

Glossary of Terms Used in NERC Reliability Standards

Updated August 28, 2024

This Glossary lists each term that was defined for use in one or more of NERC's continent-wide or Regional Reliability Standards and adopted by the NERC Board of Trustees from February 8, 2005 through August 28, 2024

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The first three sections identify all terms that have been adopted by the NERC Board of Trustees for use in continent-wide standards; the Regional definitions section identifies all terms that have been adopted by the NERC Board of Trustees for use in regional standards.

Most of the terms identified in this glossary were adopted as part of the development of NERC's initial set of reliability standards, called the "Version 0" standards. Subsequent to the development of Version 0 standards, new definitions have been developed and approved per NERC's Reliability Standards Development Process, and added to this glossary following board adoption, FERC filing, and final Order approving the definition.

Any comments regarding this glossary should be reported to the [NERC Help Desk](#). Select "Standards" from the "Service" drop-down menu and "Other" from the Standards Subcategory drop-down menu.

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| Continent-wide Term | Link to Project Page | Acronym | BOT Adoption Date | FERC Approval Date | Effective Date | Definition |
|---|---|---------|-------------------|--------------------|----------------|---|
| Actual Frequency (FA) | Project-2010-14.2.1-Phase-2 | | 2/11/2016 | | 7/1/2016 | The Interconnection frequency measured in Hertz (Hz) |
| Actual Net Interchange (NIA) | Project 2010-14.2.1. Phase 2 | | 2/11/2016 | | 7/1/2016 | 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. |
| Adequacy | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Adjacent Balancing Authority | Project 2008-12 | | 2/6/2014 | 6/30/2014 | 10/1/2014 | 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. |
| Adverse Reliability Impact | Coordinate Operations | | 2/7/2006 | 3/16/2007 | | 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. |
| After the Fact | Project 2007-14 | ATF | 10/29/2008 | 12/17/2009 | | A time classification assigned to an RFI when the submittal time is greater than one hour after the start time of the RFI. |
| Agreement | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | A contract or arrangement, either written or verbal and sometimes enforceable by law. |
| Alternative Interpersonal Communication | Project 2006-06 | | 11/7/2012 | 4/16/2015 | 10/1/2015 | 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. |
| Altitude Correction Factor | Project 2007-07 | | 2/7/2006 | 3/16/2007 | | 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. |
| Ancillary Service | Version 0 Reliability | | 2/8/2005 | 3/16/2007 | | Those services that are necessary to support the transmission of capacity and energy from resources to loads while maintaining reliable operation of the |

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| | Standards | | | | | Transmission Service Provider's transmission system in accordance with good utility practice. (From FERC order 888-A.) |
| Anti-Aliasing Filter | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | An analog filter installed at a metering point to remove the high frequency components of the signal over the AGC sample period. |
| Area Control Error | Version 0 Reliability Standards | ACE | 12/19/2012 | 10/16/2013 | 4/1/2014 | The instantaneous difference between a Balancing Authority's net actual and scheduled interchange, taking into account the effects of Frequency Bias, correction for meter error, and Automatic Time Error Correction (ATEC), if operating in the ATEC mode. ATEC is only applicable to Balancing Authorities in the Western Interconnection. |
| Area Interchange Methodology | Project 2006-07 | | 8/22/2008 | 11/24/2009 | | 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 |
| Arranged Interchange | Project 2008-12 | | 2/6/2014 | 6/30/2014 | 10/1/2014 | The state where a Request for Interchange (initial or revised) has been submitted for approval. |
| Attaining Balancing Authority | Project 2008-12 | | 2/6/2014 | 6/30/2014 | 10/1/2014 | A Balancing Authority bringing generation or load into its effective control boundaries through a Dynamic Transfer from the Native Balancing Authority. |
| Automatic Generation Control | Project 2010-14.2.1. Phase 2 | AGC | 2/11/2016 | 9/20/2017 | 1/1/2019 | A process designed and used to adjust a Balancing Authority Areas' Demand and resources to help maintain the Reporting ACE in that of a Balancing Authority Area within the bounds required by applicable NERC Reliability Standards. |
| Automatic Time Error Correction (IATEC) | Project 2010-14.2.1. Phase 2 | | 2/11/2016 | | 7/1/2016 | The addition of a component to the ACE equation for the Western Interconnection that modifies the control point for the purpose of continuously paying back Primary Inadvertent Interchange to correct accumulated time error. Automatic Time Error Correction is only applicable in the Western Interconnection. |

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| | | | | | | $I_{ATEC} = \frac{PII_{accum}^{on/off\ peak}}{(1-Y) \cdot H}$ <p>when operating in Automatic Time error correction Mode. The absolute value of IATEC shall not exceed Lmax.</p> <p>IATEC shall be zero when operating in any other AGC mode.</p> <ul style="list-style-type: none"> Lmax is the maximum value allowed for IATEC set by each BA between $0.2 \cdot Bi$ and L10, $0.2 \cdot Bi \leq Lmax \leq L10$. $L10 = 1.65 \cdot \epsilon_{10} \sqrt{(-10B_i)(-10B_s)}$. ϵ_{10} is a constant derived from the targeted frequency bound. It is the targeted root-mean-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. $Y = Bi / BS$. $H =$ Number of hours used to payback primary inadvertent interchange energy. The value of H is set to 3. $Bi =$ Frequency Bias Setting for the Balancing Authority Area (MW / 0.1 Hz). $BS =$ Sum of the minimum Frequency Bias Settings for the Interconnection (MW / 0.1 Hz). Primary Inadvertent Interchange (PIIhourly) is $(1-Y) \cdot (I_{actual} - Bi \cdot \Delta TE/6)$ 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: $\Delta TE = TE_{end\ hour} - TE_{begin\ hour} - TD_{adj} - (t) \cdot (TE_{offset})$ TD_{adj} is the Reliability Coordinator adjustment for differences with Interconnection time monitor control center clocks. t is the number of minutes of manual Time Error Correction that occurred during the hour. TE_{offset} is 0.000 or +0.020 or -0.020. PII_{accum} is the Balancing Authority Area's accumulated PIIhourly in MWh. An On-Peak and Off- Peak accumulation accounting is required, where: $PII_{accum}^{on/off\ peak} = \text{last period's } PII_{accum}^{on/off\ peak} + PII_{hourly}$ |

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| Available Flowgate Capability | Project 2006-07 | AFC | 8/22/2008 | 11/24/2009 | | 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. |
| Available Transfer Capability | Project 2006-07 | ATC | 8/22/2008 | 11/24/2009 | | 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 |
| Available Transfer Capability Implementation Document | Project 2006-07 | ATCID | 8/22/2008 | 11/24/2009 | | 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. |
| Balancing Authority | Project 2010-14.2.1. Phase 2 | | 2/11/2016 | 9/20/2017 | 1/1/2019 | 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. |
| Balancing Authority Area | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Balancing Contingency Event | Project 2010-14.1 Phase 1 | | 11/5/2015 | 1/19/2017 | 1/1/2018 | <p>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.</p> <p>A. Sudden loss of generation:</p> <ul style="list-style-type: none"> a. Due to <ul style="list-style-type: none"> 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; b. And, that causes an unexpected change to the responsible entity's ACE; |

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| | | | | | | <p>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.</p> <p>c. Sudden restoration of a Demand that was used as a resource that causes an unexpected change to the responsible entity's ACE.</p> |
| Base Load | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The minimum amount of electric power delivered or required over a given period at a constant rate. |
| BES Cyber Asset | Project 2014-02 | BCA | 2/12/2015 | 1/21/2016 | 7/1/2016 | <p>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.</p> <p>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.</p> |
| BES Cyber System | Project 2008-06 | | 11/26/2012 | 11/22/2013 | 7/1/2016 | One or more BES Cyber Assets logically grouped by a responsible entity to perform one or more reliability tasks for a functional entity. |
| BES Cyber System Information | Project 2008-06 | | 11/26/2012 | 11/22/2013 | 7/1/2016 | <p>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.</p> <p>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.</p> |
| Blackstart Resource | Project 2015-04 | | 11/5/2015 | 1/21/2016 | 7/1/2016 | A generating unit(s) and its associated set of equipment which has the |

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| | | | | | | 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. |
| Block Dispatch | Project 2006-07 | | 8/22/2008 | 11/24/2009 | | 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). |
| Bulk Electric System | Project 2010-17 | BES | 11/21/2013 | 3/20/2014 | 7/1/2014 (Please see the Implementation Plan for Phase 2 Compliance obligations.) | <p>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.</p> <p>Inclusions:</p> <ul style="list-style-type: none"> •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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> a) The individual resources, and b) The system designed primarily for delivering capacity from the point |

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| | | | | | | <p>where those resources aggregate to greater than 75 MVA to a common point of connection at a voltage of 100 kV or above.</p> <ul style="list-style-type: none"> • 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 <p>Exclusions:</p> <ul style="list-style-type: none"> • E1 - Radial systems: A group of contiguous transmission Elements that emanates from a single point of connection of 100 kV or higher and: <ol style="list-style-type: none"> 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). <p>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.</p> <p>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.</p> <ul style="list-style-type: none"> • 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 |

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| | | | | | | <p>applicable regulatory authority.</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> 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). <p>Note - Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process.</p> |
| Bulk-Power System | Project 2015-04 | | 11/5/2015 | 1/21/2016 | 7/1/2016 | <p>(A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and</p> <p>(B) electric energy from generation facilities needed to maintain transmission system reliability.</p> <p>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.)</p> |

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| Burden | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Bus-tie Breaker | Project 2006-02 | | 8/4/2011 | 10/17/2013 | 1/1/2015 | A circuit breaker that is positioned to connect two individual substation bus configurations. |
| Capacity Benefit Margin | Version 0 Reliability Standards | CBM | 2/8/2005 | 3/16/2007 | | 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. |
| Capacity Benefit Margin Implementation Document | Project 2006-07 | CBMID | 11/13/2008 | 11/24/2009 | | A document that describes the implementation of a Capacity Benefit Margin methodology. |
| Cascading | Project 2015-04 | | 11/5/2015 | 1/21/2016 | 7/1/2016 | 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. |
| CIP Exceptional Circumstance | Project 2008-06 | | 11/26/2012 | 11/22/2013 | 7/1/2016 | 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. |
| CIP Senior Manager | Project 2008-06 | | 11/26/2012 | 11/22/2013 | 7/1/2016 | 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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| Clock Hour | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The 60-minute period ending at :00. All surveys, measurements, and reports are based on Clock Hour periods unless specifically noted. |
| Cogeneration | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | Production of electricity from steam, heat, or other forms of energy produced as a by-product of another process. |
| Compliance Monitor | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The entity that monitors, reviews, and ensures compliance of responsible entities with reliability standards. |
| Composite Confirmed Interchange | Project 2008-12 | | 2/6/2014 | 6/30/2014 | 10/1/2014 | 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. |
| Composite Protection System | 2010-05.1 | | 8/14/2014 | 5/13/2015 | 7/1/2016 | 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. |
| Confirmed Interchange | Project 2008-12 | | 2/6/2014 | 6/30/2014 | 10/1/2014 | The state where no party has denied and all required parties have approved the Arranged Interchange. |
| Congestion Management Report | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Consequential Load Loss | Project 2006-02 | | 8/4/2011 | 10/17/2013 | 1/1/2015 | 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. |
| Constrained Facility | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | A transmission facility (line, transformer, breaker, etc.) that is approaching, is at, or is beyond its System Operating Limit or Interconnection Reliability Operating Limit. |
| Contact Path | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | An agreed upon electrical path for the continuous flow of electrical power between the parties of an Interchange Transaction. |

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| Contingency | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch or other electrical element. |
| Contingency Event Recovery Period | Project 2010-14.1 Phase 1 | | 11/5/2015 | 1/19/2017 | 1/1/2018 | 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. |
| Contingency Reserve | Project 2010-14.1 Phase 1 | | 11/5/2015 | 1/19/2017 | 1/1/2018 | 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: <ul style="list-style-type: none"> • 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. |
| Contingency Reserve Restoration Period | Project 2010-14.1 Phase 1 | | 11/5/2015 | 1/19/2017 | 1/1/2018 | A period not exceeding 90 minutes following the end of the Contingency Event Recovery Period. |
| Control Center | Project 2008-06 | | 11/26/2012 | 11/22/2013 | 7/1/2016 | 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. |
| Control Performance Standard | Version 0 Reliability Standards | CPS | 2/8/2005 | 3/16/2007 | | The reliability standard that sets the limits of a Balancing Authority's Area Control Error over a specified time period. |
| Corrective Action Plan | Phase III-IV Planning Standards - Archive | | 2/7/2006 | 3/16/2007 | | A list of actions and an associated timetable for implementation to remedy a specific problem. |

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| Cranking Path | Phase III-IV Planning Standards - Archive | | 5/2/2006 | 3/16/2007 | | 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. |
| Curtailment | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | A reduction in the scheduled capacity or energy delivery of an Interchange Transaction. |
| Curtailment Threshold | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The minimum Transfer Distribution Factor which, if exceeded, will subject an Interchange Transaction to curtailment to relieve a transmission facility constraint. |
| Cyber Assets | Project 2008-06 | | 11/26/2012 | 11/22/2013 | 7/1/2016 | Programmable electronic devices, including the hardware, software, and data in those devices. |
| Cyber Security Incident | Project 2018-02 Modifications to CIP-008 Cyber Security Incident Reporting | | 2/7/2019 | 6/20/2019 | 1/1/2021 | A malicious act or suspicious event that: <ul style="list-style-type: none"> • 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 |
| Delayed Fault Clearing | Determine Facility Ratings, Operating Limits, and Transfer Capabilities | | 11/1/2006 | 12/27/2007 | | 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. |
| Demand | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Demand-Side Management | Project 2010-04 | DSM | 5/6/2014 | 2/19/2015 | 7/1/2016 | All activities or programs undertaken by any applicable entity to achieve a reduction in Demand. |
| Dial-up Connectivity | Project 2008-06 | | 11/26/2012 | 11/22/2013 | 7/1/2016 | 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. |

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| Direct Control Load Management | Project 2008-06 | DCLM | 2/8/2005 | 3/16/2007 | | 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. |
| Dispatch Order | Project 2006-07 | | 8/22/2008 | 11/24/2009 | | 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. |
| Dispersed Load by Substations | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | Substation load information configured to represent a system for power flow or system dynamics modeling purposes, or both. |
| Distribution Factor | Version 0 Reliability Standards | DF | 2/8/2005 | 3/16/2007 | | The portion of an Interchange Transaction, typically expressed in per unit that flows across a transmission facility (Flowgate). |
| Distribution Provider | Project 2015-04 | DP | 11/5/2015 | 1/21/2016 | 7/1/2016 | 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 |
| Disturbance | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | <ol style="list-style-type: none"> 1. An unplanned event that produces an abnormal system condition. 2. Any perturbation to the electric system. 3. The unexpected change in ACE that is caused by the sudden failure of generation or interruption of load. |
| Disturbance Control Standard | Version 0 Reliability Standards | DCS | 2/8/2005 | 3/16/2007 | | 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. |
| Disturbance Monitoring Equipment | Phase III-IV Planning Standards | DME | 8/2/2006 | 3/16/2007 | | <p>Devices capable of monitoring and recording system data pertaining to a Disturbance. Such devices include the following categories of recorders* :</p> <ul style="list-style-type: none"> • 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. <p>Dynamic Disturbance Recorders (DDR), which record incidents that</p> |

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| | | | | | | <p>portray power system behavior during dynamic events such as low-frequency (0.1 Hz – 3 Hz) oscillations and abnormal frequency or voltage excursions</p> <p>*Phasor Measurement Units and any other equipment that meets the functional requirements</p> |
| Dynamic Interchange Schedule or Dynamic Schedule | Project 2008-12 | | 2/6/2014 | 6/30/2014 | 10/1/2014 | 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' control ACE equations (or alternate control processes). |
| Dynamic Transfer | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Economic Dispatch | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The allocation of demand to individual generating units on line to effect the most economical production of electricity. |
| Electrical Energy | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The generation or use of electric power by a device over a period of time, expressed in kilowatthours (kWh), megawatthours (MWh), or gigawatthours (GWh). |
| Electronic Access Control or Monitoring Systems | Project 2008-06 Order 706 | EACMS | 11/26/2012 | 11/22/2013 | 7/1/2016 | 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. |
| Electronic Access Point | Project 2008-06 Order 706 | EAP | 11/26/2012 | 11/22/2013 | 7/1/2016 | 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. |
| Electronic Security Perimeter | Project 2008-06 Order 706 | ESP | 11/26/2012 | 11/22/2013 | 7/1/2016 | The logical border surrounding a network to which BES Cyber Systems are connected using a routable protocol. |
| Element | Project 2015-04 | | 11/5/2015 | 1/21/2016 | 7/1/2016 | 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. |

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| Emergency or BES Emergency | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Emergency Rating | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Emergency Request for Interchange | Project 2007-14 Coordinate Interchange | Emergency RFI | 10/29/2008 | 12/17/2009 | | Request for Interchange to be initiated for Emergency or Energy Emergency conditions. |
| Energy Emergency | Version 0 | | 11/13/2014 | 11/19/2015 | 4/1/2017 | 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. |
| Equipment Rating | Determine Facility Ratings, Operating Limits, and Transfer Capabilities | | 2/7/2006 | 3/16/2007 | | 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. |
| Existing Transmission Commitments | Project 2006-07 | ETC | 8/22/2008 | 11/24/2009 | | Committed uses of a Transmission Service Provider's Transmission system considered when determining ATC or AFC. |
| External Routable Connectivity | Project 2008-06 Order 706 | | 11/26/2012 | 11/22/2013 | 7/1/2016 | 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. |
| Facility | Determine Facility Ratings, Operating Limits, and Transfer Capabilities | | 2/7/2006 | 3/16/2007 | | 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.) |

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| Facility Rating | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Fault | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | An event occurring on an electric system such as a short circuit, a broken wire, or an intermittent connection. |
| Fire Risk | Project 2007-07 | | 2/7/2006 | 3/16/2007 | | The likelihood that a fire will ignite or spread in a particular geographic area. |
| Firm Demand | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | That portion of the Demand that a power supplier is obligated to provide except when system reliability is threatened or during emergency conditions. |
| Firm Transmission Service | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The highest quality (priority) service offered to customers under a filed rate schedule that anticipates no planned interruption. |
| Flashover | Project 2007-07 | | 2/7/2006 | 3/16/2007 | | 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. |
| Flowgate | Project 2006-07 | | 8/22/2008 | 11/24/2009 | | <ol style="list-style-type: none"> 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. |
| Flowgate Methodology | Version 0 Reliability Standards | | 8/22/2008 | 11/24/2009 | | 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). |

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| Forced Outage | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | <ol style="list-style-type: none"> 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. |
| Frequency Bias | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Frequency Bias Setting | Project 2007-12 | | 2/7/2013 | 1/16/2014 | 4/1/2015 | A number, either fixed or variable, usually expressed in MW/0.1 Hz, included in a Balancing Authority's Area Control Error equation to account for the Balancing Authority's inverse Frequency Response contribution to the Interconnection, and discourage response withdrawal through secondary control systems. |
| Frequency Deviation | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | A change in Interconnection frequency. |
| Frequency Error | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The difference between the actual and scheduled frequency. (FA – FS) |
| Frequency Regulation | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Frequency Response | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | <p>(Equipment) The ability of a system or elements of the system to react or respond to a change in system frequency.</p> <p>(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).</p> |
| Frequency Response Measure | Project 2007-12 | FRM | 2/7/2013 | 1/16/2014 | 4/1/2015 | 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. |
| Frequency Response Obligation | Project 2007-12 | FRO | 2/7/2013 | 1/16/2014 | 4/1/2015 | 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. |

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| Frequency Response Sharing Group | Project 2007-12 | FRSG | 2/7/2013 | 1/16/2014 | 4/1/2015 | 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. |
| Generation Capability Import Requirement | Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions | GCIR | 11/13/2008 | 11/24/2009 | | 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. |
| Generator Operator | Version 0 Reliability Standards | GOP | 11/5/2015 | 1/21/2016 | 7/1/2016 | The entity that operates generating Facility(ies) and performs the functions of supplying energy and Interconnected Operations Services. |
| Generator Owner | Version 0 Reliability Standards | GO | 11/5/2015 | 1/21/2016 | 7/1/2016 | Entity that owns and maintains generating Facility(ies). |
| Generator Shift Factor | Version 0 Reliability Standards | GSF | 2/8/2005 | 3/16/2007 | | 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. |
| Generator-to-Load Distribution Factor | Version 0 Reliability Standards | GLDF | 2/8/2005 | 3/16/2007 | | 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. |
| Geomagnetic Disturbance Vulnerability Assessment or GMD Vulnerability Assessment | Project 2013-03 Geomagnetic Disturbance Mitigation | GMD | 12/17/2014 | 9/22/2016 | 7/1/2017 | Documented evaluation of potential susceptibility to voltage collapse, Cascading, or localized damage of equipment due to geomagnetic disturbances. |
| Host Balancing Authority | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | <ol style="list-style-type: none"> 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. |

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| Hourly Value | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | Data measured on a Clock Hour basis. |
| Implemented Interchange | Coordinate Interchange | | 5/2/2006 | 3/16/2007 | | The state where the Balancing Authority enters the Confirmed Interchange into its Area Control Error equation. |
| Inadvertent Interchange | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The difference between the Balancing Authority's Net Actual Interchange and Net Scheduled Interchange. (IA – IS) |
| Independent Power Producer | Version 0 Reliability Standards | IPP | 2/8/2005 | 3/16/2007 | | 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. |
| Institute of Electrical and Electronics Engineers, Inc. | Project 2007-07 | IEEE | 2/7/2006 | 3/16/2007 | | |
| Interactive Remote Access | Project 2008-06 | | 11/26/2012 | 11/22/2013 | 7/1/2016 | 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 |
| Interchange | Coordinate Interchange | | 5/2/2006 | 3/16/2007 | | Energy transfers that cross Balancing Authority boundaries. |
| Interchange Authority | Project 2015-04 | IA | 11/5/2015 | 1/21/2016 | 7/1/2016 | 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. |

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| Interchange Distribution Calculator | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Interchange Meter Error (IME) | Project 2010-14.2.1. Phase 2 | | 2/11/2016 | | 7/1/2016 | A term used in the Reporting ACE calculation to compensate for data or equipment errors affecting any other components of the Reporting ACE calculation. |
| Interchange Schedule | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Interchange Transaction | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | An agreement to transfer energy from a seller to a buyer that crosses one or more Balancing Authority Area boundaries. |
| Interchange Transaction Tag or Tag | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The details of an Interchange Transaction required for its physical implementation. |
| Interconnected Operations Service | Project 2015-04 | | 11/5/2015 | 1/21/2016 | 7/1/2016 | A service (exclusive of basic energy and Transmission Services) that is required to support the Reliable Operation of interconnected Bulk Electric Systems. |
| Interconnection | Project 2015-04 | | 11/5/2015 | 1/21/2016 | 7/1/2016 | 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. |
| Interconnection Reliability Operating Limit | Determine Facility Ratings, Operating Limits, and Transfer Capabilities | IROL | 11/1/2006 | 12/27/2007 | | 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. |

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| Interconnection Reliability Operating Limit Tv | Determine Facility Ratings, Operating Limits, and Transfer Capabilities | IROL Tv | 11/1/2006 | 12/27/2007 | | 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. |
| Intermediate Balancing Authority | Project 2008-12 | | 2/6/2014 | 6/30/2014 | 10/1/2014 | A Balancing Authority on the scheduling path of an Interchange Transaction other than the Source Balancing Authority and Sink Balancing Authority. |
| Intermediate System | Project 2008-06 | | 11/26/2012 | 11/22/2013 | 7/1/2016 | 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. |
| Interpersonal Communication | Project 2006-06 | | 11/7/2012 | 4/16/2015 | 10/1/2015 | Any medium that allows two or more individuals to interact, consult, or exchange information. |
| Interruptible Load or Interruptible Demand | Version 0 Reliability Standards | | 11/1/2006 | 3/16/2007 | | Demand that the end-use customer makes available to its Load-Serving Entity via contract or agreement for curtailment. |
| Joint Control | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | Automatic Generation Control of jointly owned units by two or more Balancing Authorities. |
| Limiting Element | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Load | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | An end-use device or customer that receives power from the electric system. |
| Load Shift Factor | Version 0 Reliability Standards | LSF | 2/8/2005 | 3/16/2007 | | 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. |
| Load-Serving Entity | Project 2015-04 | LSE | 11/5/2015 | 1/21/2016 | 7/1/2016 | Secures energy and Transmission Service (and related Interconnected Operations Services) to serve the electrical demand and energy requirements of its end-use customers. |

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| Long-Term Transmission Planning Horizon | Project 2006-02 | | 8/4/2011 | 10/17/2013 | 1/1/2015 | Transmission planning period that covers years six through ten or beyond when required to accommodate any known longer lead time projects that may take longer than ten years to complete. |
| Market Flow | Project 2006-08 Reliability Coordination - Transmission Loading Relief | | 11/4/2010 | 4/21/2011 | | 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. |
| Minimum Vegetation Clearance Distance | Project 2007-07 | MVCD | 11/3/2011 | 3/21/2013 | 7/1/2014 | The calculated minimum distance stated in feet (meters) to prevent flash-over between conductors and vegetation, for various altitudes and operating voltages. |
| Misoperation | Project 2010-05.1 | | 8/14/2014 | 5/13/2015 | 7/1/2016 | <p>The failure of a Composite Protection System to operate as intended for protection purposes. Any of the following is a Misoperation:</p> <ol style="list-style-type: none"> 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. |

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| | | | | | | <p>5. Unnecessary Trip – During Fault – An unnecessary Composite Protection System operation for a Fault condition on another Element.</p> <p>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.</p> |
| Most Severe Single Contingency | Project 2010-14.1 Phase 1 | MSSC | 11/5/2015 | 1/19/2017 | 1/1/2018 | 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). |
| Native Balancing Authority | Project 2008-12 | | 2/6/2014 | 6/30/2014 | 10/1/2014 | 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. |
| Native Load | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The end-use customers that the Load-Serving Entity is obligated to serve. |
| Near-Term Transmission Planning Horizon | Project 2010-10 | | 1/24/2011 | 11/17/2011 | | The transmission planning period that covers Year One through five. |
| Net Actual Interchange | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The algebraic sum of all metered interchange over all interconnections between two physically Adjacent Balancing Authority Areas. |
| Net Energy for Load | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |

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| Net Interchange Schedule | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The algebraic sum of all Interchange Schedules with each Adjacent Balancing Authority. |
| Net Scheduled Interchange | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The algebraic sum of all Interchange Schedules across a given path or between Balancing Authorities for a given period or instant in time. |
| Network Integration Transmission Service | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Non-Consequential Load Loss | Project 2006-02 | | 8/4/2011 | 10/17/2013 | 1/1/2015 | 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. |
| Non-Firm Transmission Service | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | Transmission service that is reserved on an as-available basis and is subject to curtailment or interruption. |
| Non-Spinning Reserve | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | <ol style="list-style-type: none"> 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. |
| Normal Clearing | Determine Facility Ratings, Operating Limits, and Transfer Capabilities | | 11/1/2006 | 12/27/2007 | | A protection system operates as designed and the fault is cleared in the time normally expected with proper functioning of the installed protection systems. |
| Normal Rating | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Nuclear Plant Generator Operator | Project 2009-08 | | 5/2/2007 | 10/16/2008 | | Any Generator Operator or Generator Owner that is a Nuclear Plant Licensee responsible for operation of a nuclear facility licensed to produce commercial power. |

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| Nuclear Plant Interface Requirements | Project 2009-08 | NPIRs | 5/2/2007 | 10/16/2008 | | The requirements based on NPIRs and Bulk Electric System requirements that have been mutually agreed to by the Nuclear Plant Generator Operator and the applicable Transmission Entities. |
| Nuclear Plant Licensing Requirements | Project 2009-08 | NPLRs | 5/2/2007 | 10/16/2008 | | 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. |
| Nuclear Plant Off-site Power Supply (Off-site Power) | Project 2009-08 | | 5/2/2007 | 10/16/2008 | | The electric power supply provided from the electric system to the nuclear power plant distribution system as required per the nuclear power plant license. |
| Off-Peak | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | Those hours or other periods defined by NAESB business practices, contract, agreements, or guides as periods of lower electrical demand. |
| On-Peak | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | Those hours or other periods defined by NAESB business practices, contract, agreements, or guides as periods of higher electrical demand. |
| Open Access Same Time Information Service | Version 0 Reliability Standards | OASIS | 2/8/2005 | 3/16/2007 | | 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. |
| Open Access Transmission Tariff | Version 0 Reliability Standards | OATT | 2/8/2005 | 3/16/2007 | | 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. |
| Operating Instruction | Project 2007-02 | | 5/6/2014 | 4/16/2015 | 7/1/2016 | 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.) |

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| Operating Plan | Coordinate Operations | | 2/7/2006 | 3/16/2007 | | 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 |
| Operating Procedure | Coordinate Operations | | 2/7/2006 | 3/16/2007 | | 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. |
| Operating Process | Coordinate Operations | | 2/7/2006 | 3/16/2007 | | 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. |
| Operating Reserve | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Operating Reserve – Spinning | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The portion of Operating Reserve consisting of: <ul style="list-style-type: none"> • 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. |
| Operating Reserve – Supplemental | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The portion of Operating Reserve consisting of: <ul style="list-style-type: none"> • 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. |

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| Operating Voltage | Project 2007-07 | | 2/7/2006 | 3/16/2007 | | 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. |
| Operational Planning Analysis | Project 2007-06.2 Phase 2 of System Protection Coordination | OPA | 8/11/2016 | 6/7/2018 | 4/1/2021 | 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.) |
| Operations Support Personnel | Project 2010-01 | | 2/6/2014 | 6/19/2014 | 7/1/2016 | 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. |
| Outage Transfer Distribution Factor | Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions | OTDF | 8/22/2008 | 11/24/2009 | | 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). |
| Overlap Regulation Service | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | A method of providing regulation service in which the Balancing Authority providing the regulation service incorporates another Balancing Authority's actual interchange, frequency response, and schedules into providing Balancing Authority's AGC/ACE equation. |
| Participation Factors | Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions | | 8/22/2008 | 11/24/2009 | | 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. |
| Peak Demand | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | <ol style="list-style-type: none"> 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. |

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| Performance-Reset Period | Determine Facility Ratings, Operating Limits, and Transfer Capabilities | | 2/7/2006 | 3/16/2007 | | The time period that the entity being assessed must operate without any violations to reset the level of non compliance to zero. |
| Physical Access Control Systems | Project 2008-06 Cyber Security Order 706 | PACS | 11/26/2012 | 11/22/2013 | 7/1/2016 | 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. |
| Physical Security Perimeter | Project 2008-06 Cyber Security Order 706 | PSP | 11/26/2012 | 11/22/2013 | 7/1/2016 | 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. |
| Planning Assessment | Project 2006-02 Assess Transmission Future Needs and Develop Transmission Plans | | 8/4/2011 | 10/17/2013 | 1/1/2015 | Documented evaluation of future Transmission System performance and Corrective Action Plans to remedy identified deficiencies. |
| Planning Authority | Project 2015-04 Alignment of Terms | | 11/5/2015 | 1/21/2016 | 7/1/2016 | The responsible entity that coordinates and integrates transmission Facilities and service plans, resource plans, and Protection Systems. |
| Planning Coordinator | Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions | PC | 8/22/2008 | 11/24/2009 | | See Planning Authority. |
| Point of Delivery | Version 0 Reliability Standards | POD | 2/8/2005 | 3/16/2007 | | 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. |
| Point of Receipt | Project 2015-04 Alignment of Terms | POR | 11/5/2015 | 1/21/2016 | 7/1/2016 | A location that the Transmission Service Provider specifies on its transmission system where an Interchange Transaction enters or a generator delivers its output. |

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| Point to Point Transmission Service | Version 0 Reliability Standards | PTP | 2/8/2005 | 3/16/2007 | | 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. |
| Power Transfer Distribution Factor | Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions | PTDF | 8/22/2008 | 11/24/2009 | | 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 |
| Pre-Reporting Contingency Event ACE Value | Project 2010-14.1 Phase 1 | | 11/5/2015 | 1/19/2017 | 1/1/2018 | 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. |
| Pro Forma Tariff | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | Usually refers to the standard OATT and/or associated transmission rights mandated by the U.S. Federal Energy Regulatory Commission Order No. 888. |
| Protected Cyber Assets | Project 2014-02 | PCA | 2/12/2015 | 1/21/2016 | 7/1/2016 | 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. |
| Protection System | Project 2007-17 Protection System Maintenance and Testing | | 11/19/2010 | 2/3/2012 | 4/1/2013 | <ul style="list-style-type: none"> • 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. |
| Protection System Coordination Study | Project 2007-06 System Protection Coordination | | 11/5/2015 | 6/7/2018 | 4/1/2021 | An analysis to determine whether Protection Systems operate in the intended sequence during Faults. |

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| Protection System Maintenance Program (PRC-005-6) | Project 2007-17.4 PRC-005 FERC Order No 803 Directive | PSMP | 11/5/2015 | 12/18/2015 | 1/1/2016 | 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: <ul style="list-style-type: none"> • 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. |
| Pseudo-Tie | Project 2010-14.2.1. Phase 2 | | 2/11/2016 | 9/20/2017 | 1/1/2019 | 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 equation (or alternate control processes). |
| Purchasing-Selling Entity | Version 0 Reliability Standards | PSE | 2/8/2005 | 3/16/2007 | | 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. |
| Ramp Rate or Ramp | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | (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. |
| Rated Electrical Operating Conditions | Project 2007-07 Transmission Vegetation Management | | 2/7/2006 | 3/16/2007 | | The specified or reasonably anticipated conditions under which the electrical system or an individual electrical circuit is intend/designed to operate |
| Rated System Path Methodology | Project 2006-07 ATC/TTC/AFC and CBM/TRM | | 8/22/2008 | 11/24/2009 | | 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 |

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| | Revisions | | | | | 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. |
| Rating | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The operational limits of a transmission system element under a set of specified conditions. |
| Reactive Power | Project 2015-04 Alignment of Terms | | 11/5/2015 | 1/21/2016 | 7/1/2016 | 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). |
| Real Power | Project 2015-04 Alignment of Terms | | 11/5/2015 | 1/21/2016 | 7/1/2016 | The portion of electricity that supplies energy to the Load. |
| Real-time | Coordinate Operations | | 2/7/2006 | 3/16/2007 | | Present time as opposed to future time. (From Interconnection Reliability Operating Limits standard.) |
| Real-time Assessment | Project 2007-06.2 Phase 2 of System Protection Coordination | RTA | 8/11/2016 | 6/8/2018 | 4/1/2021 | 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.) |
| Receiving Balancing Authority | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The Balancing Authority importing the Interchange. |
| Regional Reliability Organization | Version 0 Reliability Standards | RRO | 2/8/2005 | 3/16/2007 | | <ol style="list-style-type: none"> 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 |

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| | | | | | | Regional Reliability Organization can serve as the Compliance Monitor. |
| Regional Reliability Plan | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The plan that specifies the Reliability Coordinators and Balancing Authorities within the Regional Reliability Organization, and explains how reliability coordination will be accomplished. |
| Regulating Reserve | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | An amount of reserve responsive to Automatic Generation Control, which is sufficient to provide normal regulating margin. |
| Regulation Reserve Sharing Group | Project 2010-14.1 Phase 1 | | 8/15/2013 | 4/16/2015 | 7/1/2016 | 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. |
| Regulation Service | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The process whereby one Balancing Authority contracts to provide corrective response to all or a portion of the 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 Regulation Service. |
| Reliability Adjustment Arranged Interchange | Project 2008-12 Coordinate Interchange Standards | | 2/6/2014 | 6/30/2014 | 10/1/2014 | A request to modify a Confirmed Interchange or Implemented Interchange for reliability purposes. |
| Reliability Adjustment RFI | Project 2007-14 Coordinate Interchange - Timing Table | | 10/29/2008 | 12/17/2009 | | Request to modify an Implemented Interchange Schedule for reliability purposes. |
| Reliability Coordinator | Project 2015-04 Alignment of Terms | RC | 11/5/2015 | 1/21/2016 | 7/1/2016 | 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. |

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| Reliability Coordinator Area | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The collection of generation, transmission, and loads within the boundaries of the Reliability Coordinator. Its boundary coincides with one or more Balancing Authority Areas. |
| Reliability Coordinator Information System | Version 0 Reliability Standards | RCIS | 2/8/2005 | 3/16/2007 | | The system that Reliability Coordinators use to post messages and share operating information in real time. |
| Reliability Standard | Project 2015-04 Alignment of Terms | | 11/5/2015 | 1/21/2016 | 7/1/2016 | 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. |
| Reliable Operation | Project 2015-04 Alignment of Terms | | 11/5/2015 | 1/21/2016 | 7/1/2016 | 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. |
| Remedial Action Scheme | Project 2010-05.2 | RAS | 11/13/2014 | 11/19/2015 | 4/1/2017 | <p>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:</p> <ul style="list-style-type: none"> • 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. <p>The following do not individually constitute a RAS:</p> <p>a. Protection Systems installed for the purpose of detecting Faults on BES</p> |

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| | | | | | | <p>Elements and isolating the faulted Elements</p> <p>b. Schemes for automatic underfrequency load shedding (UFLS) and automatic undervoltage load shedding (UVLS) comprised of only distributed relays</p> <p>c. Out-of-step tripping and power swing blocking</p> <p>d. Automatic reclosing schemes</p> <p>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</p> <p>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</p> <p>g. FACTS controllers that remotely switch static shunt reactive devices located at other stations to regulate the output of a single FACTS device</p> <p>h. Schemes or controllers that remotely switch shunt reactors and shunt capacitors for voltage regulation that would otherwise be manually switched</p> <p>i. Schemes that automatically de-energize a line for a non-Fault operation when one end of the line is open</p> <p>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)</p> <p>k. Automatic sequences that proceed when manually initiated solely by a System Operator</p> <p>l. Modulation of HVdc or FACTS via supplementary controls, such as angle damping or frequency damping applied to damp local or inter-area oscillations</p> <p>m. Sub-synchronous resonance (SSR) protection schemes that directly detect sub-synchronous quantities (e.g., currents or torsional oscillations)</p> <p>n. Generator controls such as, but not limited to, automatic generation</p> |

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| | | | | | | control (AGC), generation excitation [e.g. automatic voltage regulation (AVR) and power system stabilizers(PSS)], fast valving, and speed governing |
| Removable Media | Project 2016-02 Modifications to CIP Standards | | 2/9/2017 | 4/19/2018 | 1/1/2020 | <p>Storage media that:</p> <ol style="list-style-type: none"> 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 <p>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.</p> |
| Reportable Balancing Contingency Event | Project 2010-14.1 Phase 1 | | 11/5/2015 | 1/19/2017 | 1/1/2018 | <p>Any Balancing Contingency Event occurring within a one-minute interval of an initial sudden decline in ACE based on EMS scan rate data that results in a loss of MW output less than or equal to the Most Severe Single Contingency, and greater than or equal to the lesser amount of: (i) 80% of the Most Severe Single Contingency, or (ii) the amount listed below for the applicable Interconnection. Prior to any given calendar quarter, the 80% threshold may be reduced by the responsible entity upon written notification to the Regional Entity.</p> <ul style="list-style-type: none"> • Eastern Interconnection – 900 MW • Western Interconnection – 500 MW • ERCOT – 800 MW • Quebec – 500 MW |
| Reportable Cyber Security Incident | Project 2018-02 Modifications to CIP-008 Cyber Security Incident Reporting | | 2/7/2019 | 6/20/2019 | 1/1/2021 | <p>A Cyber Security Incident that compromised or disrupted:</p> <ul style="list-style-type: none"> - 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 |

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| Reportable Disturbance | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | Any event that causes an ACE change greater than or equal to 80% of a Balancing Authority's or reserve sharing group's most severe contingency. The definition of a reportable disturbance is specified by each Regional Reliability Organization. This definition may not be retroactively adjusted in response to observed performance. |
| Reporting ACE | Project 2010-14.2.1. Phase 2 | | 2/11/2016 | | 7/1/2016 | <p>The scan rate values of a Balancing Authority Area's (BAA) Area Control Error (ACE) measured in MW includes the difference between the Balancing Authority Area's Actual Net Interchange and its Scheduled Net Interchange, plus its Frequency Bias Setting obligation, plus correction for any known meter error. In the Western Interconnection, Reporting ACE includes Automatic Time Error Correction (ATEC).</p> <p>Reporting ACE is calculated as follows: Reporting ACE = (NIA – NIS) – 10B (FA – FS) – IME</p> <p>Reporting ACE is calculated in the Western Interconnection as follows: Reporting ACE = (NIA – NIS) – 10B (FA – FS) – IME + IATEC</p> <p>Where:</p> <ul style="list-style-type: none"> • NIA = Actual Net Interchange. • NIS = Scheduled Net Interchange. • B = Frequency Bias Setting. • FA = Actual Frequency. • FS = Scheduled Frequency. • IME = Interchange Meter Error. • IATEC = Automatic Time Error Correction. <p>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 equation that is(are) implemented for all BAAs on 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:</p> <ol style="list-style-type: none"> 1. All portions of the Interconnection are included in exactly one BAA so that the sum of all BAAs' generation, load, and loss is the same as total Interconnection generation, load, and loss; |

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| | | | | | | <p>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;</p> <p>3. The use of a common Scheduled Frequency FS for all BAAs at all times; and,</p> <p>4. Excludes metering or computational errors. (The inclusion and use of the IME term corrects for known metering or computational errors.)</p> |
| Request for Interchange | Project 2008-12 Coordinate Interchange | RFI | 2/6/2014 | 6/30/2014 | 10/1/2014 | 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. |
| Reserve Sharing Group | Project 2015-04 Alignment of Terms | | 11/5/2015 | 1/21/2016 | 7/1/2016 | 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 quicker (e.g., between zero and ten minutes) then, for the purposes of disturbance control performance, the areas become a Reserve Sharing Group. |
| Reserve Sharing Group Reporting ACE | Project 2010-14.1 Phase 1 | | 11/5/2015 | 1/19/2017 | 1/1/2018 | At any given time of measurement for the applicable Reserve Sharing Group (RSG), the algebraic sum of the ACEs (or equivalent as calculated at such time of measurement) of the Balancing Authorities participating in the RSG at the time of measurement. |
| Resource Planner | Project 2015-04 Alignment of Terms | | 11/5/2015 | 1/21/2016 | 7/1/2016 | 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. |
| Response Rate | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The Ramp Rate that a generating unit can achieve under normal operating conditions expressed in megawatts per minute (MW/Min). |
| Right-of-Way | Project 2010-07 | ROW | 5/9/2012 | 3/21/2013 | 7/1/2014 | 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 |

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| | | | | | | 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 |
| Scenario | Coordinate Operations | | 2/7/2006 | 3/16/2007 | | Possible event. |
| Schedule | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | (Verb) To set up a plan or arrangement for an Interchange Transaction. (Noun) An Interchange Schedule. |
| Scheduled Frequency | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 60.0 Hertz, except during a time correction. |
| Scheduled Net Interchange (NIS) | Project 2010-14.2.1 Phase 2 | | 2/11/2016 | | 7/1/2016 | 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. |
| Scheduling Entity | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | An entity responsible for approving and implementing Interchange Schedules. |
| Scheduling Path | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The Transmission Service arrangements reserved by the Purchasing-Selling Entity for a Transaction. |
| Sending Balancing Authority | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The Balancing Authority exporting the Interchange. |
| Sink Balancing Authority | Project 2008-12 Coordinate Interchange Standards | | 2/6/2014 | 6/30/2014 | 10/1/2014 | The Balancing Authority in which the load (sink) is located for an Interchange Transaction and any resulting Interchange Schedule. |
| Source Balancing Authority | Project 2008-12 Coordinate Interchange | | 2/6/2014 | 6/30/2014 | 10/1/2014 | The Balancing Authority in which the generation (source) is located for an Interchange Transaction and for any resulting Interchange Schedule. |

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| | Standards | | | | | |
| Special Protection System (Remedial Action Scheme) | Project 2010-05.2 | SPS | 5/5/2016 | 6/23/2016 | 4/1/2017 | See "Remedial Action Scheme" |
| Spinning Reserve | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | Unloaded generation that is synchronized and ready to serve additional demand. |
| Stability | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The ability of an electric system to maintain a state of equilibrium during normal and abnormal conditions or disturbances. |
| Stability Limit | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Supervisory Control and Data Acquisition | Version 0 Reliability Standards | SCADA | 2/8/2005 | 3/16/2007 | | A system of remote control and telemetry used to monitor and control the transmission system. |
| Supplemental Regulation Service | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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 ACE. |
| Surge | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | A transient variation of current, voltage, or power flow in an electric circuit or across an electric system. |
| Sustained Outage | Project 2007-07 Transmission Vegetation Management | | 2/7/2006 | 3/16/2007 | | 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. |
| System | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | A combination of generation, transmission, and distribution components. |
| System Operating Limit | Project-2015-09 | | 5/13/2021 | 3/4/2022 | 4/1/2024 | 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 post Contingency operating states. |

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| System Operator | Project 2010-01 Training | | 2/6/2014 | 6/19/2014 | 7/1/2016 | 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. |
| System Voltage Limit | Project-2015-09 | | 5/13/2021 | 3/4/2022 | 4/1/2024 | The maximum and minimum steady-state voltage limits (both normal and emergency) that provide for acceptable System performance. |
| Telemetry | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Thermal Rating | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Tie Line | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | A circuit connecting two Balancing Authority Areas. |
| Tie Line Bias | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | A mode of Automatic Generation Control that allows the Balancing Authority to 1.) maintain its Interchange Schedule and 2.) respond to Interconnection frequency error. |
| Time Error | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The difference between the Interconnection time measured at the Balancing Authority(ies) and the time specified by the National Institute of Standards and Technology. Time error is caused by the accumulation of Frequency Error over a given period. |
| Time Error Correction | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | An offset to the Interconnection's scheduled frequency to return the Interconnection's Time Error to a predetermined value. |
| TLR (Transmission Loading Relief) Log (NERC added the spelled out term for TLR Log for clarification purposes.) | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |

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| Total Flowgate Capability | Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions | TFC | 8/22/2008 | 11/24/2009 | | 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. |
| Total Internal Demand | Project 2010-04 Demand Data (MOD C) | | 5/6/2014 | 2/19/2015 | 7/1/2016 | 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. |
| Total Transfer Capability | Version 0 Reliability Standards | TTC | 2/8/2005 | 3/16/2007 | | 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. |
| Transaction | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | See Interchange Transaction. |
| Transfer Capability | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | The measure of the ability of interconnected electric systems to move or transfer power <i>in a reliable manner</i> 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 <i>not</i> generally equal to the transfer capability from "Area B" to "Area A." |
| Transfer Distribution Factor | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | See Distribution Factor. |
| Transient Cyber Asset | Project 2016-02 Modifications to CIP Standards | TCA | 2/9/2017 | 4/19/2018 | 1/1/2020 | A Cyber Asset that is: <ol style="list-style-type: none"> 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: |

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| | | | | | | <ul style="list-style-type: none"> • 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. <p>Examples of Transient Cyber Assets include, but are not limited to, Cyber Assets used for data transfer, vulnerability assessment, maintenance, or troubleshooting purposes.</p> |
| Transmission | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Transmission Constraint | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | A limitation on one or more transmission elements that may be reached during normal or contingency system operations. |
| Transmission Customer | Project 2015-04 Alignment of Terms | | 11/5/2015 | 1/21/2016 | 7/1/2016 | <ol style="list-style-type: none"> 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. |
| Transmission Line | Project 2007-07 Transmission Vegetation Management | | 2/7/2006 | 3/16/2007 | | 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. |
| Transmission Operator | Project 2015-04 Alignment of Terms | | 11/5/2015 | 1/21/2016 | 7/1/2016 | The entity responsible for the reliability of its “local” transmission system, and that operates or directs the operations of the transmission Facilities. |
| Transmission Operator Area | Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions | | 8/22/2008 | 11/24/2009 | | The collection of Transmission assets over which the Transmission Operator is responsible for operating. |

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| Transmission Owner | Project 2015-04 Alignment of Terms | | 11/5/2015 | 1/21/2016 | 7/1/2016 | The entity that owns and maintains transmission Facilities. |
| Transmission Planner | Project 2015-04 Alignment of Terms | | 11/5/2015 | 1/21/2016 | 7/1/2016 | 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. |
| Transmission Reliability Margin | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Transmission Reliability Margin Implementation Document | Project 2006-07 ATC/TTC/AFC and CBM/TRM Revisions | | 8/22/2008 | 11/24/2009 | | A document that describes the implementation of a Transmission Reliability Margin methodology, and provides information related to a Transmission Operator's calculation of TRM. |
| Transmission Service | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | Services provided to the Transmission Customer by the Transmission Service Provider to move energy from a Point of Receipt to a Point of Delivery. |
| Transmission Service Provider | Project 2015-04 Alignment of Terms | TSP | 11/5/2015 | 1/21/2016 | 7/1/2016 | The entity that administers the transmission tariff and provides Transmission Service to Transmission Customers under applicable Transmission Service agreements. |
| Undervoltage Load Shedding Program | Project 2008-02 Undervoltage Load Shedding & Underfrequency Load Shedding | UVLS Program | 11/13/2014 | 11/19/2015 | 4/1/2017 | 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. |
| Vegetation | Project 2007-07 Transmission Vegetation Management | | 2/7/2006 | 3/16/2007 | | All plant material, growing or not, living or dead. |

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| Vegetation Inspection | Project 2010-07 | | 5/9/2012 | 3/21/2013 | 7/1/2014 | 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. |
| Wide Area | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 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. |
| Year One | Project 2010-10 FAC Order 729 | | 1/24/2011 | 11/17/2011 | | 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 |

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| Actual Net Interchange | Project-2022-01 | NIA | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| ACE Diversity Interchange | Project-2022-01 | ADI | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| Area Control Error | Project-2022-01 | ACE | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| Automatic Generation Control | Project-2022-01 | AGC | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| Automatic Time Error Correction | Project-2022-01 | A TEC | 2/15/2024 | 4/29/2024 | 7/1/2025 | <p>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. IATEC shall be zero when operating in any other AGC mode.</p> $I_{ATEC} = \frac{PI_{accum}^{on/off\ peak}}{(1-Y) \cdot H}$ <p>The absolute value of IATEC shall not exceed LMax.</p> <p>IATEC shall be zero when operating in any other AGC mode.</p> <ul style="list-style-type: none"> Lmax is the maximum value allowed for IATEC set by each BA between $0.2 \cdot Bi$ and L10; i.e. $0.2 \cdot Bi \leq Lmax \leq L10$. |

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| | | | | | | <ul style="list-style-type: none"> • $L_{10} = 1.65 * \epsilon_{10} * \frac{1}{\sqrt{(-10B_i)(-10B_s)}}$ • 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. • $Y = B_i/BS$. • 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. • Primary Inadvertent Interchange ($P_{II_{hourly}}$) is $(1-Y) * (I_{actual} - B_i * \Delta TE/6) * BA_{island}$ • 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: $\Delta TE = \frac{TE_{end\ hour} - TE_{begin\ hour} - TD_{adj} - t * (TE_{offset})}{hour}$ • 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. • $P_{II_{accum}}$ is the Balancing Authority Area's accumulated $P_{II_{hourly}}$ in MWh. An On-Peak and Off Peak accumulation accounting is required, |

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| | | | | | | where: $PII_{accum}^{on/offpeak} = \text{last period's } PII_{accum}^{on/offpeak} + PII_{hourly}$ |
| Balancing Authority Area | Project-2022-01 | BAA | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| Balancing Contingency Event | Project-2022-01 | BCE | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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 Reporting 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 Reporting ACE. |
| Control Performance Standard | Project-2022-01 | CPS | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| Disturbance | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| Disturbance Control Standard | Project-2022-01 | DCS | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| Dynamic Interchange | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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 |

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| Schedule or Dynamic Schedule | | | | | | Interchange Schedule in the affected Balancing Authorities' Reporting ACE |
| Fixed Fuel Supply Component | Project-2021-07 | | 2/15/2024 | 6/27/2024 | 10/1/2024 | 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. |
| Frequency Bias Setting | Project-2022-01 | FBS | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| Frequency Error | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | The difference between the Actual Frequency and the Scheduled Frequency. (FA –FS) |
| Generator Cold Weather Critical Component | Project-2021-07 | | 2/15/2024 | 6/27/2024 | 10/1/2024 | 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). |
| Generator Cold Weather Constraint | Project-2021-07 | | 2/15/2024 | 6/27/2024 | 10/1/2024 | <p>Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions.</p> <p>Criteria used to determine a constraint include practices, methods, or technologies which, given the exercise of reasonable judgment in light of the facts known at the time the decision to declare the constraint was made:</p> <ul style="list-style-type: none"> • Were not broadly implemented at generating units for comparable unit types in regions that experience similar winter climate conditions to provide reasonable assurance of efficacy; |

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| | | | | | | <ul style="list-style-type: none"> • Could not have been expected to accomplish the desired result; or • Could not have been implemented at a reasonable cost consistent with good business practices, reliability, or safety. A cost may be deemed “unreasonable” when implementation of selected freeze protection measure(s) are uneconomical to the extent that they would require prohibitively expensive modifications or significant expenditures on equipment with minimal remaining life. |
| Extreme Cold Weather Temperature | Project-2021-07 | | 2/15/2024 | 6/27/2024 | 10/1/2024 | 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. |
| Generator Cold Weather Reliability Event | Project-2021-07 | | 2/15/2024 | 6/27/2024 | 10/1/2024 | 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. |
| Inadvertent Interchange | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | The difference between the Balancing Authority’s Actual Net Interchange and Scheduled Net Interchange. (NIA – NIS) |
| Inadvertent Interchange Management | Project-2022-01 | IIM | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| Implemented Interchange | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | The state where the Balancing Authority enters the Confirmed Interchange into its Reporting ACE . |
| Interchange Meter Error | Project-2022-01 | IME | 2/15/2024 | 4/29/2024 | 7/1/2025 | A term used in Reporting ACE to compensate for data or equipment errors affecting any other components of Reporting ACE. |
| Interchange Schedule | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| Net Interchange Schedule | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | The algebraic sum of all Interchange Schedules with each Adjacent Balancing Authority. |
| Operating Reserve – Spinning | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | The portion of Operating Reserve consisting of: <ul style="list-style-type: none"> • Generation synchronized to the system and fully available to serve load within the Disturbance recovery period following the contingency event; |

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| | | | | | | <ul style="list-style-type: none"> or Load fully removable from the system within the Disturbance recovery period following the contingency event. |
| Net Scheduled Interchange | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | The algebraic sum of all Interchange Schedules across a given path or between Balancing Authorities for a given period or instant in time. |
| Operating Reserve – Supplemental | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | The portion of Operating Reserve consisting of: <ul style="list-style-type: none"> • 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. |
| Overlap Regulation Service | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| Pre-Reporting Contingency Event ACE Value | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| Pseudo-Tie | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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 . |
| Ramp Rate or Ramp | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | (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. |
| Regulation Service | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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 . |

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| Reporting Area Control Error | Project-2022-01 | Reporting ACE | 2/15/2024 | 4/29/2024 | 7/1/2025 | <p>The scan rate values of a Balancing Authority Area’s (BAA) Area Control Error (ACE) measured in MW includes the error in scheduled interchange adjusted for Frequency Bias Setting obligation, known meter error, and inadvertent management.</p> <p>Reporting ACE is calculated as follows: Reporting ACE = (NIA – NIS) – 10B (FA – FS) – IME</p> <p>Reporting ACE is calculated in the Western Interconnection as follows: Reporting ACE = (NIA – NIS) – 10B (FA – FS) – IME + IATEC</p> <p>Where:</p> <ul style="list-style-type: none"> • 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.) <p>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 equation that is(are) implemented for all BAAs on 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:</p> <ol style="list-style-type: none"> 1. All portions of the Interconnection are included in exactly one BAA so that the sum of all BAAs’ generation, load, and loss is the same as total Interconnection generation, load, and loss; 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; 3. The use of a common Scheduled Frequency FS for all BAAs at all times; <p>and,</p> <ol style="list-style-type: none"> 4. Excludes metering or computational errors. (The inclusion and use of the IME term corrects for known metering or computational errors.) |
| Reportable Balancing Contingency Event | Project-2022-01 | RBCE | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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 the Most Severe Single |

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| | | | | | | 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 |
| Reportable Disturbance | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | Any event that causes an ACE change greater than or equal to 80% of a Balancing Authority’s or reserve sharing group’s most severe contingency. The definition of a reportable disturbance is specified by each Regional Reliability Organization. This definition may not be retroactively adjusted in response to observed performance. |
| Reserve Sharing Group | Project-2022-01 | RSG | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| Reserve Sharing Group Reporting ACE | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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 |
| Scheduled Frequency | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | 60.00 Hertz, except during a Time Error Correction |
| Scheduled Net Interchange | Project-2022-01 | NIS | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| Supplemental Regulation Service | Project-2022-01 | | 2/15/2024 | 4/29/2024 | 7/1/2025 | A method of providing Regulation Service in which the Balancing Authority providing the Regulation Service receives a signal representing all or a |

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| | | | | | | portion of the other Balancing Authority's Reporting ACE. |
| Tie Line Bias | Project-2022-01 | TLB | 2/15/2024 | 4/29/2024 | 7/1/2025 | A mode of Automatic Generation Control that allows the Balancing Authority to 1.) maintain its Interchange Schedule and 2.) respond to Interconnection frequency error. |
| Time Error | Project-2022-01 | TE | 2/15/2024 | 4/29/2024 | 7/1/2025 | 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. |
| Time Error Correction | Project-2022-01 | TEC | 2/15/2024 | 4/29/2024 | 7/1/2025 | A manual offset to the Interconnection's Scheduled Frequency to return the Interconnection's Time Error to a predetermined range. |

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| BES Cyber Asset | Project 2016-02 | BCA | 5/9/2024 | | | 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. |
| BES Cyber System | Project 2016-02 | BCS | 5/9/2024 | | | <i>Update is Acronym only</i> |
| BES Cyber System Information | Project 2016-02 | BCSI | 5/9/2024 | | | 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. |
| CIP Senior Manager | Project 2016-02 | | 5/9/2024 | | | 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. |
| Cyber Assets | Project 2016-02 | | 5/9/2024 | | | 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. |
| Cyber Security Incident | Project 2016-02 | | 5/9/2024 | | | A malicious act or suspicious event that: <ul style="list-style-type: none"> • For a high or medium impact BES Cyber System (BCS), compromises or attempts to compromise (1) an Electronic Security Perimeter, (2) a |

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| | | | | | | Physical Security Perimeter, (3) an Electronic Access Control or Monitoring Systems; or (4) Shared Cyber Infrastructure; or <ul style="list-style-type: none"> Disrupts or attempts to disrupt the operation of a BCS. |
| Cyber System (New Definition) | Project 2016-02 | | 5/9/2024 | | | One or more BES Cyber Assets logically grouped by a responsible entity to perform one or more reliability tasks for a functional entity. |
| Electronic Access Control or Monitoring Systems | Project 2016-02 | EACMS | 5/9/2024 | | | 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. |
| Electronic Access Point | Project 2016-02 | EAP | 5/9/2024 | | | 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. |
| External Routable Connectivity | Project 2016-02 | ERC | 5/9/2024 | | | 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. |
| Electronic Security Perimeter | Project 2016-02 | ESP | 5/9/2024 | | | 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. |
| Interactive Remote Access | Project 2016-02 | IRA | 5/9/2024 | | | User-initiated electronic access by a person using a bidirectional routable protocol: <ul style="list-style-type: none"> 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. |

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| | | | | | | Interactive Remote Access does not include: <ul style="list-style-type: none"> • Communication that originates from a Cyber System protected by any of the Responsible Entity's ESPs; or • System-to-system process communication. |
| Intermediate System | Project 2016-02 | | 5/9/2024 | | | One or more Electronic Access Control or Monitoring Systems that are used to restrict Interactive Remote Access to only authorized users. |
| Management Interface (New Definition) | Project 2016-02 | | 5/9/2024 | | | An administrative interface that: <ul style="list-style-type: none"> • 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. |
| Physical Access Control Systems | Project 2016-02 | PACS | 5/9/2024 | | | 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. |
| Physical Security Perimeter | Project 2016-02 | PSP | 5/9/2024 | | | 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. |
| Protected Cyber Asset | Project 2016-02 | PCA | 5/9/2024 | | | One or more Cyber Assets or Virtual Cyber Assets (VCA) that: <ul style="list-style-type: none"> • 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; <p>Excluding Transient Cyber Assets.</p> |
| Removable Media | Project 2016-02 | | 5/9/2024 | | | 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. |
| Reportable Cyber Security Incident | Project 2016-02 | | 5/9/2024 | | | A Cyber Security Incident that compromised or disrupted: <ul style="list-style-type: none"> • A BES Cyber System (BCS) that performs one or more reliability tasks of a functional entity; |

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| | | | | | | <ul style="list-style-type: none"> • 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. |
| Shared Cyber Infrastructure (New Definition) | Project 2016-02 | SCI | 5/9/2024 | | | <p>One or more programmable electronic devices, including the software that shares the devices' resources, that:</p> <ul style="list-style-type: none"> • 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. <p>SCI does not include the supported VCAs or Cyber Assets with which it shares its resources.</p> |
| Transient Cyber Asset | Project 2016-02 | TCA | 5/9/2024 | | | <p>A Cyber Asset or Virtual Cyber Asset (VCA) that is:</p> <ol style="list-style-type: none"> 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ▪ BES Cyber Asset; ▪ Shared Cyber Infrastructure; or ▪ PCA associated with high or medium impact BCS. <p>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.</p> |
| Virtual Cyber Asset (New) | Project 2016-02 | VCA | 5/9/2024 | | | <p>A logical instance of an operating system or firmware, currently executing on a virtual machine hosted on a BES Cyber Asset; Electronic Access</p> |

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| Definition) | | | | | | Control or Monitoring System; Physical Access Control System; Protected Cyber Asset; or Shared Cyber Infrastructure (SCI). Virtual Cyber Assets (VCAs) do not include: <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • SCI or Cyber Assets that host VCAs. Application containers are considered software of VCAs or Cyber Assets |
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| Adjacent Balancing Authority | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 9/30/2014 | A Balancing Authority Area that is interconnected another Balancing Authority Area either directly or via a multi- party agreement or transmission tariff. |
| Adverse Reliability Impact | Project 2006-06 | | 8/4/2011 | NERC withdrew the related petition 3/18/2015. | | | The impact of an event that results in Bulk Electric System instability or Cascading. |
| Area Control Error | Version 0 Reliability Standards | ACE | 2/8/2005 | 3/16/2007 | | 3/31/2014 | The instantaneous difference between a Balancing Authority's net actual and scheduled interchange, taking into account the effects of Frequency Bias and correction for meter error. |
| Arranged Interchange | Coordinate Interchange | | 5/2/2006 | 3/16/2007 | | 9/30/2014 | The state where the Interchange Authority has received the Interchange information (initial or revised). |
| ATC Path | Project 2006-07 | | 8/22/2008 | Not approved; Modification directed 11/24/2009 | | | Any combination of Point of Receipt and Point of Delivery for which ATC is calculated; and any Posted Path. (See 18 CFR 37.6(b)(1)) |
| Automatic Generation Control | Version 0 Reliability Standards | AGC | 2/8/2005 | 3/16/2007 | | 12/31/2018 | Equipment that automatically adjusts generation in a Balancing Authority Area from a central location to maintain the Balancing Authority's interchange schedule plus Frequency Bias. AGC may also accommodate automatic inadvertent payback and time error correction. |
| Available Transfer Capability | Version 0 Reliability Standards | ATC | 2/8/2005 | 3/16/2007 | | | 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 |
| Balancing Authority | Version 0 Reliability Standards | BA | 2/8/2005 | 3/16/2007 | | 12/31/2018 | The responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time. |
| BES Cyber Asset | Project 2008-06 | | 11/26/2012 | 11/22/2013 | | 6/30/2016 | A Cyber Asset that if rendered unavailable, degraded, or |

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| | | | | | | | 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. (A Cyber Asset is not a BES Cyber Asset if, for 30 consecutive calendar days or less, it is directly connected to a network within an ESP, a Cyber Asset within an ESP, or to a BES Cyber Asset, and it is used for data transfer vulnerability assessment maintenance or troubleshooting purposes) |
| Blackstart Capability Plan | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 7/1/2013 Will be retired when EOP-005-2 becomes enforceable | A documented procedure for a generating unit or station to go from a shutdown condition to an operating condition delivering electric power without assistance from the electric system. This procedure is only a portion of an overall system restoration plan. |
| Blackstart Resource | Project 2006-03 | | 8/5/2009 | 3/17/2011 | | 6/30/2016 | 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. |
| Bulk Electric System | Version 0 Reliability Standards | BES | 2/8/2005 | 3/16/2007 | | 6/30/2014 | As defined by the Regional Reliability Organization, the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. Radial transmission facilities serving only load with one transmission source are generally not included in this definition. |

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| Bulk Electric System | Project 2010-17 | BES | 1/18/2012 | 6/14/2013 | | Replaced by BES definition FERC approved 3/20/2014 | <p>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.</p> <p>Exclusions:</p> <ul style="list-style-type: none"> • E1 - Radial systems: A group of contiguous transmission Elements that emanates from a single point of connection of 100 kV or higher and: <ul style="list-style-type: none"> Only serves Load. Or, b) Only includes generation resources, not identified in Inclusion I3, 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 Inclusion I3, with an aggregate capacity of non-retail generation less than or equal to 75 MVA (gross nameplate rating). <p>Note – A normally open switching device between radial systems, as depicted on prints or one-line diagrams for</p> <ul style="list-style-type: none"> • 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. <p>E3 - Local networks (LN): A group of contiguous transmission Elements operated at or above 100 kV but 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 customer Load and not to accommodate bulk power transfer across the interconnected system. The LN is characterized by all of</p> |

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| | | | | | | | <p>the following:</p> <ul style="list-style-type: none"> a) Limits on connected generation: The LN and its underlying Elements do not include generation resources identified in Inclusion I3 and do not have an aggregate capacity of non-retail generation greater than 75 MVA (gross nameplate rating); b) 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 a monitored Facility 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). <p>E4 – Reactive Power devices owned and operated by the retail customer solely for its own use. Note - Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process.</p> |
| <p>Bulk Electric System</p> <p>(FERC issued an order on April 18, 2013 approving the revised definition with an effective date of July 1, 2013. On June 14, 2013, FERC granted NERC’s request to extend the effective date of the revised definition of the</p> | <p>Project 2010-17</p> | <p>BES</p> | <p>1/18/2012</p> | <p>6/14/2013</p> | | <p>Replaced by BES definition FERC approved 3/20/2014</p> | <p>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.</p> <p>Inclusions:</p> <ul style="list-style-type: none"> • I1 - Transformers with the primary terminal and at least one secondary terminal operated at 100 kV or higher unless excluded under Exclusion E1 or E3. I2 - Generating resource(s) with gross individual nameplate rating greater than 20 MVA or gross plant/facility aggregate nameplate rating greater than 75 MVA including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100 kV or above. I3 - Blackstart Resources identified in the Transmission Operator’s restoration plan. |

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| Bulk Electric System to July 1, 2014.) | | | | | | | I4 - Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a system designed primarily for aggregating capacity, connected at a common point at a voltage of 100 kV or above. |
| Bulk-Power System | Project 2012-08.1 Phase 1 | | 5/9/2013 | 7/9/2013 | | 6/30/2016 | 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. |
| Business Practices | Project 2006-07 | | 8/22/2008 | approved; Modification | | | Those business rules contained in the Transmission Service Provider's applicable tariff, rules, or procedures; associated Regional Reliability Organization or regional entity business practices; or NAESB Business Practices. |
| Cascading | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 6/30/2016 | 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. |
| Cascading Outages | Determine Facility Ratings, Operating Limits, and Transfer Capabilities | | 11/1/2006 Withdrawn 2/12/2008 | | | FERC Remanded 12/27/2007 | The uncontrolled successive loss of Bulk Electric System Facilities triggered by an incident (or condition) at any location resulting in the interruption of electric service that cannot be restrained from spreading beyond a pre-determined area. |
| Confirmed Interchange | Coordinate Interchange | | 5/2/2006 | 3/16/2007 | | | The state where the Interchange Authority has verified the Arranged Interchange. |
| Contingency Reserve | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 12/31/2017 | The provision of capacity deployed by the Balancing Authority to meet the Disturbance Control Standard (DCS) and other NERC and Regional Reliability Organization contingency requirements. |
| Critical Assets | Cyber Security (Permanent) | | 5/2/2006 | 1/18/2008 | | 6/30/2016 | Facilities, systems, and equipment which, if destroyed, degraded, or otherwise rendered unavailable, would affect the reliability or operability of the Bulk Electric System. |
| Critical Cyber Assets | Cyber Security (Permanent) | | 5/2/2006 | 1/18/2008 | | 6/30/2016 | Cyber Assets essential to the reliable operation of Critical Assets. |

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| Cyber Assets | Cyber Security (Permanent) | | 5/2/2006 | 1/18/2008 | | 6/30/2016 | Programmable electronic devices and communication networks including hardware, software, and data. |
| Cyber Security Incident | Cyber Security (Permanent) | | 5/2/2006 | 1/18/2008 | | 6/30/2016 | Any malicious act or suspicious event that: <ul style="list-style-type: none"> • Compromises, or was an attempt to compromise, the Electronic Security Perimeter or Physical Security Perimeter of a Critical Cyber Asset, or • Disrupts, or was an attempt to disrupt, the operation of a Critical Cyber Asset. |
| Cyber Security Incident | Project 2008-06 | | 11/26/2012 | 11/22/2013 | 7/1/2016 | 12/31/2020 | A malicious act or suspicious event that: <ul style="list-style-type: none"> • Compromises, or was an attempt to compromise, the Electronic Security Perimeter or Physical Security Perimeter, or • Disrupts, or was an attempt to disrupt, the operation of a BES Cyber System. |
| Demand-Side Management | Version 0 Reliability Standards | DSM | 2/8/2005 | 3/16/2007 | | 6/30/2016 | The term for all activities or programs undertaken by Load-Serving Entity or its customers to influence the amount or timing of electricity they use. |
| Distribution Provider | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 6/30/2016 | 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. |
| Dynamic Interchange Schedule or Dynamic Schedule | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 9/30/2014 | A telemetered reading or value that is updated in real time and used as a schedule in the AGC/ACE equation and the integrated value of which is treated as a schedule for interchange accounting purposes. Commonly used for scheduling jointly owned generation to or from another Balancing Authority Area. |
| Electronic Security Perimeter | Cyber Security (Permanent) | ESP | 5/2/2006 | 1/18/2008 | | 6/30/2016 | The logical border surrounding a network to which Critical Cyber Assets are connected and for which access is controlled. |
| Element | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 6/30/2016 | 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. |

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| Energy Emergency | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 3/31/2017 | A condition when a Load-Serving Entity has exhausted all other options and can no longer provide its customers' expected energy requirements. |
| Flowgate | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | | A designated point on the transmission system through which the Interchange Distribution Calculator calculates the power flow from Interchange Transactions. |
| Frequency Bias Setting | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 3/31/2015 | A value, usually expressed in MW/0.1 Hz, set into a Balancing Authority ACE algorithm that allows the Balancing Authority to contribute its frequency response to the Interconnection. |
| Generator Operator | | GOP | 2/8/2005 | 3/16/2007 | | 6/30/2016 | The entity that operates generating unit(s) and performs the functions of supplying energy and Interconnected Operations Services. |
| Generator Owner | | GO | 2/8/2005 | 3/16/2007 | | 6/30/2016 | Entity that owns and maintains generating units. |
| Interchange Authority | | IA | 5/2/2006 | 3/16/2007 | | 6/30/2016 | The responsible entity that authorizes implementation of valid and balanced Interchange Schedules between Balancing Authority Areas, and ensures communication of Interchange information for reliability assessment purposes. |
| Interconnected Operations Service | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | | A service (exclusive of basic energy and transmission services) that is required to support the reliable operation of interconnected Bulk Electric Systems. |
| Interconnection | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 6/30/2016 | When capitalized, any one of the three major electric system networks in North America: Eastern, Western, and ERCOT. |
| Interconnection | Project 2010-14.1 Phase 1 | | 8/15/2013 | 4/16/2015 | | | When capitalized, any one of the four major electric system networks in North America: Eastern, Western, ERCOT and Quebec. |
| Interconnection Reliability Operating Limit | Version 0 Reliability Standards | IROL | 2/8/2005 | 3/16/2007 | | 12/27/2007 | The value (such as MW, MVar, Amperes, Frequency or Volts) derived from, or a subset of the System Operating Limits, which if exceeded, could expose a widespread area of the Bulk Electric System to instability, uncontrolled separation(s) or cascading outages. |
| Intermediate Balancing Authority | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | | A Balancing Authority Area that has connecting facilities in the Scheduling Path between the Sending Balancing Authority Area and Receiving Balancing Authority Area and operating agreements that establish the conditions for |

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| | | | | | | | the use of such facilities. |
| Load-Serving Entity | Version 0 Reliability | | 2/8/2005 | 3/16/2007 | | | Secures energy and transmission service (and related Interconnected Operations Services) to serve the electrical demand and energy requirements of its end-use customers. |
| Low Impact BES Cyber System Electronic Access Point | Project 2014-02 | LEAP | 2/12/2015 | 1/21/2016 | 7/1/2016 | 12/31/2019 | A Cyber Asset interface that controls Low Impact External Routable Connectivity. The Cyber Asset containing the LEAP may reside at a location external to the asset or assets containing low impact BES Cyber Systems. |
| Low Impact External Routable Connectivity | Project 2014-02 | LERC | 2/12/2015 | 1/21/2016 | 7/1/2016 | 12/31/2019 | Direct user-initiated interactive access or a direct device-to-device connection to a low impact BES Cyber System(s) from a Cyber Asset outside the asset containing those low impact BES Cyber System(s) via a bi-directional routable protocol connection. Point-to-point communications between intelligent electronic devices that use routable communication protocols for time-sensitive protection or control functions between Transmission station or substation assets containing low impact BES Cyber Systems are excluded from this definition (examples of this communication include, but are not limited to, IEC 61850 GOOSE or vendor proprietary protocols). |
| Misoperation | Phase III - IV Planning Standards - Archive | | 2/7/2006 | 3/16/2007 | | 6/30/2016 | <ul style="list-style-type: none"> • Any failure of a Protection System element to operate within the specified time when a fault or abnormal condition occurs within a zone of protection. • Any operation for a fault not within a zone of protection (other than operation as backup protection for a fault in an adjacent zone that is not cleared within a specified time for the protection for that zone). • Any unintentional Protection System operation when no fault or other abnormal condition has occurred unrelated to on-site maintenance and testing activity |
| Operational Planning Analysis | Operate Within Interconnection Reliability Operating Limits | | 10/17/2008 | 3/17/2011 | | 9/30/2014 | An analysis of the expected system conditions for the next day's operation. (That analysis may be performed either a day ahead or as much as 12 months ahead.) Expected system conditions include things such as load forecast(s), generation output levels, and known system constraints (transmission facility outages, generator outages, equipment limitations, etc.). |

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| Operational Planning Analysis | Project 2008-12 | | 2/6/2014 | 6/30/2014 | 10/1/2014 | 12/31/2016 | An analysis of the expected system conditions for the next day's operation. (That analysis may be performed either a day ahead or as much as 12 months ahead.) Expected system conditions include things such as load forecast(s), generation output levels, Interchange, and known system constraints (transmission facility outages, generator outages equipment limitations etc) |
| Operational Planning Analysis | Project 2014-03 | OPA | 11/13/2014 | 11/19/2015 | 1/1/2017 | 3/31/2021 | 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 Special Protection System status or degradation; 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). |
| Physical Security Perimeter | Cyber Security (Permanent) | PSP | 5/2/2006 | 1/18/2008 | | 6/30/2016 | The physical, completely enclosed ("six-wall") border surrounding computer rooms, telecommunications rooms, operations centers, and other locations in which Critical Cyber Assets are housed and for which access is controlled. |
| Planning Authority | Version 0 Reliability | PA | 2/8/2005 | 3/16/2007 | | | The responsible entity that coordinates and integrates transmission facility and service plans, resource plans, and protection systems. |
| Point of Receipt | Version 0 Reliability Standards | POR | 2/8/2005 | 3/16/2007 | | 6/30/2016 | A location that the Transmission Service Provider specifies on its transmission system where an Interchange Transaction enters or a Generator delivers its output. |
| Postback | Project 2006-07 ATC/TTC/AFC and CBM/TRM | | 8/22/2008 | Not approved; Modification | | | Positive adjustments to ATC or AFC as defined in Business Practices. Such Business Practices may include processing of redirects and unscheduled service. |
| Protected Cyber Assets | Project 2008-06 Cyber Security Order 706 | PCA | 11/26/2012 | 11/22/2013 | | 6/30/2016 | 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. A Cyber Asset is not a |

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| | | | | | | | Protected Cyber Asset if, for 30 consecutive calendar days or less, it is connected either to a Cyber Asset within the ESP or to the network within the ESP, and it is used for data transfer, vulnerability assessment, maintenance or troubleshooting purposes |
| Protection System | Phase III-IV Planning Standards - | | 2/7/2006 | 3/17/2007 | | 4/1/2013 | Protective relays, associated communication systems, voltage and current sensing devices, station batteries and DC control circuitry. |
| Protection System Maintenance Program (PRC-005-2) | Project 2007-17 Protection System Maintenance and Testing | PSMP | 11/7/2012 | 12/19/2013 | | 4/1/2015 | An ongoing program by which Protection System 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. |
| Protection System Maintenance Program (PRC-005-3) | Project 2007-17.2 Protection System Maintenance and Testing - Phase 2 | PSMP | 11/7/2013 | 1/22/2015 | 4/1/2016 | | An ongoing program by which Protection System and automatic reclosing 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. |

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| | | | | | | | Calibrate — Adjust the operating threshold or measurement accuracy of a measuring element to meet the intended performance requirement. |
| Protection System Maintenance Program (PRC-005-4) | Project 2014-01 Standards Applicability for Dispersed Generation Resources | PSMP | 11/13/2014 | 9/17/2015 | 1/1/2016 | | <p>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:</p> <ul style="list-style-type: none"> • Verify — Determine that the Component is functioning correctly. <p>Monitor — Observe the routine in-service operation of the Component.</p> <ul style="list-style-type: none"> • 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. |
| Pseudo-Tie | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | | A telemetered reading or value that is updated in real time and used as a “virtual” tie line flow in the AGC/ACE equation but for which no physical tie or energy metering actually exists. The integrated value is used as a metered MWh value for interchange accounting purposes. |
| Pseudo-Tie | Project 2008-12 | | 2/6/2014 | 6/30/2014 | 10/1/2014 | 12/31/2018 | 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’ control ACE equations (or alternate control processes). |
| Reactive Power | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 6/30/2016 | 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, |

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| | | | | | | | synchronous condensers, or electrostatic equipment such as capacitors and directly influences electric system voltage. It is usually expressed in kilovars (kvar) or megavars (Mvar) |
| Real Power | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | | The portion of electricity that supplies energy to the load. |
| Reallocation | Version 0 Reliability | | 2/8/2005 | 3/16/2007 | | | The total or partial curtailment of Transactions during TLR Level 3a or 5a to allow Transactions using higher priority to be implemented. |
| Real-time Assessment | Project 2014-03 | | 11/13/2014 | Revised definition. 11/19/2015 | 1/1/2017 | ?? | 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 Special Protection System status or degradation, Transmission outages, generator outages, Interchange, Facility Ratings, and identified phase angle and equipment limitations. (Real-time Assessment may be provided through internal systems or through third-party services.) |
| Real-time Assessment | Operate Within Interconnection Reliability Operating Limits | | 10/17/2008 | 3/17/2011 | | 12/31/2016 | An examination of existing and expected system conditions, conducted by collecting and reviewing immediately available data |
| Reliability Coordinator | Version 0 Reliability Standards | RC | 2/8/2005 | 3/16/2007 | | 6/30/2007 | 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. |
| Reliability Directive | Project 2006-06 Reliability Coordination | | 8/16/2012 | 11/19/2015 | | 11/19/2015 | A communication initiated by a Reliability Coordinator, Transmission Operator, or Balancing Authority where action by the recipient is necessary to address an Emergency or |

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| | | | | | | | Adverse Reliability Impact. |
| Reliability Standard | Project 2012-08.1 Phase 1 of Glossary Updates: Statutory Definitions | | 5/9/2013 | 7/9/2013 | | 6/30/2016 | A requirement, approved by the United States Federal Energy Regulatory Commission under this Section 215 of the Federal Power Act, or approved or recognized by an applicable governmental authority in other jurisdictions, to provide for reliable operation [Reliable Operation] of the bulk-power system [Bulk-Power System]. The term includes requirements for the operation of existing bulk-power system [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 [Reliable Operation] of the bulk-power system [Bulk-Power System], but the term does not include any requirement to enlarge such facilities or to construct new transmission capacity or generation capacity. |
| Reliable Operation | Project 2012-08.1 Phase 1 of Glossary Updates: Statutory Definitions | | 5/9/2013 | 7/9/2013 | | 6/30/2016 | Operating the elements of the bulk-power system [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. |
| Remedial Action Scheme | Version 0 Reliability Standards | RAS | 2/8/2005 | 3/16/2007 | | 3/31/2017 | See "Special Protection System" |
| Removable Media | Project 2014-02 | | 2/12/2015 | 1/21/2016 | 7/1/2016 | 12/31/2019 | Storage media that (i) are not Cyber Assets, (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, a network within an ESP, or a Protected Cyber Asset. Examples 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. |

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| Reporting Ace | | 8/15/2013 | 4/16/2015 (Will not go into effect) | | | | <p>The scan rate values of a Balancing Authority’s Area Control Error (ACE) measured in MW, which includes the difference between the Balancing Authority’s Net Actual Interchange and its Net Scheduled Interchange, plus its Frequency Bias obligation, plus any known meter error. In the Western Interconnection, Reporting ACE includes Automatic Time Error Correction (ATEC).</p> <p>Reporting ACE is calculated as follows: $Reporting\ ACE = (NIA - NIS) - 10B (FA - FS) - IME$</p> <p>Reporting ACE is calculated in the Western Interconnection as follows: $Reporting\ ACE = (NIA - NIS) - 10B (FA - FS) - IME + IATEC$</p> <p>-</p> <p>Where:</p> <p>NIA (Actual Net Interchange) is the algebraic sum of actual megawatt transfers across all Tie Lines and includes Pseudo Ties. Balancing Authorities directly connected via asynchronous ties to another Interconnection may include or exclude megawatt transfers on those Tie lines in their actual interchange, provided they are implemented in the same manner for Net Interchange Schedule.</p> <p>NIS (Scheduled Net Interchange) is the algebraic sum of all scheduled megawatt transfers, including Dynamic Schedules, with adjacent Balancing Authorities, and taking into account the effects of schedule ramps. Balancing Authorities directly connected via asynchronous ties to another Interconnection may include or exclude megawatt transfers on those Tie Lines in their scheduled Interchange, provided they are implemented in the same manner for Net Interchange Actual.</p> <p>B (Frequency Bias Setting) is the Frequency Bias Setting (in negative MW/0.1 Hz) for the Balancing Authority.</p> <p>10 is the constant factor that converts the frequency bias setting units to MW/Hz.</p> <p>FA (Actual Frequency) is the measured frequency in Hz.</p> |

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| | | | | | | | <p>FS (Scheduled Frequency) is 60.0 Hz, except during a time correction.</p> <p>IME (Interchange Meter Error) is the meter error correction factor and represents the difference between the integrated</p> <p>-</p> <p>hourly average of the net interchange actual (NIA) and the cumulative hourly net Interchange energy measurement (in megawatt hours).</p> <p>IATEC (Automatic Time Error Correction) is the addition of a component to the ACE equation for the Western Interconnection that modifies the control point for the purpose of continuously paying back Primary Inadvertent Interchange to correct accumulated time error. Automatic Time Error Correction is only applicable in the Western Interconnection.</p> <p>ATEC shall be zero $\frac{PI_{\text{Inter}}}{(1-f)H}$ when operating in Automatic Time Error Correction control mode, other AGC mode.</p> <p>$Y = B / BS$.</p> <p>H = Number of hours used to payback Primary Inadvertent Interchange energy. The value of H is set to 3.</p> <p>BS = Frequency Bias for the Interconnection (MW / 0.1 Hz).</p> <p>All NERC Interconnections with multiple Balancing Authorities 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 equation that is(are) implemented for all Balancing Authorities on an interconnection and is(are) consistent with the following four principles will</p> <p>provide a valid alternative Reporting ACE equation consistent with the measures included in this standard.</p> <p>1. All portions of the Interconnection are included in one area or another so that the sum of all area generation, loads and losses is the same as total system generation, load and losses.</p> |

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| | | | | | | | <p>2. The algebraic sum of all area Net Interchange Schedules and all Net Interchange actual values is equal to zero at all times.</p> <p>The use of a common Scheduled Frequency FS for all areas at all times.</p> <p>4. The absence of metering or computational errors. (The inclusion and use of the IME term to account for known metering or computational errors.)</p> |
| Reportable Cyber Security Incident | Project 2008-06 Cyber Security Order 706 V5 CIP Standards | | 11/26/2012 | 11/22/2013 | 7/1/2016 | 12/31/2020 | A Cyber Security Incident that has compromised or disrupted one or more reliability tasks of a functional entity. |
| Request for Interchange | Coordinate Interchange | RFI | 5/2/2006 | 3/16/2007 | | | A collection of data as defined in the NAESB RFI Datasheet, to be submitted to the Interchange Authority for the purpose of implementing bilateral Interchange between a Source and Sink Balancing Authority. |
| Reserve Sharing Group | Version 0 Reliability Standards | RSG | 2/8/2005 | 3/16/2007 | | 6/30/2016 | 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 quicker (e.g., between zero and ten minutes) then, for the purposes of Disturbance Control Performance, the Areas become a Reserve Sharing Group. |
| Reserve Sharing Group Reporting ACE | Project 2010-14.1 Phase 1 | | 8/15/2013 | 4/16/2015 | | 12/31/2017 | At any given time of measurement for the applicable Reserve Sharing Group, the algebraic sum of the Reporting ACEs (or equivalent as calculated at such time of measurement) of the Balancing Authorities participating in the Reserve Sharing Group at the time of measurement. |
| Resource Planner | Version 0 Reliability Standards | RP | 2/8/2005 | 3/16/2007 | | | 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. |

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| Right-of-Way | Project 2007-07 | ROW | 2/7/2006 | 3/16/2007 | | | A corridor of land on which electric lines may be located. The Transmission Owner may own the land in fee, own an easement, or have certain franchise, prescription, or license rights to construct and maintain lines. |
| Right-of-Way | Project 2007-07 | ROW | 11/3/2011 | 3/21/2013 | | 6/30/2014 | 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 Transmission Owner's legal rights but may be less based on the aforementioned criteria |
| Sink Balancing Authority | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 9/30/2014 | The Balancing Authority in which the load (sink) is located for an Interchange Transaction. (This will also be a Receiving Balancing Authority for the resulting Interchange Schedule.) |
| Source Balancing Authority | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 9/30/2014 | The Balancing Authority in which the generation (source) is located for an Interchange Transaction. (This will also be a Sending Balancing Authority for the resulting Interchange Schedule.) |
| Special Protection System (Remedial Action Scheme) | Version 0 Reliability Standards | SPS | 2/8/2005 | 3/16/2007 (Becomes inactive 3/31/2017) | | 3/31/2017 | An automatic protection system designed to detect abnormal or predetermined system conditions, and take corrective actions other than and/or in addition to the isolation of faulted components to maintain system reliability. Such action may include changes in demand, generation (MW and Mvar), or system configuration to maintain system stability, acceptable voltage, or power flows. An SPS does not include (a) underfrequency or undervoltage load shedding or (b) fault conditions that must be isolated or (c) out-of-step relaying (not designed |
| System Operating Limit | Version 0 Reliability Standards | SOL | 2/8/2005 | 3/16/2007 | | 6/30/2014 | The value (such as MW, MVar, Amperes, Frequency or Volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. System Operating Limits are based upon certain operating criteria. These include, but are not limited to: Facility Ratings (Applicable pre- and post-Contingency |

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| | | | | | | | equipment or facility ratings) Transient Stability Ratings (Applicable pre- and post-Contingency Stability Limits) Voltage Stability Ratings (Applicable pre- and post-Contingency Voltage Stability) System Voltage Limits (Applicable pre- and post-Contingency Voltage Limits) |
| System Operating Limit | Project 2015-04 Alignment of Terms | SOL | 11/5/2015 | 1/21/2016 | 7/1/2016 | | The value (such as MW, Mvar, amperes, frequency or volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. System Operating Limits are based upon certain operating criteria. These include, but are not limited to: Facility Ratings (applicable pre- and post-Contingency Equipment Ratings or Facility Ratings) transient stability ratings (applicable pre and post-Contingency stability limits) voltage stability ratings (applicable pre-and post-Contingency voltage stability) |
| System Operator | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | 6/30/2016 | An individual at a control center (Balancing Authority, Transmission Operator, Generator Operator, Reliability Coordinator) whose responsibility it is to monitor and control that electric system in real time. |
| Transient Cyber Asset | Project 2014-02 | | 2/12/2015 | 1/21/2016 | 7/1/2016 | | A Cyber Asset that (i) is capable of transmitting or transferring executable code, (ii) is not included in a BES Cyber System, (iii) is not a Protected Cyber Asset (PCA), and (iv) is 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, a network within an ESP, or a PCA. Examples include, but are not limited to, Cyber Assets used for data transfer, vulnerability assessment, maintenance, or troubleshooting purposes. |
| Transmission Customer | Version 0 Reliability Standards | | 2/8/2005 | 3/16/2007 | | | 1. Any eligible customer (or its designated agent) that can or does execute a transmission service agreement or can or does receive transmission service. |

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| | | | | | | | 2. Any of the following responsible entities: Generator Owner, Load-Serving Entity, or Purchasing-Selling Entity. |
| Transmission Operator | Version 0 Reliability Standards | TOP | 2/8/2005 | 3/16/2007 | | | The entity responsible for the reliability of its "local" transmission system, and that operates or directs the operations of the transmission facilities. |
| Transmission Owner | Version 0 Reliability Standards | TO | 2/8/2005 | 3/16/2007 | | | The entity that owns and maintains transmission facilities. |
| Transmission Planner | Version 0 Reliability Standards | TP | 2/8/2005 | 3/16/2007 | | | 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. |
| Transmission Service Provider | Version 0 Reliability Standards | TSP | 2/8/2005 | 3/16/2007 | | | The entity that administers the transmission tariff and provides Transmission Service to Transmission Customers under applicable transmission service agreements. |
| Vegetation Inspection | Project 2007-07 Transmission Vegetation Management | | 2/7/2006 | 3/16/2007 | | 3/20/2013 | The systematic examination of a transmission corridor to document vegetation conditions. |
| Vegetation Inspection | Project 2007-07 Transmission Vegetation Management | | 11/3/2011 | 3/21/2013 | | 6/30/2014 | The systematic examination of vegetation conditions on a Right-of-Way and those vegetation conditions under the Transmission 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. |

NPCC Regional Definitions

| Regional Term | Link to Implementation Plan | Acronym | BOT Adoption Date | FERC Approval Date | Effective Date | Inactive Date | Definition |
|-------------------|--|---------|-------------------|--------------------|----------------|---------------|---|
| Current Zero Time | PRC-002-NPCC-1 Implementation Plan | | 11/4/2010 | 10/20/2011 | 10/20/2013 | | The time of the final current zero on the last phase to interrupt. |
| Generating Plant | PRC-002-NPCC-1 Implementation Plan | | 11/4/2010 | 10/20/2011 | 10/20/2013 | | One or more generators at a single physical location whereby any single contingency can affect all the generators at that location. |

ReliabilityFirst Regional Definitions

| Regional Term | Link to Implementation Plan | Acronym | BOT Adoption Date | FERC Approval Date | Effective Date | Inactive Date | Definition |
|-------------------------|--|---------|--|---------------------------|----------------|---------------|---|
| Resource Adequacy | BAL-502-RFC-02 Implementation Plan | | 8/5/2009 | 3/17/2011 | | | The ability of supply-side and demand-side resources to meet the aggregate electrical demand (including losses) |
| Net Internal Demand | BAL-502-RFC-02 Implementation Plan | | 8/5/2009 | 3/17/2011 | | | Total of all end-use customer demand and electric system losses within specified metered boundaries, less Direct Control Management and Interruptible Demand |
| Peak Period | BAL-502-RFC-02 Implementation Plan | | 8/5/2009 | 3/17/2011 | | | A period consisting of two (2) or more calendar months but less than seven (7) calendar months, which includes the period during which the responsible entity's annual peak demand is expected to occur |
| Wind Generating Station | BAL-502-RFC-02 Implementation Plan | | 11/3/2011 (Board withdrew approval 11/7/2012) | 3/17/2011 | | | A collection of wind turbines electrically connected together and injecting energy into the grid at one point, sometimes known as a "Wind Farm." |
| Year One | BAL-502-RFC-02 Implementation Plan | | 8/5/2009 | 3/17/2011 | | | The planning year that begins with the upcoming annual Peak Period |

Texas RE Regional Definitions

| Regional Term | Link to Implementation Plan | Acronym | BOT Adoption Date | FERC Approval Date | Effective Date | Inactive Date | Definition |
|----------------------------|---|---------|-------------------|--------------------|----------------|---------------|---|
| Frequency Measurable Event | BAL-001-TRE-1 Implementation Plan | FME | 8/15/2013 | 1/16/2014 | 4/1/2014 | | <p>An event that results in a Frequency Deviation, identified at the BA's sole discretion, and meeting one of the following conditions:</p> <p>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).</p> <p>Or</p> <p>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).</p> |
| Governor | | | 8/15/2013 | 1/16/2014 | 4/1/2014 | | The electronic, digital or mechanical device that implements Primary Frequency Response of generating units/generating facilities or other system elements. |
| Primary Frequency Response | BAL-001-TRE-1 Implementation Plan | PFR | 8/15/2013 | 1/16/2014 | 4/1/2014 | | 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. |

WECC Regional Definitions

| Regional Term | Link to Standards Under Development | Acronym | BOT Adoption Date | FERC Approval Date | Effective Date | Inactive Date | Definition |
|---|---|---------|-------------------|--------------------|----------------|---------------|---|
| Area Control Error* | WECC Regional Standards Under Development | ACE | 3/12/2007 | 6/8/2007 | | 3/31/2014 | Means the instantaneous difference between net actual and scheduled interchange, taking into account the effects of Frequency Bias including correction for meter error. |
| Automatic Generation Control* | WECC Regional Standards Under Development | AGC | 3/12/2007 | 6/8/2007 | | | Means equipment that automatically adjusts a Control Area's generation from a central location to maintain its interchange schedule plus Frequency Bias. |
| Automatic Time Error Correction | WECC Regional Standards Under Development | | 3/26/2008 | 5/21/2009 | | 3/31/2014 | A frequency control automatic action that a Balancing Authority uses to offset its frequency contribution to support the Interconnection's scheduled frequency. |
| Automatic Time Error Correction | WECC Regional Standards Under Development | | 12/19/2012 | 10/16/2013 | 4/1/2014 | | 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. |
| Average Generation * | WECC Regional Standards Under Development | | 3/12/2007 | 6/8/2007 | | | Means the total MWh generated within the Balancing Authority Operator's Balancing Authority Area during the prior year divided by 8760 hours (8784 hours if the prior year had 366 days). |
| Business Day * | WECC Regional Standards Under Development | | 3/12/2007 | 6/8/2007 | | | Means any day other than Saturday, Sunday, or a legal public holiday as designated in section 6103 of title 5, U.S. Code. |
| Commercial Operation | WECC Regional Standards Under Development | | 10/29/2008 | 4/21/2011 | | | 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. |
| Contributing Schedule | WECC Regional Standards Under Development | | 2/10/2009 | 3/17/2011 | | 9/30/2019 | A Schedule not on the Qualified Transfer Path between a Source Balancing Authority and a Sink Balancing Authority that contributes unscheduled flow across the Qualified Transfer Path. |
| Dependability-Based Misoperation | WECC Regional Standards Under Development | | 10/29/2008 | 4/21/2011 | | | Is the absence of a Protection System or RAS operation when intended. Dependability is a component of reliability and is the measure of a device's certainty to operate when required. |
| Disturbance * | WECC Regional Standards Under Development | | 3/12/2007 | 6/8/2007 | | Retired | Means (i) any perturbation to the electric system, or (ii) the unexpected change in ACE that is caused by the sudden |

WECC Regional Definitions

| Regional Term | Link to Standards Under Development | Acronym | BOT Adoption Date | FERC Approval Date | Effective Date | Inactive Date | Definition |
|---|---|---------|-------------------|--------------------|----------------|---------------|---|
| | Development | | | | | | loss of generation or interruption of load. |
| Extraordinary Contingency¹ | WECC Regional Standards Under Development | | 3/12/2007 | 6/8/2007 | | | Shall have the meaning set out in Excuse of Performance, section B.4.c. language in section B.4.c: <i>means any act of God, actions by a non-affiliated third party, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, earthquake, explosion, accident to or breakage, failure or malfunction of machinery or equipment, or any other cause beyond the Reliability Entity's reasonable control; provided that prudent industry standards (e.g. maintenance, design, operation) have been employed; and provided further that no act or cause shall be considered an Extraordinary Contingency if such act or cause results in any contingency contemplated in any WECC Reliability Standard (e.g., the "Most Severe Single Contingency" as defined in the WECC Reliability Criteria or any lesser contingency).</i> |
| Frequency Bias * | WECC Regional Standards Under Development | | 3/12/2007 | 6/8/2007 | | | Means a value, usually given in megawatts per 0.1 Hertz, associated with a Control Area that relates the difference between scheduled and actual frequency to the amount of generation required to correct the difference. |
| Functionally Equivalent Protection System | WECC Regional Standards Under Development | FEPS | 10/29/2008 | 4/21/2011 | | | A Protection System that provides performance as follows: <ul style="list-style-type: none"> • Each Protection System can detect the same faults within the zone of protection and provide the clearing times and coordination needed to comply with all Reliability Standards. • Each Protection System may have different components and operating characteristics. |
| Generating Unit Capability * | WECC Regional Standards Under Development | | 3/12/2007 | 6/8/2007 | | | Means the MVA nameplate rating of a generator. |
| Non-spinning Reserve² | WECC Regional Standards Under Development | | 3/12/2007 | 6/8/2007 | | Retired | Means that Operating Reserve not connected to the system but capable of serving demand within a specified time, or |

¹ FERC approved the WECC Tier One Reliability Standards in the Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications, 119 FERC ¶ 61,260 (June 8, 2007). In that Order, FERC directed WECC to address the inconsistencies between the regional definitions and the NERC Glossary in developing permanent replacement standards. The replacement standards designed to address the shortcomings were filed with FERC in 2009.

² FERC approved the WECC Tier One Reliability Standards in the Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications, 119 FERC ¶ 61,260 (June 8, 2007). In that Order, FERC directed WECC to address the inconsistencies between the regional definitions and the NERC Glossary in developing permanent replacement

WECC Regional Definitions

| Regional Term | Link to Standards Under Development | Acronym | BOT Adoption Date | FERC Approval Date | Effective Date | Inactive Date | Definition |
|---|---|---------|-------------------|--------------------|----------------|---------------|---|
| | Development | | | | | | interruptible load that can be removed from the system in a specified time. |
| Normal Path Rating * | WECC Regional Standards Under Development | | 3/12/2007 | 6/8/2007 | | | Is the maximum path rating in MW that has been demonstrated to WECC through study results or actual operation, whichever is greater. For a path with transfer capability limits that vary seasonally, it is the maximum of all the seasonal values. |
| Operating Reserve * | WECC Regional Standards Under Development | | 3/12/2007 | 6/8/2007 | | | Means that capability above firm system demand required to provide for regulation, load-forecasting error, equipment forced and scheduled outages and local area protection. Operating Reserve consists of Spinning Reserve and Nonspinning Reserve. |
| Operating Transfer Capability Limit * | WECC Regional Standards Under Development | OTC | 3/12/2007 | 6/8/2007 | | | Means the maximum value of the most critical system operating parameter(s) which meets: (a) precontingency criteria as determined by equipment loading capability and acceptable voltage conditions, (b) transient criteria as determined by equipment loading capability and acceptable voltage conditions, (c) transient performance criteria, and (d) post-contingency loading and voltage criteria. |
| Primary Inadvertent Interchange | WECC Regional Standards Under Development | | 3/26/2008 | 5/21/2009 | | | The component of area (n) inadvertent interchange caused by the regulating deficiencies of the area (n). |
| Qualified Controllable Device | WECC Regional Standards Under Development | | 2/10/2009 | 3/17/2011 | | 9/30/2019 | A controllable device installed in the Interconnection for controlling energy flow and the WECC Operating Committee has approved using the device for controlling the USF on the Qualified Transfer Paths. |
| Qualified Path | WECC Regional Standards Under Development | | 2/7/2019 | 5/10/2019 | 10/1/2019 | | A transmission element, or group of transmission elements that has qualified for inclusion into the Western Interconnection Unscheduled Flow Mitigation Plan (WIUFMP). |
| Qualified Transfer Path | WECC Regional Standards Under Development | | 2/10/2009 | 3/17/2011 | | 9/30/2019 | A transfer path designated by the WECC Operating Committee as being qualified for WECC unscheduled flow mitigation. |
| Qualified Transfer | WECC Regional | | 2/10/2009 | 3/17/2011 | | 9/30/2019 | Each hour that a Transmission Operator calls for Step 4 or |

standards. The replacement standards designed to address the shortcomings were filed with FERC in 2009.

WECC Regional Definitions

| Regional Term | Link to Standards Under Development | Acronym | BOT Adoption Date | FERC Approval Date | Effective Date | Inactive Date | Definition |
|---|---|---------|-------------------|--------------------|----------------|---------------|--|
| Path Curtailment Event | Standards Under Development | | | | | | higher for one or more consecutive hours (See Attachment 1 IRO-006-WECC-1) during which the curtailment tool is functional. |
| Relief Requirement | WECC Regional Standards Under Development | | 2/10/2009 | 3/17/2011 | | 6/30/2014 | The expected amount of the unscheduled flow reduction on the Qualified Transfer Path that would result by curtailing each Sink Balancing Authority's Contributing Schedules by the percentages listed in the columns of WECC Unscheduled Flow Mitigation Summary of Actions Table in Attachment 1 WECC IRO-006-WECC-1. |
| Relief Requirement | WECC Regional Standards Under Development | | 2/7/2013 | 6/13/2014 | 7/1/2014 | 9/30/2019 | The expected amount of the unscheduled flow reduction on the Qualified Transfer Path that would result by curtailing each Sink Balancing Authority's Contributing Schedules by the percentages determined in the WECC unscheduled flow mitigation guideline. |
| Secondary Inadvertent Interchange | WECC Regional Standards Under Development | | 3/26/2008 | 5/21/2009 | | | The component of area (n) inadvertent interchange caused by the regulating deficiencies of area (i). |
| Security-Based Misoperation | WECC Regional Standards Under Development | | 10/29/2008 | 4/21/2011 | | | A Misoperation caused by the incorrect operation of a Protection System or RAS. Security is a component of reliability and is the measure of a device's certainty not to operate falsely. |
| Spinning Reserve ³ | WECC Regional Standards Under Development | | 3/12/2007 | 6/8/2007 | | Retired | Means unloaded generation which is synchronized and ready to serve additional demand. It consists of Regulating reserve and Contingency reserve (as each are described in Sections B.a.i and ii). |
| Transfer Distribution Factor | WECC Regional Standards Under Development | TDF | 2/10/2009 | 3/17/2011 | | 9/30/2019 | The percentage of USF that flows across a Qualified Transfer Path when an Interchange Transaction (Contributing Schedule) is implemented. [See the WECC Unscheduled Flow Mitigation Summary of Actions Table (Attachment 1 WECC IRO-006-WECC-1).] |
| WECC Table 2 | WECC Regional Standards Under Development | | 3/12/2007 | 6/8/2007 | | | Means the table maintained by the WECC identifying those transfer paths monitored by the WECC regional Reliability coordinators. As of the date set out therein, the transmission paths identified in Table 2 are as listed in |

³ FERC approved the WECC Tier One Reliability Standards in the Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications, 119 FERC ¶ 61,260 (June 8, 2007). In that Order, FERC directed WECC to address the inconsistencies between the regional definitions and the NERC Glossary in developing permanent replacement standards. The replacement standards designed to address the shortcomings were filed with FERC in 2009.

WECC Regional Definitions

| Regional Term | Link to Standards Under Development | Acronym | BOT Adoption Date | FERC Approval Date | Effective Date | Inactive Date | Definition |
|---------------|-------------------------------------|---------|-------------------|--------------------|----------------|---------------|--------------------------------|
| | | | | | | | Attachment A to this Standard. |

Change History

| Date | Action |
|------------|---|
| 8/27/2024 | Added "Filed and Pending Regulatory Approval" Category and CIP Virtualization Terms |
| 7/22/2024 | Updated EOP-012-2 terms (Generator Cold Weather Critical Component, Fixed Fuel Supply Component, Generator Cold Weather Reliability Event, Generator Cold Weather Constraint) to Pending Enforcement |
| 5/7/2024 | Updated ACE Definition to Pending Enforcement 7/1/2024 |
| 4/1/2024 | Moved; to Subject to Enforcement Tab: System Voltage Limit, System Operating Limit |
| 12/1/2023 | Added; Actual Frequency to Subject to Enforcement Tab |
| 3/8/2023 | Updated Effective Date to 10/1/2024 for: 1 Generator Cold Weather Critical Component 2 Extreme Cold Weather Temperature 3 Generator Cold Weather Reliability Event |
| 12/21/2022 | Updated; Generator Cold Weather Critical Component, Extreme Cold Weather Temperature, Generator Cold Weather Reliability Event |
| 12/2/2022 | Updated; Automatic Time Error Correction (ATEC) |
| 3/29/2022 | Added to Pending Enforcement System Voltage Limit and System Operating Limit |
| 4/2/2021 | Retired; moved to the Retired Terms Tab: Reportable Cyber Security Incident |
| 3/31/2021 | Retired; moved to the Retired Terms tab: |
| 3/15/2021 | Moved; to Subject to Enforcement Tab Operational Planning Analysis (OPA) Protections System Coordination Study 3 Real-time Assessment (RTA) |
| 1/4/2021 | Effective; moved to Subject to Enforcement Tab: Cyber Security Incident |
| 1/4/2021 | Retired; moved to the Retired Terms Tab: Cyber Security Incident |
| 10/8/2020 | Retired; moved to the Retired Terms tab. Automatic Generation Control Balancing Authority 3 Pseudo-Tie |
| 5/29/2020 | Updated effective date for Operational Planning Analysis (OPA), Protections System Coordination Study and Real-time Assessment (RTA) to 4/21/2021 per FERC/s April 17th Order extending effective dates due to COVID-19 |
| 2/24/2020 | Added inactive Date to Qualified Transfer Path Curtailment Event, Contributing Schedule, Qualified Controllable Device, Relief Requirement and Transfer Distribution Factor |
| 1/2/2020 | Effective; moved to the Subject to Enforcement tab: Definition of Transient Cyber Asset (TCA) 2 Definition of Removable Media |
| 1/2/2020 | Retired; moved to the Retired Terms tab. Low Impact BES Cyber System Electronic Access Point (LEAP) Low Impact External Routable Connectivity (LERC) Transient Cyber Asset (TCA) 4 Removable Media |
| 8/12/2019 | Added revised definitions of Cyber Security Incident and Reportable Cyber Security Incident to the Pending Enforcement tab. |
| 5/10/2019 | Added Inactive Date to Qualified Transfer Path. Added Qualified Path definition and Effective |

Change History

| Date | Action |
|-----------|--|
| | Date |
| 3/8/2019 | Moved "Automatic Generation Control " "Balancing Authority" and "Pseudo-tie" to Subject to Enforcement tab |
| 7/3/2018 | Updated effective date for Operational Planning Analysis (OPA), Protections System Coordination Study and Real-time Assessment (RTA). |
| 6/12/2018 | Added revised definitions of Transient Cyber Asset and Removable Media to the Pending Enforcement tab. |
| 1/31/2018 | Fixed truncated definition for Texas RE term Primary Frequency Response |
| 1/2/2018 | Moved to Subject to Enforcement: Balancing Contingency Event; Contingency Event Recovery Period; Contingency Reserve; Contingency Reserve Restoration Period; Most Severe Single Contingency; Pre-Reporting Contingency Event ACE Value; Reportable Balancing Contingency Event; Reserve Sharing Group Reporting ACE Moved to Retired tab: Contingency Reserve; Reserve Sharing Group Reporting ACE |
| 10/6/2017 | Added the Effective date of Automatic Generation Control Pseudo-Tie and Balancing Authority |
| 8/1/2017 | Moved to Subject to Enforcement: Reporting Ace, Actual Frequency, Actual Net Interchange, Schedule Net Interchange, Interchange Meter Error Automatic Time Error Correction |
| 7/24/2017 | Updated project link for definitions related to Project 2014-02, board adopted 2/12/15. |
| 7/14/2017 | Updated project link to Remedial Action Scheme with an effective date of 4/1/17; Removeable Media link to project 2014-02. |
| 7/3/2017 | Moved 'Geomagnetic Disturbance Vulnerability Assessment or GMD Vulnerability Assessment' to Subject to Enforcement |
| 6/15/2017 | Readded 'Governor' and 'Primary Frequency Response' to Texas RE |
| 4/4/2017 | Moved to Subject to Enforcement: Energy Emergency, Remedial Action Scheme, Special Protection System and Under3 Voltage Load Shedding Program Moved terms inactive 3/31/17 to Retired tab |
| 3/16/2017 | Removed Pending Inactive tab; not necessary |
| 3/10/2017 | Added Pending Inactive tab |
| 2/7/2017 | Added Effective Dates for: Balancing Contingency Event, Most Severe Single Contingency (MSSC), Reportable Balancing Contingency Event, Contingency Event Recovery Period, Contingency Reserve Restoration Period, Pre-Reporting Contingency Event ACE Value, Reserve Sharing Group Reporting ACE Contingency Reserve |
| 1/25/2017 | Removed WECC terms 'Non-Spinning Reserve' and 'Spinning Reserve' per FERC Order No 789 Docket No RM13-13-000 |
| 1/6/2017 | Moved the following terms from Pending Enforcement to Subject to Enforcement: Operational Planning Analysis, Real-time Assessment (Revised Definition) |
| 1/5/2017 | Formatting of Glossary of Terms updated. |
| 12/12/16 | Updated: 'Adverse Reliability Impact' from Pending to Retired. NERC withdrew the related petition 3/18/2015 |
| 11/28/16 | Updated ReliabilityFirst - Wind Generating Station term to inactive |

Change History

| Date | Action |
|---------|--|
| 9/28/16 | Updated CIP v 5 standards effective date from 4/1/2016 to 7/1/2016 per FERC Order 822 |
| 8/17/16 | Board Adopted: Operational Planning Analysis and Real-time Assessment |
| 7/13/16 | Updated color coding of terms retired 6/30/2016 based on the terms becoming effective 7/1/2016. |
| 6/24/16 | FERC approved: Actual Frequency Actual Net Interchange Scheduled Net |
| | Interchange (NIS), Interchange Meter Error (IME), and Automatic Time Error Correction (ATEC) |
| | Reporting ACE: status updated |
| 6/21/16 | Correction: Reserve Sharing Group Reporting ACE, and Contingency Reserve changed to 11/5/2015 Board adoption date status |
| 4/1/16 | Effective: BES Cyber Asset, BES Cyber System, BES Cyber System Information, CIP Exceptional Circumstance, CIP Senior Manager, Cyber Assets, Cyber Security Incident, Dial-up Connectivity, Electronic Access Control or Monitoring Systems, Electronic Access Point, Electronic Security Perimeter, External Routable Connectivity, Interactive Remote Access, Intermediate System, Physical Access Control Systems, Physical Security Perimeter |
| 3/31/16 | Inactive: Critical Assets, Critical Cyber Assets, Cyber Assets, Cyber Security Incident, Electronic Security Perimeter, Physical Security Perimeter |