to Interconnection frequency error.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

Frequency Bias Setting (FBS)

A negative number either fixed or variable, expressed in MW/0.1 Hz, included in a Balancing Authority's Reporting ACE to account for the Balancing Authority's Frequency Response to the Interconnection Frequency Error, and discourage response withdrawal through secondary control systems.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Frequency Deviation

A change in Interconnection frequency.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 -Version 0 Reliability Standards](#)

Frequency Error

The difference between the Actual Frequency and the Scheduled Frequency. (FA -FS)

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Frequency Measurable Event (Texas RE term)

An event that results in a Frequency Deviation, identified at the BA's sole discretion, and meeting one of the following conditions: i) a Frequency Deviation that has a pre-perturbation [the 16-second period of time before t(0)] average frequency to post-perturbation [the 32-second period of time starting 20 seconds after t(0)] average frequency

absolute deviation greater than 100 mHz (the 100 mHz value may be adjusted by the BA to capture 30 to 40 events per year). OR ii) a cumulative change in generating unit/generating facility, DC tie and/or firm load pre-perturbation megawatt value to post-perturbation megawatt value absolute deviation greater than 550 MW (the 550 MW value may be adjusted by the BA to capture 30 to 40 events per year).

BOT Adoption Date: August 15, 2013

Effective Date: April 01, 2014

FERC Approval Date: January 16, 2014

Project No.: [Texas RE](#)

Frequency Regulation

The ability of a Balancing Authority to help the Interconnection maintain Scheduled Frequency. This assistance can include both turbine governor response and Automatic Generation Control.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Frequency Response

(Equipment) The ability of a system or elements of the system to react or respond to a change in system frequency.
(System) The sum of the change in demand, plus the change in generation, divided by the change in frequency, expressed in megawatts per 0.1 Hertz (MW/0.1 Hz).

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Frequency Response Measure (FRM)

The median of all the Frequency Response observations reported annually by Balancing Authorities or Frequency Response Sharing Groups for frequency events specified by the ERO. This will be calculated as MW/0.1Hz.

BOT Adoption Date: February 07, 2013

Effective Date: April 01, 2015

FERC Filing Date: March 29, 2013

FERC Approval Date: January 16, 2014

Frequency Response Obligation (FRO)

The Balancing Authority's share of the required Frequency Response needed for the reliable operation of an Interconnection. This will be calculated as MW/0.1Hz.

BOT Adoption Date: February 07, 2013

Effective Date: April 01, 2015

FERC Filing Date: March 29, 2013

FERC Approval Date: January 16, 2014

FERC Docket No.: RM13-11-000

Project No.: 2007-12

Frequency Response Sharing Group (FRSG)

A group whose members consist of two or more Balancing Authorities that collectively maintain, allocate, and supply operating resources required to jointly meet the sum of the Frequency Response Obligations of its members.

BOT Adoption Date: February 07, 2013

Effective Date: April 01, 2015

FERC Filing Date: March 29, 2013

FERC Approval Date: January 16, 2014

FERC Docket No.: RM13-11-000

Project No.: 2007-12

Generating Plant (NPCC term)

One or more generators at a single physical location whereby any single contingency can affect all the generators at that location.

BOT Adoption Date: November 04, 2010

Effective Date: October 20, 2013

FERC Approval Date: October 20, 2011

Project No.: [NPCC](#)

Generation Capability Import Requirement (GCIR)

The amount of generation capability from external sources identified by a Load-Serving Entity (LSE) or Resource Planner (RP) to meet its generation reliability or resource adequacy requirements as an alternative to internal resources.

BOT Adoption Date: November 13, 2008

Effective Date: April 01, 2011

FERC Filing Date: August 29, 2008

FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Generator Cold Weather Constraint

Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would be expected to result in improved generating unit performance during cold temperatures.

BOT Adoption Date: April 04, 2025

Effective Date: October 01, 2025

FERC Filing Date: April 10, 2025

FERC Approval Date: September 18, 2025

FERC Docket No.: RD25-7-000

Project No.: [2024-03 Revisions to EOP-012-2](#)

Generator Cold Weather Critical Component

Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

BOT Adoption Date: February 15, 2024

Effective Date: October 01, 2024

FERC Filing Date: February 16, 2024

FERC Approval Date: June 27, 2024

FERC Docket No.: RD24-5-000

Project No.: [2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination](#)

Generator Cold Weather Reliability Event

One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature: (1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration; (2) a start-up failure where the unit fails to synchronize within a specified start-up time; or (3) a Forced Outage.

BOT Adoption Date: February 15, 2024

Effective Date: October 01, 2024

FERC Filing Date: February 16, 2024

FERC Docket No.: RD24-5-000

FERC Approval Date: June 27, 2024

Project No.: [2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination](#)

Generator Operator (GOP)

The entity that: 1) operates generating Facility(ies) and performs the functions of supplying energy and Interconnected Operations Services (Category 1 GOP); or 2) operates non-BES Inverter-Based Resource(s) that either have or contribute to an aggregate nameplate capacity of greater than or equal to 20 MVA, connected through a system designed primarily for delivering such capacity to a common point of connection at a voltage greater than or equal to 60 kV (Category 2 GOP).

BOT Adoption Date: August 14, 2025

Effective Date: January 01, 2026

FERC Filing Date: August 27, 2025

FERC Docket No.: RD25-10-000

FERC Approval Date: October 01, 2025

Project No.: [2024-01 Rules of Procedure Definitions Alignment \(Generator Owner and Generator Operator\)](#)

Generator Owner (GO)

The entity that: 1) owns and maintains generating Facility(ies) (Category 1 GO); or 2) owns and maintains non-BES Inverter-Based Resource(s) that either have or contribute to an aggregate nameplate capacity of greater than or equal to 20 MVA, connected through a system designed primarily for delivering such capacity to a common point of connection at a voltage greater than or equal to 60 kV (Category 2 GO).

BOT Adoption Date: August 14, 2025

Effective Date: January 01, 2026

FERC Filing Date: August 27, 2025

FERC Docket No.: RD25-10-000

FERC Approval Date: October 01, 2025

Project No.: [2024-01 Rules of Procedure Definitions Alignment \(Generator Owner and Generator Operator\)](#)

Generator Shift Factor (GSF)

A factor to be applied to a generator's expected change in output to determine the amount of flow contribution that change in output will impose on an identified transmission facility or Flowgate.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Generator-to-Load Distribution Factor (GLDF)

The algebraic sum of a Generator Shift Factor and a Load Shift Factor to determine the total impact of an Interchange Transaction on an identified transmission facility or Flowgate.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Geomagnetic Disturbance Vulnerability Assessment or GMD Vulnerability Assessment (GMD)

Documented evaluation of potential susceptibility to voltage collapse, Cascading, or localized damage of equipment due to geomagnetic disturbances.

BOT Adoption Date: December 17, 2014

Effective Date: July 01, 2017

FERC Filing Date: January 21, 2015

FERC Approval Date: September 22, 2016

FERC Docket No.: RM15-11-000

Project No.: [2013-03 Geomagnetic Disturbance Mitigation](#)

Governor (Texas RE term)

The electronic, digital or mechanical device that implements Primary Frequency Response of generating units/generating facilities or other system elements.

BOT Adoption Date: August 15, 2013

Effective Date: April 01, 2014

FERC Approval Date: January 16, 2014

Project No.: [Texas RE](#)

Host Balancing Authority

1. A Balancing Authority that confirms and implements Interchange Transactions for a Purchasing Selling Entity that operates generation or serves customers directly within the Balancing Authority's metered boundaries.
2. The Balancing Authority within whose metered boundaries a jointly owned unit is physically located.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Hourly Value

Data measured on a Clock Hour basis.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Implemented Interchange

The state where the Balancing Authority enters the Confirmed Interchange into its Reporting ACE .

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Inadvertent Interchange

The difference between the Balancing Authority's Actual Net Interchange and Scheduled Net Interchange. (NIA – NIS)

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Inadvertent Interchange Management I_{IM}

A term used in Reporting ACE to allow for management of Inadvertent Interchange and correction of Time Error. The IIM value is not used for unilateral paybacks and is null unless there is a regional procedure in place to coordinate an inadvertent control methodology for an Interconnection.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Independent Power Producer (IPP)

Any entity that owns or operates an electricity generating facility that is not included in an electric utility's rate base. This term includes, but is not limited to, cogenerators and small power producers and all other nonutility electricity producers, such as exempt wholesale generators, who sell electricity.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Institute of Electrical and Electronics Engineers, Inc. (IEEE)

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: 2007-07

Interactive Remote Access

User-initiated access by a person employing a remote access client or other remote access technology using a routable protocol. Remote access originates from a Cyber Asset that is not an Intermediate System and not located within any of the Responsible Entity's Electronic Security Perimeter(s) or at a defined Electronic Access Point (EAP). Remote access may be initiated from:

- 1) Cyber Assets used or owned by the Responsible Entity,
- 2) Cyber Assets used or owned by employees, and
- 3) Cyber Assets used or owned by vendors, contractors, or consultants. Interactive remote access does not include system-to-system process communications.

BOT Adoption Date: November 26, 2012

Effective Date: July 01, 2016

FERC Filing Date: January 31, 2013

FERC Approval Date: November 22, 2013

Inactive Date: June 30, 2028

FERC Docket No.: RM13-5-000

Project No.: [2008-06 Cyber Security Order 706](#)

Interactive Remote Access (IRA)

User-initiated electronic access by a person using a bidirectional routable protocol:

- To a Cyber System protected by an Electronic Security Perimeter(s) (ESP);
- That is converted by the responsible entity to a non-routable protocol that allows access to a Cyber System; or
- To a Management Interface.

Interactive Remote Access does not include:

- Communication that originates from a Cyber System protected by any of the Responsible Entity's ESPs; or
- System-to-system process communication.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Interchange

Energy transfers that cross Balancing Authority boundaries.

BOT Adoption Date: May 02, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: Coordinate Interchange

Interchange Authority (IA)

The responsible entity that authorizes the implementation of valid and balanced Interchange Schedules between Balancing Authority Areas, and ensures communication of Interchange information for reliability assessment purposes.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Interchange Distribution Calculator

The mechanism used by Reliability Coordinators in the Eastern Interconnection to calculate the distribution of Interchange Transactions over specific Flowgates. It includes a database of all Interchange Transactions and a matrix of the Distribution Factors for the Eastern Interconnection.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Interchange Meter Error I_{ME}

A term used in Reporting ACE to compensate for data or equipment errors affecting any other components of Reporting ACE.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Interchange Schedule

An agreed-upon Interchange Transaction size (megawatts), start and end time, beginning and ending ramp times and rate, and type required for delivery and receipt of power and energy between the Source and Sink Balancing Authorities involved in the transaction.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Interchange Transaction

An agreement to transfer energy from a seller to a buyer that crosses one or more Balancing Authority Area boundaries.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Interchange Transaction Tag or Tag

The details of an Interchange Transaction required for its physical implementation.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Interconnected Operations Service

A service (exclusive of basic energy and Transmission Services) that is required to support the Reliable Operation of interconnected Bulk Electric Systems.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

Interconnection

A geographic area in which the operation of Bulk Power System components is synchronized such that the failure of one or more of such components may adversely affect the ability of the operators of other components within the system to maintain Reliable Operation of the Facilities within their control. When capitalized, any one of the four major electric system networks in North America: Eastern, Western, ERCOT and Quebec.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Interconnection Reliability Operating Limit (IROL)

A System Operating Limit that, if violated, could lead to instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System.

BOT Adoption Date: November 01, 2006

Effective Date: July 01, 2008

FERC Filing Date: November 15, 2006

FERC Approval Date: December 27, 2007

FERC Docket No.: RM07-3-000

Project No.: Determine Facility Ratings, Operating Limits, and Transfer Capabilities

Interconnection Reliability Operating Limit Tv (IROL Tv)

The maximum time that an Interconnection Reliability Operating Limit can be violated before the risk to the interconnection or other Reliability Coordinator Area(s) becomes greater than acceptable. Each Interconnection Reliability Operating Limit's Tv shall be less than or equal to 30 minutes.

BOT Adoption Date: November 01, 2006

Effective Date: July 01, 2008

FERC Filing Date: November 15, 2006

FERC Approval Date: December 27, 2007

FERC Docket No.: RM07-3-000

Project No.: Determine Facility Ratings, Operating Limits, and Transfer Capabilities

Intermediate Balancing Authority

A Balancing Authority on the scheduling path of an Interchange Transaction other than the Source Balancing Authority and Sink Balancing Authority.

BOT Adoption Date: February 06, 2014

Effective Date: October 01, 2014

FERC Filing Date: February 27, 2014

FERC Approval Date: June 30, 2014

FERC Docket No.: RD14-4-000

Project No.: 2008-12

Intermediate System

A Cyber Asset or collection of Cyber Assets performing access control to restrict Interactive Remote Access to only authorized users. The Intermediate System must not be located inside the Electronic Security Perimeter.

BOT Adoption Date: November 26, 2012

Effective Date: July 01, 2016

FERC Filing Date: January 31, 2013

FERC Approval Date: November 22, 2013

Inactive Date: June 30, 2028

FERC Docket No.: RM13-5-000

Project No.: [2008-06 Cyber Security Order 706](#)

Intermediate System

One or more Electronic Access Control or Monitoring Systems that are used to restrict Interactive Remote Access to only authorized users.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Interpersonal Communication

Any medium that allows two or more individuals to interact, consult, or exchange information.

BOT Adoption Date: November 07, 2012

Effective Date: October 01, 2015

FERC Filing Date: May 14, 2014

FERC Approval Date: April 16, 2015

Interruptible Load or Interruptible Demand

Demand that the end-use customer makes available to its Load-Serving Entity via contract or agreement for curtailment.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Inverter-Based Resource (IBR)

A plant/facility consisting of individual devices that are capable of exporting Real Power through a power electronic interface(s) such as an inverter or converter, and that are operated together as a single resource at a common point of interconnection to the electric system. Examples include, but are not limited to, plants/facilities with solar photovoltaic (PV), Type 3 and Type 4 wind, battery energy storage system (BESS), and fuel cell devices.

BOT Adoption Date: October 08, 2024

Effective Date: April 01, 2025

FERC Filing Date: November 04, 2024

FERC Approval Date: February 20, 2025

FERC Docket No.: RM15-11-000

Project No.: [2020-06 Verifications of Models and Data for Generators**](#)

Joint Control

Automatic Generation Control of jointly owned units by two or more Balancing Authorities.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Limiting Element

The element that is 1.) Either operating at its appropriate rating, or 2.) Would be following the limiting contingency. Thus, the Limiting Element establishes a system limit.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Load

An end-use device or customer that receives power from the electric system.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Load Shift Factor (LSF)

A factor to be applied to a load's expected change in demand to determine the amount of flow contribution that change in demand will impose on an identified transmission facility or monitored Flowgate.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Load-Serving Entity (LSE)

Secures energy and Transmission Service (and related Interconnected Operations Services) to serve the electrical demand and energy requirements of its end-use customers.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Long-Term Transmission Planning Horizon

The first twelve month period that a Planning Coordinator or a Transmission Planner is responsible for assessing. For an assessment started in a given calendar year, Year One includes the forecasted peak Load period for one of the following two calendar years. For example, if a Planning Assessment was started in 2011, then Year One includes the forecasted peak Load period for either 2012 or 2013.

BOT Adoption Date: January 24, 2011

Effective Date: January 01, 2015

FERC Filing Date: January 28, 2011

FERC Approval Date: November 17, 2011

FERC Docket No.: RM12-1-000

Project No.: 2010-10

Management Interface

An administrative interface that:

- Controls the processes of initializing, deploying, and configuring Shared Cyber Infrastructure;
- Is an autonomous subsystem that provides access to the console independently of the host system's CPU, firmware, and operating system; or
- Configures an Electronic Access Point.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Market Flow

The total amount of power flowing across a specified Facility or set of Facilities due to a market dispatch of generation internal to the market to serve load internal to the market.

BOT Adoption Date: November 04, 2010

Effective Date: July 01, 2011

FERC Filing Date: January 13, 2011

FERC Approval Date: April 21, 2011

Inactive Date: June 30, 2028

FERC Docket No.: RM06-16-000

Project No.: [2006-08 Reliability Coordination -
Transmission Loading Relief](#)

Market Flow

One or more Electronic Access Control or Monitoring Systems that are used to restrict Interactive Remote Access to only authorized users.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Minimum Vegetation Clearance Distance (MVCD)

The calculated minimum distance stated in feet (meters) to prevent flash-over between conductors and vegetation, for various altitudes and operating voltages.

BOT Adoption Date: November 03, 2011

Effective Date: July 01, 2014

FERC Filing Date: December 21, 2011

FERC Approval Date: March 21, 2013

FERC Docket No.: RM06-16-000

Project No.: 2007-07

Misoperation

The failure of a Composite Protection System to operate as intended for protection purposes. Any of the following is a Misoperation:

- 1. Failure to Trip – During Fault** – A failure of a Composite Protection System to operate for a Fault condition for which it is designed. The failure of a Protection System component is not a Misoperation as long as the performance of the Composite Protection System is correct.
- 2. Failure to Trip – Other Than Fault** – A failure of a Composite Protection System to operate for a non-Fault condition for which it is designed, such as a power swing, undervoltage, overexcitation, or loss of excitation. The failure of a Protection System component is not a Misoperation as long as the performance of the Composite Protection System is correct.
- 3. Slow Trip – During Fault** – A Composite Protection System operation that is slower than required for a Fault condition if the duration of its operating time resulted in the operation of at least one other Element's Composite Protection System.
- 4. Slow Trip – Other Than Fault** – A Composite Protection System operation that is slower than required for a non-Fault condition, such as a power swing, undervoltage, overexcitation, or loss of excitation, if the duration of its operating time resulted in the operation of at least one other Element's Composite Protection System.

5. Unnecessary Trip – During Fault – An unnecessary Composite Protection System operation for a Fault condition on another Element.

6. Unnecessary Trip – Other Than Fault – An unnecessary Composite Protection System operation for a non-Fault condition. A Composite Protection System operation that is caused by personnel during on-site maintenance, testing, inspection, construction, or commissioning activities is not a Misoperation.

BOT Adoption Date: August 14, 2014

Effective Date: July 01, 2016

FERC Filing Date: September 15, 2014

FERC Approval Date: May 13, 2015

FERC Docket No.: RD14-14-000

Project No.: 2010-05.1

Model Validation

The process of comparing simulation results with measurements to assess how closely a model's behavior matches the measured behavior.

BOT Adoption Date: August 14, 2025

Effective Date: April 01, 2026

FERC Filing Date: November 04, 2025

FERC Approval Date: February 19, 2026

FERC Docket No.: RD26-3-000

Project No.: [2020-06 Verifications of Models and Data for Generators**](#)

Model Verification

The process of confirming that model structure and parameter values are representative of the equipment or facility design and settings by reviewing equipment or facility design and settings documentation.

BOT Adoption Date: August 14, 2025

Effective Date: April 01, 2026

FERC Filing Date: November 04, 2025

FERC Approval Date: February 19, 2026

FERC Docket No.: RD26-3-000

Project No.: [2020-06 Verifications of Models and Data for Generators**](#)

Most Severe Single Contingency (MSSC)

The Balancing Contingency Event, due to a single contingency identified using system models maintained within the Reserve Sharing Group (RSG) or a Balancing Authority's area that is not part of a Reserve Sharing Group, that would result in the greatest loss (measured in MW) of resource output used by the RSG or a Balancing Authority that is not participating as a member of a RSG at the time of the event to meet Firm Demand and export obligation (excluding export obligation for which Contingency Reserve obligations are being met by the Sink Balancing Authority).

BOT Adoption Date: November 05, 2015

Effective Date: January 01, 2018

FERC Filing Date: January 29, 2016

FERC Approval Date: January 19, 2017

FERC Docket No.: RM16-7-000

Project No.: [2010-14.1 Phase 1 of Balancing Authority Reliability-based Controls: Reserves](#)

Native Balancing Authority

A Balancing Authority from which a portion of its physically interconnected generation and/or load is transferred from its effective control boundaries to the Attaining Balancing Authority through a Dynamic Transfer.

BOT Adoption Date: February 06, 2014

Effective Date: October 01, 2014

FERC Filing Date: February 27, 2014

FERC Approval Date: June 30, 2014

FERC Docket No.: RD14-4-000

Project No.: 2008-12

Native Load

The end-use customers that the Load-Serving Entity is obligated to serve.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Near-Term Energy Reliability Assessment

An Energy Reliability Assessment with an assessment period that begins no later than two days after the operating day and has a minimum duration of five days and a maximum duration of six weeks.

BOT Adoption Date: December 10, 2024

Effective Date: October 01, 2026

FERC Filing Date: January 06, 2025

FERC Approval Date: February 26, 2025

FERC Docket No.: RD25-5-000

Project No.: [2022-03 Energy Assurance with Energy-Constrained Resources](#)

Near-Term Transmission Planning Horizon

The transmission planning period that covers Year One through five.

BOT Adoption Date: January 24, 2011

Effective Date: April 01, 2013

FERC Filing Date: August 29, 2008

FERC Approval Date: November 17, 2011

FERC Docket No.: RM08-19-000

Project No.: 2010-10

Net Actual Interchange

The algebraic sum of all metered interchange over all interconnections between two physically Adjacent Balancing Authority Areas.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000-Version 0 Reliability Standards](#)

Net Energy for Load

Net Balancing Authority Area generation, plus energy received from other Balancing Authority Areas, less energy delivered to Balancing Authority Areas through interchange. It includes Balancing Authority Area losses but excludes energy required for storage at energy storage facilities.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000-Version 0 Reliability Standards](#)

Net Internal Demand (ReliabilityFirst term)

Total of all end-use customer demand and electric system losses within specified metered boundaries, less Direct Control Management and Interruptible Demand

BOT Adoption Date: August 05, 2009

Effective Date: May 23, 2011

FERC Approval Date: March 17, 2011

Project No.: [ReliabilityFirst](#)

Network Integration Transmission Service

Service that allows an electric transmission customer to integrate, plan, economically dispatch and regulate its network reserves in a manner comparable to that in which the Transmission Owner serves Native Load customers.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 -Version 0 Reliability Standards](#)

Non-Consequential Load Loss

Non-Interruptible Load loss that does not include: (1) Consequential Load Loss, (2) the response of voltage sensitive Load, or (3) Load that is disconnected from the System by end-user equipment.

BOT Adoption Date: August 04, 2011

Effective Date: January 01, 2015

FERC Filing Date: October 19, 2011

FERC Approval Date: October 17, 2013

FERC Docket No.: RM12-1-000

Project No.: 2006-02

Non-Firm Transmission Service

Transmission service that is reserved on an as-available basis and is subject to curtailment or interruption.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 -Version 0 Reliability Standards](#)

Non-Spinning Reserve

1. That generating reserve not connected to the system but capable of serving demand within a specified time. 2. Interruptible load that can be removed from the system in a specified time.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Normal Clearing

A protection system operates as designed and the fault is cleared in the time normally expected with proper functioning of the installed protection systems.

BOT Adoption Date: November 01, 2006

Effective Date: July 01, 2008

FERC Filing Date: November 15, 2006

FERC Approval Date: December 27, 2007

FERC Docket No.: RM07-3-000

Project No.: Determine Facility Ratings, Operating Limits, and Transfer Capabilities

Normal Rating

The rating as defined by the equipment owner that specifies the level of electrical loading, usually expressed in megawatts (MW) or other appropriate units that a system, facility, or element can support or withstand through the daily demand cycles without loss of equipment life.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Nuclear Plant Generator Operator

Any Generator Operator or Generator Owner that is a Nuclear Plant Licensee responsible for operation of a nuclear facility licensed to produce commercial power.

BOT Adoption Date: May 02, 2007

Effective Date: March 30, 2009

FERC Filing Date: December 11, 2007

FERC Approval Date: October 16, 2008

FERC Docket No.: RM08-3-000

Project No.: 2009-08

Nuclear Plant Interface Requirements (NPIRs)

The requirements based on NPLRs and Bulk Electric System requirements that have been mutually agreed to by the Nuclear Plant Generator Operator and the applicable Transmission Entities.

BOT Adoption Date: May 02, 2007

Effective Date: March 30, 2009

FERC Filing Date: December 11, 2007

FERC Approval Date: October 16, 2008

FERC Docket No.: RM08-3-000

Project No.: 2009-08

Nuclear Plant Licensing Requirements (NPLRs)

Requirements included in the design basis of the nuclear plant and statutorily mandated for the operation of the plant, including nuclear power plant licensing requirements for: 1) Off-site power supply to enable safe shutdown of the plant during an electric system or plant event; and 2) Avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.

BOT Adoption Date: May 02, 2007

Effective Date: March 30, 2009

FERC Filing Date: December 11, 2007

FERC Approval Date: October 16, 2008

FERC Docket No.: RM08-3-000

Project No.: 2009-08

Nuclear Plant Off-site Power Supply (Off-site Power)

The electric power supply provided from the electric system to the nuclear power plant distribution system as required per the nuclear power plant license.

BOT Adoption Date: May 02, 2007

Effective Date: March 30, 2009

FERC Filing Date: December 11, 2007

FERC Approval Date: October 16, 2008

FERC Docket No.: RM08-3-000

Project No.: 2009-08

Off-Peak

Those hours or other periods defined by NAESB business practices, contract, agreements, or guides as periods of lower electrical demand.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

On-Peak

Those hours or other periods defined by NAESB business practices, contract, agreements, or guides as periods of higher electrical demand.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Open Access Same Time Information Service (OASIS)

An electronic posting system that the Transmission Service Provider maintains for transmission access data and that allows all transmission customers to view the data simultaneously.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Open Access Transmission Tariff (OATT)

Electronic transmission tariff accepted by the U.S. Federal Energy Regulatory Commission requiring the Transmission Service Provider to furnish to all shippers with non-discriminating service comparable to that provided by Transmission Owners to themselves.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

Operating Instruction

A command by operating personnel responsible for the Real-time operation of the interconnected Bulk Electric System to change or preserve the state, status, output, or input of an Element of the Bulk Electric System or Facility of the Bulk Electric System. (A discussion of general information and of potential options or alternatives to resolve Bulk Electric System operating concerns is not a command and is not considered an Operating Instruction.)

BOT Adoption Date: May 06, 2014

Effective Date: July 01, 2016

FERC Filing Date: May 14, 2014

FERC Approval Date: April 16, 2015

FERC Docket No.: RM14-13-000

Project No.: [2007-02 Operating Personnel Communications Protocols](#)

Operating Plan

A document that identifies a group of activities that may be used to achieve some goal. An Operating Plan may contain Operating Procedures and Operating Processes. A company-specific system restoration plan that includes an Operating Procedure for black-starting units, Operating Processes for communicating restoration progress with other entities, etc., is an example of an Operating Plan.

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: Coordinate Operations

Operating Procedure

A document that identifies specific steps or tasks that should be taken by one or more specific operating positions to achieve specific operating goal(s). The steps in an Operating Procedure should be followed in the order in which they are presented, and should be performed by the position(s) identified. A document that lists the specific steps for a system operator to take in removing a specific transmission line from service is an example of an Operating Procedure.

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

Operating Process

A document that identifies general steps for achieving a generic operating goal. An Operating Process includes steps with options that may be selected depending upon Real-time conditions. A guideline for controlling high voltage is an example of an Operating Process.

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: Coordinate Operations

Operating Reserve

That capability above firm system demand required to provide for regulation, load forecasting error, equipment forced and scheduled outages and local area protection. It consists of spinning and non-spinning reserve.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Operating Reserve – Spinning

The portion of Operating Reserve consisting of: •Generation synchronized to the system and fully available to serve load within the Disturbance recovery period following the contingency event; or •Load fully removable from the system within the Disturbance recovery period following the contingency event.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Operating Reserve – Supplemental

The portion of Operating Reserve consisting of:

- Generation (synchronized or capable of being synchronized to the system) that is fully available to serve load within the Disturbance Recovery Period following the contingency event; or
- Load fully removable from the system within the Disturbance Recovery Period following the contingency event.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Operating Voltage

The voltage level by which an electrical system is designated and to which certain operating characteristics of the system are related; also, the effective (root-mean-square) potential difference between any two conductors or between a conductor and the ground. The actual voltage of the circuit may vary somewhat above or below this value.

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: 2007-07

Operational Planning Analysis (OPA)

An evaluation of projected system conditions to assess anticipated (pre-Contingency) and potential (post-Contingency) conditions for next-day operations. The evaluation shall reflect applicable inputs including, but not limited to: load forecasts; generation output levels; Interchange; known Protection System and Remedial Action Scheme status or degradation, functions, and limitations; Transmission outages; generator outages; Facility Ratings; and identified phase angle and equipment limitations.

(Operational Planning Analysis may be provided through internal systems or through third-party services.)

BOT Adoption Date: August 11, 2016

Effective Date: April 01, 2021

FERC Filing Date: September 02, 2016

FERC Approval Date: June 07, 2018

FERC Docket No.: RM16-22-000

Project No.: [2007-06.2 Phase 2 of System Protection Coordination](#)

Operations Support Personnel

Individuals who perform current day or next day outage coordination or assessments, or who determine SOLs, IROLs, or operating nomograms,¹ in direct support of Real-time operations of the Bulk Electric System.

BOT Adoption Date: February 06, 2014

Effective Date: July 01, 2016

FERC Filing Date: March 07, 2014

FERC Approval Date: June 19, 2014

FERC Docket No.: RD14-7-000

Project No.: [2010-01 Training](#)

Outage Transfer Distribution Factor (OTDF)

In the post-contingency configuration of a system under study, the electric Power Transfer Distribution Factor (PTDF) with one or more system Facilities removed from service (outaged).

BOT Adoption Date: August 22, 2008

Effective Date: April 01, 2011

FERC Filing Date: August 29, 2008

FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Overlap Regulation Service

A method of providing Regulation Service in which the Balancing Authority providing the Regulation Service incorporates into its Reporting ACE a receiving Balancing Authority's Actual Net Interchange, Scheduled Net Interchange, and response to Interconnection Error Frequency.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Participation Factors

A set of dispatch rules such that given a specific amount of load to serve, an approximate generation dispatch can be determined. To accomplish this, generators are assigned a percentage that they will contribute to serve load.

BOT Adoption Date: August 22, 2008

Effective Date: April 01, 2011

FERC Filing Date: August 29, 2008

FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Peak Demand

1. The highest hourly integrated Net Energy For Load within a Balancing Authority Area occurring within a given period (e.g., day, month, season, or year).
2. The highest instantaneous demand within the Balancing Authority Area.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Performance-Reset Period

The time period that the entity being assessed must operate without any violations to reset the level of non compliance to zero.

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: Determine Facility Ratings, Operating Limits, and Transfer Capabilities

Physical Access Control Systems (PACS)

Cyber Systems that control, alert, or log access to the Physical Security Perimeter(s) (PSP), exclusive of locally mounted hardware or devices at the PSP such as motion sensors, electronic lock control mechanisms, and badge readers.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Physical Access Control Systems (PACS)

Cyber Assets that control, alert, or log access to the Physical Security Perimeter(s), exclusive of locally mounted hardware or devices at the Physical Security Perimeter such as motion sensors, electronic lock control mechanisms, and badge readers.

BOT Adoption Date: November 26, 2012

Effective Date: July 01, 2016

FERC Filing Date: January 31, 2013

FERC Approval Date: November 22, 2013

Inactive Date: June 30, 2028

FERC Docket No.: RM13-5-000

Project No.: [2008-06 Cyber Security Order 706](#)

Physical Security Perimeter (PSP)

The physical border surrounding locations in which BES Cyber Assets, BES Cyber Systems, or Electronic Access Control or Monitoring Systems reside, and for which access is controlled.

BOT Adoption Date: November 26, 2012

Effective Date: July 01, 2016

FERC Filing Date: January 31, 2013

FERC Approval Date: November 22, 2013

Inactive Date: June 30, 2028

FERC Docket No.: RM13-5-000

Project No.: [2008-06 Cyber Security Order 706](#)

Physical Security Perimeter (PSP)

The physical border surrounding locations in which BES Cyber Assets, BES Cyber Systems, Shared Cyber Infrastructure, or Electronic Access Control or Monitoring Systems reside, and for which access is controlled.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Planning Assessment

Documented evaluation of future Transmission System performance and Corrective Action Plans to remedy identified deficiencies.

BOT Adoption Date: August 04, 2011

Effective Date: January 01, 2015

FERC Filing Date: October 19, 2011

FERC Approval Date: October 17, 2013

FERC Docket No.: RM12-1-000

Project No.: 2006-02

Planning Authority

The responsible entity that coordinates and integrates transmission Facilities and service plans, resource plans, and Protection Systems.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Planning Coordinator (PC)

See Planning Authority.

BOT Adoption Date: August 22, 2008

Effective Date: April 01, 2011

FERC Filing Date: August 29, 2008

FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Point of Delivery (POD)

A location that the Transmission Service Provider specifies on its transmission system where an Interchange Transaction leaves or a Load-Serving Entity receives its energy.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Point of Receipt (POR)

A location that the Transmission Service Provider specifies on its transmission system where an Interchange Transaction enters or a generator delivers its output.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Point to Point Transmission Service (PTP)

The reservation and transmission of capacity and energy on either a firm or non-firm basis from the Point(s) of Receipt to the Point(s) of Delivery.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Power Transfer Distribution Factor (PTDF)

In the pre-contingency configuration of a system under study, a measure of the responsiveness or change in electrical loadings on transmission system Facilities due to a change in electric power transfer from one area to another, expressed in percent (up to 100%) of the change in power transfer

BOT Adoption Date: August 22, 2008

Effective Date: April 01, 2011

FERC Filing Date: August 29, 2008

FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Pre-Reporting Contingency Event ACE Value

The average value of Reporting ACE, or Reserve Sharing Group Reporting ACE when applicable, in the 16-second interval immediately prior to the start of the Contingency Event Recovery Period based on EMS scan rate data.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Primary Frequency Response (Texas RE term) (PER)

The immediate proportional increase or decrease in real power output provided by generating units/generating facilities and the natural real power dampening response provided by Load in response to system Frequency Deviations. This response is in the direction that stabilizes frequency.

BOT Adoption Date: August 15, 2013

Effective Date: April 01, 2014

FERC Approval Date: January 16, 2014

Project No.: [Texas RE](#)

Primary Inadvertent Interchange (WECC term)

The component of area (n) inadvertent interchange caused by the regulating deficiencies of the area (n).

BOT Adoption Date: March 26, 2008

Effective Date: July 01, 2009

FERC Approval Date: May 21, 2009

Project No.: [WECC](#)

Pro Forma Tariff

Usually refers to the standard OATT and/or associated transmission rights mandated by the U.S. Federal Energy Regulatory Commission Order No. 888.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000-Version 0 Reliability Standards](#)

Protected Cyber Asset (PCA)

One or more Cyber Assets or Virtual Cyber Assets (VCA) that:

- Are protected by an Electronic Security Perimeter (ESP) but are not part of the highest impact BES Cyber System (BCS) protected by the same ESP; or

- Share CPU resources or memory resources with any part of the BCS, excluding VCA that are being actively remediated in an environment that isolates routable connectivity from BCS;

Excluding Transient Cyber Assets.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Protected Cyber Assets (PCA)

One or more Cyber Assets connected using a routable protocol within or on an Electronic Security Perimeter that is not part of the highest impact BES Cyber System within the same Electronic Security Perimeter. The impact rating of Protected Cyber Assets is equal to the highest rated BES Cyber System in the same ESP.

BOT Adoption Date: February 12, 2015

Effective Date: July 01, 2016

FERC Filing Date: February 13, 2015

FERC Approval Date: January 21, 2016

Inactive Date: June 30, 2028

FERC Docket No.: RM15-14-000

Project No.: [2014-02 Critical Infrastructure Protection Standards Version 5 Revisions](#)

Protection System

- Protective relays which respond to electrical quantities,
- Communications systems necessary for correct operation of protective functions
- Voltage and current sensing devices providing inputs to protective relays,
- Station dc supply associated with protective functions (including station batteries, battery chargers, and non-battery-based dc supply), and
- Control circuitry associated with protective functions through the trip coil(s) of the circuit breakers or other interrupting devices.

BOT Adoption Date: November 19, 2010

Effective Date: April 01, 2013

FERC Filing Date: March 30, 2011

FERC Approval Date: February 03, 2012

FERC Docket No.: RM13-7-000

Project No.: [2007-17.4 PRC-005 FERC Order No. 803 Directive](#)

Protection System Coordination Study

An analysis to determine whether Protection Systems operate in the intended sequence during Faults.

BOT Adoption Date: November 05, 2015

Effective Date: April 01, 2021

FERC Filing Date: September 02, 2016

FERC Approval Date: June 07, 2018

FERC Docket No.: RM16-22-000

Project No.: [2007-06 System Protection Coordination](#)

Protection System Maintenance Program (PSMP)

An ongoing program by which Protection System, Automatic Reclosing, and Sudden Pressure Relaying Components are kept in working order and proper operation of malfunctioning Components is restored. A maintenance program for a specific Component includes one or more of the following activities:

- Verify — Determine that the Component is functioning correctly.
- Monitor — Observe the routine in-service operation of the Component.
- Test — Apply signals to a Component to observe functional performance or output behavior, or to diagnose problems.
- Inspect — Examine for signs of Component failure, reduced performance or degradation.
- Calibrate — Adjust the operating threshold or measurement accuracy of a measuring element to meet the intended performance requirement.

BOT Adoption Date: November 05, 2015

Effective Date: January 01, 2016

FERC Filing Date: November 13, 2015

FERC Approval Date: December 18, 2015

FERC Docket No.: RD16-2-000

Project No.: [2007-17.4 PRC-005 FERC Order No. 803 Directive](#)

Pseudo-Tie

A time-varying energy transfer that is updated in Real-time and included in the Actual Net Interchange term (NIA) in the same manner as a Tie Line in the affected Balancing Authorities' Reporting ACE.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Purchasing-Selling Entity (PSE)

The entity that purchases or sells, and takes title to, energy, capacity, and Interconnected Operations Services. Purchasing-Selling Entities may be affiliated or unaffiliated merchants and may or may not own generating facilities.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Qualified Path (WECC term)

A transmission element, or group of transmission elements that has qualified for inclusion into the Western Interconnection Unscheduled Flow Mitigation Plan (WIUFMP).

BOT Adoption Date: February 07, 2019

Effective Date: October 01, 2019

FERC Approval Date: May 10, 2019

Project No.: [WECC](#)

Ramp Rate or Ramp

(Schedule) The rate, expressed in megawatts per minute, at which the Interchange Schedule is attained during the ramp period. (Generator) The rate, expressed in megawatts per minute, that a generator changes its output.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Rated Electrical Operating Conditions

The specified or reasonably anticipated conditions under which the electrical system or an individual electrical circuit is intend/designed to operate

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: 2007-07

Rated System Path Methodology

The Rated System Path Methodology is characterized by an initial Total Transfer Capability (TTC), determined via simulation. Capacity Benefit Margin, Transmission Reliability Margin, and Existing Transmission Commitments are subtracted from TTC, and Postbacks and counterflows are added as applicable, to derive Available Transfer Capability. Under the Rated System Path Methodology, TTC results are generally reported as specific transmission path capabilities.

BOT Adoption Date: August 22, 2008

Effective Date: April 01, 2011

FERC Filing Date: August 29, 2008

FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Rating

The operational limits of a transmission system element under a set of specified conditions.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000-Version 0 Reliability Standards](#)

Reactive Power

The portion of electricity that establishes and sustains the electric and magnetic fields of alternating-current equipment. Reactive Power must be supplied to most types of magnetic equipment, such as motors and transformers. It also must supply the reactive losses on transmission facilities. Reactive Power is provided by generators, synchronous condensers, or electrostatic equipment such as capacitors and directly influences electric system voltage. It is usually expressed in kilovars (kvar) or megavars (Mvar).

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Real Power

The portion of electricity that supplies energy to the Load.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Real-time

Present time as opposed to future time. (From Interconnection Reliability Operating Limits standard.)

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: Coordinate Operations

Real-time Assessment (RTA)

An evaluation of system conditions using Real-time data to assess existing (pre-Contingency) and potential (post-Contingency) operating conditions. The assessment shall reflect applicable inputs including, but not limited to: load; generation output levels; known Protection System and Remedial Action Scheme status or degradation, functions, and limitations; Transmission outages; generator outages; Interchange; Facility Ratings; and identified phase angle and equipment limitations. (Realtime Assessment may be provided through internal systems or through third-party services.)

BOT Adoption Date: August 11, 2016

Effective Date: April 01, 2021

FERC Filing Date: September 02, 2016

FERC Approval Date: June 08, 2018

FERC Docket No.: RM16-22-000

Project No.: [2007-06.2 Phase 2 of System Protection Coordination](#)

Receiving Balancing Authority

The Balancing Authority importing the Interchange.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Regional Reliability Organization (RRO)

1. An entity that ensures that a defined area of the Bulk Electric System is reliable, adequate and secure.
2. A member of the North American Electric Reliability Council. The Regional Reliability Organization can serve as the Compliance Monitor.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Regional Reliability Plan

The plan that specifies the Reliability Coordinators and Balancing Authorities within the Regional Reliability Organization, and explains how reliability coordination will be accomplished.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Regulating Reserve

An amount of reserve responsive to Automatic Generation Control, which is sufficient to provide normal regulating margin.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Regulation Reserve Sharing Group

A group whose members consist of two or more Balancing Authorities that collectively maintain, allocate, and supply the Regulating Reserve required for all member Balancing Authorities to use in meeting applicable regulating standards.

BOT Adoption Date: August 15, 2013

Effective Date: July 01, 2016

FERC Filing Date: January 29, 2016

FERC Approval Date: April 16, 2015

FERC Docket No.: RM16-7-000

Project No.: [2010-14.1 Phase 1 of Balancing Authority Reliability-based Controls: Reserves](#)

Regulation Service

The process whereby one Balancing Authority contracts to provide corrective response to all or a portion of the Reporting ACE of another Balancing Authority. The Balancing Authority providing the response assumes the obligation of meeting all applicable control criteria as specified by NERC for itself and the Balancing Authority for which it is providing the corrective response.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Reliability Adjustment Arranged Interchange

A request to modify a Confirmed Interchange or Implemented Interchange for reliability purposes.

BOT Adoption Date: February 06, 2014

Effective Date: October 01, 2014

FERC Filing Date: February 27, 2014

FERC Approval Date: June 30, 2014

FERC Docket No.: RD14-4-000

Project No.: 2008-12

Reliability Adjustment RFI

Request to modify an Implemented Interchange Schedule for reliability purposes.

BOT Adoption Date: October 29, 2008

Effective Date: July 01, 2010

FERC Filing Date: February 05, 2009

FERC Approval Date: December 17, 2009

FERC Docket No.: RM09-8-000

Project No.: 2007-14

Reliability Coordinator (RC)

The entity that is the highest level of authority who is responsible for the Reliable Operation of the Bulk Electric System, has the Wide Area view of the Bulk Electric System, and has the operating tools, processes and procedures, including the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations. The Reliability Coordinator has the purview that is broad enough to enable the calculation of Interconnection Reliability Operating Limits, which may be based on the operating parameters of transmission systems beyond any Transmission Operator's vision.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Reliability Coordinator Area

The collection of generation, transmission, and loads within the boundaries of the Reliability Coordinator. Its boundary coincides with one or more Balancing Authority Areas.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000-Version 0 Reliability Standards](#)

Reliability Coordinator Information System (RCIS)

The system that Reliability Coordinators use to post messages and share operating information in real time.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000-Version 0 Reliability Standards](#)

Reliability Standard

A requirement, approved by the United States Federal Energy Regulatory Commission under Section 215 of the Federal Power Act, or approved or recognized by an applicable governmental authority in other jurisdictions, to provide for Reliable Operation of the Bulk-Power System. The term includes requirements for the operation of existing Bulk-Power System facilities, including cybersecurity protection, and the design of planned additions or modifications to such facilities to the extent necessary to provide for Reliable Operation of the Bulk-Power System, but the term does not include any requirement to enlarge such facilities or to construct new transmission capacity or generation capacity.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Reliable Operation

Operating the elements of the [Bulk-Power System] within equipment and electric system thermal, voltage, and stability limits so that instability, uncontrolled separation, or cascading failures of such system will not occur as a result of a sudden disturbance, including a cybersecurity incident, or unanticipated failure of system elements.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Remedial Action Scheme (RAS)

A scheme designed to detect predetermined System conditions and automatically take corrective actions that may include, but are not limited to, adjusting or tripping generation (MW and Mvar), tripping load, or reconfiguring a System(s). RAS accomplish objectives such as:

- Meet requirements identified in the NERC Reliability Standards;
- Maintain Bulk Electric System (BES) stability;
- Maintain acceptable BES voltages;

- Maintain acceptable BES power flows;
- Limit the impact of Cascading or extreme events.

The following do not individually constitute a RAS:

- a. Protection Systems installed for the purpose of detecting Faults on BES Elements and isolating the faulted Elements
- b. Schemes for automatic underfrequency load shedding (UFLS) and automatic undervoltage load shedding (UVLS) comprised of only distributed relays
- c. Out-of-step tripping and power swing blocking
- d. Automatic reclosing schemes
- e. Schemes applied on an Element for non-Fault conditions, such as, but not limited to, generator loss-of-field, transformer top-oil temperature, overvoltage, or overload to protect the Element against damage by removing it from service
- f. Controllers that switch or regulate one or more of the following: series or shunt reactive devices, flexible alternating current transmission system (FACTS) devices, phase-shifting transformers, variable-frequency transformers, or tap-changing transformers; and, that are located at and monitor quantities solely at the same station as the Element being switched or regulated
- g. FACTS controllers that remotely switch static shunt reactive devices located at other stations to regulate the output of a single FACTS device
- h. Schemes or controllers that remotely switch shunt reactors and shunt capacitors for voltage regulation that would otherwise be manually switched
- i. Schemes that automatically de-energize a line for a non-Fault operation when one end of the line is open
- j. Schemes that provide anti-islanding protection (e.g., protect load from effects of being isolated with generation that may not be capable of maintaining acceptable frequency and voltage)
- k. Automatic sequences that proceed when manually initiated solely by a System Operator
- l. Modulation of HVdc or FACTS via supplementary controls, such as angle damping or frequency damping applied to damp local or inter-area oscillations
- m. Sub-synchronous resonance (SSR) protection schemes that directly detect sub-synchronous quantities (e.g., currents or torsional oscillations)
- n. Generator controls such as, but not limited to, automatic generation control (AGC), generation excitation [e.g. automatic voltage regulation (AVR) and power system stabilizers (PSS)], fast valving, and speed governing

BOT Adoption Date: November 13, 2014

Effective Date: April 01, 2017

FERC Filing Date: February 03, 2015

FERC Docket No.: RD16-5-000

FERC Approval Date: November 19, 2015

Project No.: [2010-05.2 Phase 2 of Protection Systems](#)

Removable Media

Storage media that:

1. are not Cyber Assets,
2. are capable of transferring executable code,
3. can be used to store, copy, move, or access data, and
4. are directly connected for 30 consecutive calendar days or less to a: BES Cyber Asset, network within an Electronic Security Perimeter (ESP) containing high or medium impact BES Cyber Systems, or Protected Cyber Asset associated with high or medium impact BES Cyber Systems.

Examples of Removable Media include, but are not limited to, floppy disks, compact disks, USB flash drives, external hard drives, and other flash memory cards/drives that contain nonvolatile memory.

BOT Adoption Date: February 09, 2017

Effective Date: January 01, 2020

FERC Filing Date: March 03, 2017

FERC Approval Date: April 19, 2018

Inactive Date: June 30, 2028

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Removable Media

Storage media that (i) are not Cyber Assets or Shared Cyber Infrastructure (SCI), (ii) are capable of transferring executable code, (iii) can be used to store, copy, move, or access data, and (iv) are directly connected for 30 consecutive calendar days or less to a BES Cyber Asset, SCI, a network protected by an Electronic Security Perimeter, or a Protected Cyber Asset.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Reportable Balancing Contingency Event (RBCE)

Any Balancing Contingency Event occurring within a one-minute interval of an initial sudden decline in the responsible entity's Reporting ACE that results in a loss of MW output less than or equal to its Most Severe Single Contingency (MSSC) , and greater than or equal to the lesser amount of:

- (i) 80% of its MSSC. Prior to any given calendar quarter, the 80% threshold may be reduced by the responsible entity upon written notification to its Regional Entity, or
- (ii) the amount listed below for the applicable Interconnection.

• Eastern Interconnection: 900 MW

• Western Interconnection: 500 MW

- ERCOT: 800 MW
- Quebec: 500 MW

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Docket No.: RD24-6-000

FERC Approval Date: April 29, 2024

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Reportable Cyber Security Incident

A Cyber Security Incident that compromised or disrupted: - A BES Cyber System that performs one or more reliability tasks of a functional entity; - An Electronic Security Perimeter of a high or medium impact BES Cyber System; or - An Electronic Access Control or Monitoring System of a high or medium impact BES Cyber System.

BOT Adoption Date: February 07, 2019

Effective Date: January 01, 2021

FERC Filing Date: March 07, 2019

FERC Docket No.: RD19-3-000

FERC Approval Date: June 20, 2019

Project No.: [2018-02 Modifications to CIP-008 Cyber Security Incident Reporting](#)

Reportable Cyber Security Incident

A Cyber Security Incident that compromised or disrupted:

- A BES Cyber System (BCS) that performs one or more reliability tasks of a functional entity;
- An Electronic Security Perimeter of a high or medium impact BCS;
- An Electronic Access Control or Monitoring Systems of a high or medium impact BCS; or
- Shared Cyber Infrastructure supporting a BCS.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Docket No.: RM24-8-000

FERC Approval Date: March 19, 2026

Project No.: [2016-02 Modifications to CIP Standards](#)

Reporting Area Control Error (Reporting ACE)

The scan rate values of a Balancing Authority Area's Area Control Error (ACE) measured in MW, which includes the error in scheduled interchange adjusted for Frequency Bias obligation, known meter error, and inadvertent

management. Reporting ACE is calculated as follows: $\text{Reporting ACE} = (\text{NIA} - \text{NIS}) - 10\text{B} (\text{FA} - \text{FS}) - \text{IME} + \text{IIM}$ Where:

- NIA = Actual Net Interchange.
- NIS = Scheduled Net Interchange.
- B = Frequency Bias Setting.
- FA = Actual Frequency.
- FS = Scheduled Frequency.
- IME = Interchange Meter Error.
- IIM = Inadvertent Interchange Management. (Term is expressed if a regional procedure exists, otherwise is null and is not included in the Balancing Authority's Reporting ACE.)
 - o In the Western Interconnection this term is IATEC

All NERC Interconnections operate using the principles of Tie Line Bias (TLB) control and require the use of an ACE equation similar to the Reporting ACE defined above. Any modification(s) to this specified Reporting ACE that is(are) implemented for all BAAs in an Interconnection and is(are) consistent with the following four principles of Tie Line Bias control will provide a valid alternative to this Reporting ACE equation:

1. Each individual portion of the Interconnection is included in exactly one BAA so that the sum of all BAAs' generation, Load, and losses is the same as total Interconnection generation, Load, and losses;
2. The algebraic sum of all BAAs' Scheduled Net Interchange is equal to zero at all times and the sum of all BAAs' Actual Net Interchange values is equal to zero at all times. This includes effects of ACE Diversity Interchange (ADI) implementations;
3. The use of a common Scheduled Frequency for all BAAs at all times; and,
4. Excludes metering or computational errors. (The inclusion and use of the IME term corrects for known metering or computational errors.)

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Request for Interchange (RFI)

A collection of data as defined in the NAESB Business Practice Standards submitted for the purpose of implementing bilateral Interchange between Balancing Authorities or an energy transfer within a single Balancing Authority.

BOT Adoption Date: February 06, 2014

Effective Date: October 01, 2014

FERC Filing Date: February 27, 2014

FERC Approval Date: June 30, 2014

FERC Docket No.: RD14-4-000

Project No.: 2008-12

Reserve Sharing Group (RSG)

A group whose members consist of two or more Balancing Authorities that collectively maintain, allocate, and supply Operating Reserves required for each Balancing Authority's use in recovering from contingencies within the group. Scheduling energy from an Adjacent Balancing Authority to aid recovery need not constitute reserve sharing provided the transaction is ramped in over a period the supplying party could reasonably be expected to load generation in (e.g., ten minutes). If the transaction is ramped in more quickly (e.g., between zero and ten minutes) then, for the purposes of recovery from a Reportable Balancing Contingency Event, the areas become a Reserve Sharing Group.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Reserve Sharing Group Reporting ACE

At any given time of measurement for the applicable Reserve Sharing Group (RSG), the algebraic sum of the Reporting ACEs (or equivalent as calculated at such time of measurement) of the Balancing Authorities participating in the RSG the time of measurement

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Resource Adequacy (ReliabilityFirst term)

The ability of supply-side and demand-side resources to meet the aggregate electrical demand (including losses)

BOT Adoption Date: August 05, 2009

Effective Date: May 23, 2011

FERC Approval Date: March 17, 2011

Project No.: [ReliabilityFirst](#)

Resource Planner

The entity that develops a long-term (generally one year and beyond) plan for the resource adequacy of specific loads (customer demand and energy requirements) within a Planning Authority area.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Response Rate

The Ramp Rate that a generating unit can achieve under normal operating conditions expressed in megawatts per minute (MW/Min).

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Ride-through

The plant/facility remains connected and continues to operate through voltage or frequency system disturbances.

BOT Adoption Date: October 08, 2024

Effective Date: October 01, 2026

FERC Filing Date: November 04, 2024

FERC Approval Date: July 24, 2025

FERC Docket No.: RM25-3-000

Project No.: [2020-02 Modifications to PRC-024 \(Generator Ride-through\)](#)

Right-of-Way (ROW)

The corridor of land under a transmission line(s) needed to operate the line(s). The width of the corridor is established by engineering or construction standards as documented in either construction documents, pre-2007 vegetation maintenance records, or by the blowout standard in effect when the line was built. The ROW width in no case exceeds

the applicable Transmission Owner's or applicable Generator Owner's legal rights but may be less based on the aforementioned criteria.

BOT Adoption Date: May 09, 2012

Effective Date: July 01, 2014

FERC Filing Date: July 30, 2012

FERC Approval Date: March 21, 2013

FERC Docket No.: RM12-16-000

Project No.: [2010-07 GOTO](#)

Scenario

Possible event.

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: Coordinate Operations

Schedule

(Verb) To set up a plan or arrangement for an Interchange Transaction. (Noun) An Interchange Schedule.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000-Version 0 Reliability Standards](#)

Scheduled Frequency

60.00 Hertz, except during a Time Error Correction

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Scheduled Net Interchange (NIS)

The algebraic sum of all scheduled megawatt transfers, including Dynamic Schedules, to and from all Adjacent Balancing Authority areas within the same Interconnection, including the effect of scheduled ramps. Scheduled megawatt transfers on asynchronous DC tie lines directly connected to another Interconnection are excluded from Scheduled Net Interchange.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Scheduling Entity

An entity responsible for approving and implementing Interchange Schedules.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Scheduling Path

The Transmission Service arrangements reserved by the Purchasing-Selling Entity for a Transaction.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Sending Balancing Authority

The Balancing Authority exporting the Interchange.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

Shared Cyber Infrastructure (SCI)

One or more programmable electronic devices, including the software that shares the devices' resources, that:

- Hosts one or more Virtual Cyber Assets (VCA) included in a BES Cyber Systems (BCS) or their associated Electronic Access Control or Monitoring Systems (EACMS) or Physical Access Control Systems (PACS); and hosts one or more VCAs that are not included in, or associated with, BCS of the same impact categorization; or
- Provides storage resources required for system functionality of one or more Cyber Assets or VCAs included in a BCS or their associated EACMS or PACS; and also for one or more Cyber Assets or VCAs that are not included in, or associated with, BCS of the same impact categorization. SCI does not include the supported VCAs or Cyber Assets with which it shares its resources.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Docket No.: RM24-8-000

FERC Approval Date: March 19, 2026

Project No.: [2016-02 Modifications to CIP Standards](#)

Sink Balancing Authority

The Balancing Authority in which the load (sink) is located for an Interchange Transaction and any resulting Interchange Schedule.

BOT Adoption Date: February 06, 2014

Effective Date: October 01, 2014

FERC Filing Date: February 27, 2014

FERC Docket No.: RD14-4-000

FERC Approval Date: June 30, 2014

Project No.: 2008-12

Source Balancing Authority

The Balancing Authority in which the generation (source) is located for an Interchange Transaction and for any resulting Interchange Schedule.

BOT Adoption Date: February 06, 2014

Effective Date: October 01, 2014

FERC Filing Date: February 27, 2014

FERC Approval Date: June 30, 2014

FERC Docket No.: RD14-4-000

Project No.: 2008-12

Special Protection System (Remedial Action Scheme) (SPS)

See “Remedial Action Scheme”

BOT Adoption Date: May 05, 2016

Effective Date: April 01, 2017

FERC Filing Date: May 11, 2016

FERC Approval Date: June 23, 2016

FERC Docket No.: RD16-5-000

Project No.: [2010-05.2 Phase 2 of Protection Systems](#)

Spinning Reserve

Unloaded generation that is synchronized and ready to serve additional demand.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Stability

The ability of an electric system to maintain a state of equilibrium during normal and abnormal conditions or disturbances.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Stability Limit

The maximum power flow possible through some particular point in the system while maintaining stability in the entire system or the part of the system to which the stability limit refers.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Supervisory Control and Data Acquisition (SCADA)

A system of remote control and telemetry used to monitor and control the transmission system.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Supplemental Regulation Service

A method of providing Regulation Service in which the Balancing Authority providing the Regulation Service receives a signal representing all or a portion of the other Balancing Authority's Reporting ACE.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Surge

A transient variation of current, voltage, or power flow in an electric circuit or across an electric system.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Sustained Outage

The deenergized condition of a transmission line resulting from a fault or disturbance following an unsuccessful automatic reclosing sequence and/or unsuccessful manual reclosing procedure.

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: 2007-07

System

A combination of generation, transmission, and distribution components.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

System Operating Limit

All Facility Ratings, System Voltage Limits, and stability limits, applicable to specified System configurations, used in Bulk Electric System operations for monitoring and assessing pre- and postContingency operating states.

BOT Adoption Date: May 13, 2021

Effective Date: April 01, 2024

FERC Filing Date: June 28, 2021

FERC Approval Date: March 04, 2022

FERC Docket No.: RD22-2-000

Project No.: [2015-09 Establish and Communicate System Operating Limits](#)

System Operator

An individual at a Control Center of a Balancing Authority, Transmission Operator, or Reliability Coordinator, who operates or directs the operation of the Bulk Electric System (BES) in Real-time.

BOT Adoption Date: February 06, 2014

Effective Date: July 01, 2016

FERC Filing Date: March 07, 2014

FERC Approval Date: June 19, 2014

FERC Docket No.: RD14-7-000

Project No.: [2010-01 Training](#)

System Voltage Limit

The maximum and minimum steady-state voltage limits (both normal and emergency) that provide for acceptable System performance.

BOT Adoption Date: May 13, 2021

Effective Date: April 01, 2024

FERC Filing Date: June 28, 2021

FERC Approval Date: March 04, 2022

FERC Docket No.: RD22-2-000

Project No.: [2015-09 Establish and Communicate System Operating Limits](#)

Telemetry

The process by which measurable electrical quantities from substations and generating stations are instantaneously transmitted to the control center, and by which operating commands from the control center are transmitted to the substations and generating stations.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Thermal Rating

The maximum amount of electrical current that a transmission line or electrical facility can conduct over a specified time period before it sustains permanent damage by overheating or before it sags to the point that it violates public safety requirements.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Tie Line

A circuit connecting two Balancing Authority Areas.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Tie Line Bias (TLB)

A mode of Automatic Generation Control that allows the Balancing Authority to 1.) maintain its Interchange Schedule and 2.) respond to Interconnection frequency error.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Time Error

The difference between the Interconnection time measured at the Balancing Authority(ies) and the time specified by the National Institute of Standards and Technology. The difference is caused by the accumulation of Frequency Error over a given period.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

Time Error Correction

A manual offset to the Interconnection's Scheduled Frequency to return the Interconnection's Time Error to a predetermined range.

BOT Adoption Date: February 15, 2024

Effective Date: July 01, 2025

FERC Filing Date: March 08, 2024

FERC Approval Date: April 29, 2024

FERC Docket No.: RD24-6-000

Project No.: [2022-01 Reporting ACE Definition and Associated Terms](#)

TLR (Transmission Loading Relief) Log

Report required to be filed after every TLR Level 2 or higher in a specified format. The NERC IDC prepares the report for review by the issuing Reliability Coordinator. After approval by the issuing Reliability Coordinator, the report is electronically filed in a public area of the NERC Web site.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Total Flowgate Capability (TFC)

The maximum flow capability on a Flowgate, is not to exceed its thermal rating, or in the case of a flowgate used to represent a specific operating constraint (such as a voltage or stability limit), is not to exceed the associated System Operating Limit.

BOT Adoption Date: August 22, 2008

Effective Date: April 01, 2011

FERC Filing Date: August 29, 2008

FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Total Internal Demand

The Demand of a metered system, which includes the Firm Demand, plus any controllable and dispatchable DSM Load and the Load due to the energy losses incurred within the boundary of the metered system.

BOT Adoption Date: May 06, 2014

Effective Date: July 01, 2016

FERC Filing Date: May 13, 2014

FERC Approval Date: February 19, 2015

FERC Docket No.: RM14-12-000

Project No.: 2010-04

Total Transfer Capability (TTC)

The amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected transmission systems by way of all transmission lines (or paths) between those areas under specified system conditions.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Transaction

See Interchange Transaction.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Transfer Capability

The measure of the ability of interconnected electric systems to move or transfer power in a reliable manner from one area to another over all transmission lines (or paths) between those areas under specified system conditions. The units of transfer capability are in terms of electric power, generally expressed in megawatts (MW). The transfer capability from "Area A" to "Area B" is not generally equal to the transfer capability from "Area B" to "Area A."

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Transfer Distribution Factor

See Distribution Factor.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Transient Cyber Asset (TCA)

A Cyber Asset that is:

1. capable of transmitting or transferring executable code,
2. not included in a BES Cyber System,
3. not a Protected Cyber Asset (PCA) associated with high or medium impact BES Cyber Systems, and
4. directly connected (e.g., using Ethernet, serial, Universal Serial Bus, or wireless including near field or Bluetooth communication) for 30 consecutive calendar days or less to a:

- BES Cyber Asset,
- network within an Electronic Security Perimeter (ESP) containing high or medium impact BES Cyber Systems, or
- PCA associated with high or medium impact BES Cyber Systems.

Examples of Transient Cyber Assets include, but are not limited to, Cyber Assets used for data transfer, vulnerability assessment, maintenance, or troubleshooting purposes.

BOT Adoption Date: February 09, 2017

Effective Date: January 01, 2020

FERC Filing Date: March 03, 2017

FERC Approval Date: April 19, 2018

Inactive Date: June 30, 2028

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Transient Cyber Asset (TCA)

A Cyber Asset or Virtual Cyber Asset (VCA) that is:

1. Capable of transmitting or transferring executable code;
2. Not included in a BES Cyber System (BCS);
3. Not a Protected Cyber Asset (PCA) associated with high or medium impact BCS; and
4. Connected for 30 consecutive calendar days or less:

- On a network protected by an Electronic Security Perimeter containing high or medium impact BCS; or
- Directly (e.g., using Ethernet, serial, Universal Serial Bus, or wireless including near field or Bluetooth communication) to a:

- BES Cyber Asset;
- Shared Cyber Infrastructure; or
- PCA associated with high or medium impact BCS.

Virtual machines hosted on a physical Transient Cyber Asset (TCA) are treated as software on that physical TCA. Examples of TCAs include, but are not limited to, Cyber Assets or VCAs used for data transfer, vulnerability assessment, maintenance, or troubleshooting purposes.

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Transmission

An interconnected group of lines and associated equipment for the movement or transfer of electric energy between points of supply and points at which it is transformed for delivery to customers or is delivered to other electric systems.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Transmission Constraint

A limitation on one or more transmission elements that may be reached during normal or contingency system operations.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Transmission Customer

1. Any eligible customer (or its designated agent) that can or does execute a Transmission Service agreement or can or does receive Transmission Service. 2. Any of the following entities: Generator Owner, Load-Serving Entity, or Purchasing-Selling Entity.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Transmission Line

A system of structures, wires, insulators and associated hardware that carry electric energy from one point to another in an electric power system. Lines are operated at relatively high voltages varying from 69 kV up to 765 kV, and are capable of transmitting large quantities of electricity over long distances.

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: 2007-07

Transmission Operator

The entity responsible for the reliability of its “local” transmission system, and that operates or directs the operations of the transmission Facilities.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Transmission Operator Area

The collection of Transmission assets over which the Transmission Operator is responsible for operating.

BOT Adoption Date: August 22, 2008

Effective Date: April 01, 2011

FERC Filing Date: August 29, 2008

FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Transmission Owner

The entity that owns and maintains transmission Facilities.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Transmission Planner

The entity that develops a long-term (generally one year and beyond) plan for the reliability (adequacy) of the interconnected bulk electric transmission systems within its portion of the Planning Authority area.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Transmission Reliability Margin

The amount of transmission transfer capability necessary to provide reasonable assurance that the interconnected transmission network will be secure. TRM accounts for the inherent uncertainty in system conditions and the need for operating flexibility to ensure reliable system operation as system conditions change.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000-Version 0 Reliability Standards](#)

Transmission Reliability Margin Implementation Document

A document that describes the implementation of a Transmission Reliability Margin methodology, and provides information related to a Transmission Operator's calculation of TRM.

BOT Adoption Date: August 22, 2008

Effective Date: April 01, 2011

FERC Filing Date: August 29, 2008

FERC Approval Date: November 24, 2009

FERC Docket No.: RM08-19-000

Project No.: 2006-07

Transmission Service

Services provided to the Transmission Customer by the Transmission Service Provider to move energy from a Point of Receipt to a Point of Delivery.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

FERC Docket No.: RM06-16-000

Project No.: [000 - Version 0 Reliability Standards](#)

Transmission Service Provider (TSP)

The entity that administers the transmission tariff and provides Transmission Service to Transmission Customers under applicable Transmission Service agreements.

BOT Adoption Date: November 05, 2015

Effective Date: July 01, 2016

FERC Filing Date: December 07, 2015

FERC Approval Date: January 21, 2016

FERC Docket No.: RD16-3-000

Project No.: 2015-04

Undervoltage Load Shedding Program (UVLS Program)

An automatic load shedding program, consisting of distributed relays and controls, used to mitigate undervoltage conditions impacting the Bulk Electric System (BES), leading to voltage instability, voltage collapse, or Cascading. Centrally controlled undervoltage-based load shedding is not included.

BOT Adoption Date: November 13, 2014

Effective Date: April 01, 2017

FERC Approval Date: November 19, 2015

FERC Docket No.: RD15-5-000

Project No.: 2008-02

Vegetation

All plant material, growing or not, living or dead.

BOT Adoption Date: February 07, 2006

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

Vegetation Inspection

The systematic examination of vegetation conditions on a Right-of-Way and those vegetation conditions under the applicable Transmission Owner's or applicable Generator Owner's control that are likely to pose a hazard to the line(s) prior to the next planned maintenance or inspection. This may be combined with a general line inspection.

BOT Adoption Date: May 09, 2012

Effective Date: July 01, 2014

FERC Approval Date: March 21, 2013

FERC Docket No.: RM12-16-000

Project No.: [2010-07 GOTO](#)

Virtual Cyber Asset (New Definition) (VCA)

A logical instance of an operating system or firmware, currently executing on a virtual machine hosted on a BES Cyber Asset; Electronic Access Control or Monitoring System; Physical Access Control System; Protected Cyber Asset; or Shared Cyber Infrastructure (SCI). Virtual Cyber Assets (VCAs) do not include:

- Logical instances that are being actively remediated in an environment that isolates routable connectivity from BES Cyber Systems;
- Dormant file-based images that contain operating systems or firmware; or
- SCI or Cyber Assets that host VCAs. Application containers are considered software of VCAs or Cyber Assets

BOT Adoption Date: May 09, 2024

Effective Date: July 01, 2028

FERC Filing Date: July 10, 2024

FERC Approval Date: March 19, 2026

FERC Docket No.: RM24-8-000

Project No.: [2016-02 Modifications to CIP Standards](#)

Wide Area

The entire Reliability Coordinator Area as well as the critical flow and status information from adjacent Reliability Coordinator Areas as determined by detailed system studies to allow the calculation of Interconnected Reliability Operating Limits.

BOT Adoption Date: February 08, 2005

Effective Date: June 18, 2007

FERC Filing Date: April 04, 2006

FERC Approval Date: March 16, 2007

Year One

The first twelve month period that a Planning Coordinator or a Transmission Planner is responsible for assessing. For an assessment started in a given calendar year, Year One includes the forecasted peak Load period for one of the following two calendar years. For example, if a Planning Assessment was started in 2011, then Year One includes the forecasted peak Load period for either 2012 or 2013.

BOT Adoption Date: January 24, 2011

Effective Date: April 01, 2013

FERC Filing Date: January 28, 2011

FERC Approval Date: November 17, 2011

FERC Docket No.: RM08-19-000

Project No.: 2010-10

Year One (ReliabilityFirst term)

The planning year that begins with the upcoming annual Peak Period (Board withdrew approval 11/7/2012)

BOT Adoption Date: August 05, 2009

Effective Date: May 23, 2011

FERC Approval Date: March 17, 2011

Project No.: [ReliabilityFirst](#)
