Required Data Specification for the SPP Reliability Coordinator & the SPP Balancing Authority (BA) in the Eastern Interconnection (RDSEI)

0820EXT00126

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REVISION HISTORY

Version	Description of Modification	Revision Date	Effective Date
1.0	Version 1 - Created standalone document from SPP Operating Criteria Appendix OP-1. Updated document for NERC Standards IRO-010-2 and TOP-003-3. Included additional SPP Balancing Authority specific requirements.	January 1, 2017	January 1, 2017
2.0	Version 2 - Incorporated approved revisions to reflect the use of the Ratings Submission Tool being required. Incorporated revisions to clarify 'Telemetering and Control System Status Requirement'.	March 29, 2017	March 29, 2017
3.0	Version 3 – Incorporated approved revisions to the following requirements: 'Status of Generator Voltage Regulating Capability' 'MVA Capability Normal (Normal Rating)' 'MVA Capability Normal (Emergency Rating)' 'Remedial Action Scheme Status' 'Model Characteristic Updates – Currently Operational Equipment' 'Model Characteristic Updates – Future Equipment' 'Remedial Action Schemes' 'Switching Equipment' 'Tie Line Metering Maintenance'	March 9, 2018	March 9, 2018

4.0	Version – Incorporated approved revisions to the following requirements: 'Remedial Action Scheme Status' 'Hourly MW-Hour Meter Values' 'Real-Time Tie-Line MW Value'	June 17, 2019	June 17, 2019
5.0	Additions to data specification to incorporate RR318/RR338 approved changes, effective 11/6/2019. Additions include new section amended to end of document titled "**SPP BA Required Potential Contingency Reporting"**	November 1, 2019	11/06/2019
6.0	Edits to point to Outage Coordination Methodology document	December 15, 2020	12/15/2020
7.0	Additions to data specification to incorporate RR495 approved changes, effective July 1, 2022 including replaced Model Change Submission Tool (MCST) with Request Management System (RMS), CIP-012 RTA/RTM references, General Clean-up, and new Dynamic Model Characteristic Updates data requirements	June 30, 2022	July 1, 2022
8.0	Added section SPP BA Required TOP Load Data for Load Shed Calculation section, per RR 506, effective 9/1/2022.	November 01, 2022	November 01, 2022
9.0	Updated document per new NERC standard IRO-010-4 and TOP-003-5 requirements.	January 03, 2023	April 1, 2023

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INTRODUCTION

The data specifications identified in this document are a comprehensive listing of the information required by the SPP Reliability Coordinator and SPP Balancing Authority to perform their Operational Planning Analyses, Real-time monitoring, and Real-time Assessments as stipulated by NERC Standards IRO-010 and TOP-003.

RESPONSIBLE ENTITIES

- All Reliability Coordinators adjacent to the SPP Reliability Coordinator Area; and
- All Balancing Authorities adjacent to the SPP Balancing Authority Area; and
- All Balancing Authorities, Generator Owners, Generator Operators, Transmission Operators, Transmission Owners, and Distribution Providers within the SPP Reliability Coordinator Area; and Balancing Authority Areas
- All Generator Owners, Generator Operators, Transmission Operators, Transmission Owners, and Distribution Providers within the SPP Balancing Authority Area
- Other entities as deemed applicable by SPP, including those not registered with NERC. Such entities will receive notification from SPP of the specific data required.

DATA SHARING BETWEEN THE SPP RC AND THE SPP BA

For the purposes of meeting the requirements identified in this document, all data in the possession of either the SPP Reliability Coordinator (RC) or the SPP Balancing Authority (BA) is inherently available to both.

PROCESS FOR RESOLVING DATA CONFLICTS

For purposes of uniformity, SPP data specifications include the periodicity, deadline, format and security protocols for each piece of information. If the Responsible Entity cannot meet one or more of the data specifications, then the Responsible Entity shall submit its exceptions and proposed solutions using the SPP Request Management System. Responsible Entities without access to the SPP Request Management System can contact SPP using other means. SPP Staff and the Responsible Entity shall coordinate to reach a mutually agreeable alternative or temporary solution. If SPP identifies a piece of information that is not being provided per the data specifications, SPP will contact the Responsible Entity to reach a mutually agreeable alternative or temporary solution.

DESCRIPTIONS OF SECURITY PROTOCOLS

ICCP

All Inter-Control Center Communications Protocol (ICCP) data exchanged between SPP and any other entity utilizes a direct telecommunication connection with both SPP's primary (or Outbound) and secondary ICCP nodes concurrently.

Email

Required data communicated to SPP via email that the originator deems to be confidential shall be sent as a password protected attachment. Passwords should be provided in a separate communication. Required data that the originator does not deem to be confidential is not required to be exchanged as a password protected attachment.

Phone

Entities providing information required in this data specification deemed to be confidential by phone are expected to verify they are speaking to the intended recipient before providing the information.

Outage Scheduler Tool

Access is granted through secure digital certificate as submitted by an entity's Local Security Administrator and approved by SPP.

Secure Electronic

All means of communication identified as secure electronic in this document use one or more of the following security measures. Username and Password, Digital Certificate, Direct Telecommunication Connection.

PERIODICITY OF ICCP DATA EXCHANGE

In the tables below, each data type that is exchanged via ICCP, excluding "Report by Exception," is assigned a periodicity requirement of "No greater than X seconds". This requirement is intended to represent the maximum interval at which this data can be exchanged. This requirement is not intended to represent the interval at which this data must be exchanged. In many cases, data is exchanged at a faster rate than the requirement in the Periodicity column of the tables below.

CIP-012 APPLICABILITY

Real-Time Assessment (RTA) and Real-Time Monitoring (RTM) data encrypted per CIP-012 have been tagged for identification purposes.

SPP RC REQUIRED BALANCING AUTHORITY DATA

Data Type: Balancing Authority Area Demand
Applicability: Balancing Authority within the SPP RC Area
Description/Requirements: Instantaneous calculation of the generation minus actual interchange for the Balancing Authority Area. The unit of measurement is MW.
Coordination surrounding inclusion of behind the meter load and generation must be made with the Reliability Coordinator.
Data Format: ICCP
Periodicity: No greater than 10 seconds
Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTM

Data Type: Scheduled Net Interchange
Applicability: Balancing Authority within the SPP RC Area
Description/Requirements: Instantaneous total net scheduled MW flow into or out of the Balancing Authority Area
Data Format: ICCP
Periodicity: No greater than 10 seconds
Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTM

Data Type: Actual Interchange
Applicability: Balancing Authority within the SPP RC Area
Description/Requirements: Instantaneous total net MW flow into or out of the Balancing Authority Area
Data Format: ICCP
Periodicity: No greater than 10 seconds
Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTM

Data Type: Area Control Error (ACE)
Applicability: Balancing Authority within the SPP RC Area
Description/Requirements: Instantaneous measurement of the area control error (ACE). Unit of measurement is MW. Value may be positive or negative.
Data Format: ICCP
Periodicity: No greater than 10 seconds

Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTM

Data Type: System Frequency
Applicability: Balancing Authority within the SPP RC Area
Description/Requirements: Instantaneous readings of the actual frequency in Hz measured at several locations in the Balancing Authority Area. This is not the deviation from scheduled frequency but should be the actual measured frequency value.
Data Format: ICCP
Periodicity: No greater than 10 seconds
Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTM

Data Type: Scheduled Base Frequency
Applicability: Balancing Authority within the SPP RC Area
Description/Requirements: Instantaneous reading of the scheduled (base) frequency in Hz. This is not the deviation from a value (nominally 60 Hz). If this value is only valid during periods of time error correction, then a status indication value must also be supplied to indicate whether time correction is in effect or not.
Data Format:
    Scheduled Frequency: ICCP
    Time Error Correction Status: ICCP
Periodicity:
    Scheduled Frequency: No greater than 10 seconds
    Time Error Correction Status: Report by Exception
Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTM

Data Type: Load Forecast
Applicability: Balancing Authority within the SPP RC Area
Description/Requirements: Hourly forecast/actual integrated load, in MW, for the prior, current, and next six days. Prior day actual loads are mandatory. Current and next six day forecast loads are requested. If the current and future day forecast is not supplied, a forecast will be derived from previously reported actual loads and forecast weather information.
Data Format: File
Periodicity: By 7:00 AM Daily
Security Protocol: Secure Electronic
Deadline: 4/1/2017

SPP RC AND SPP BA REQUIRED GENERATOR DATA (RESOURCES 10MW OR GREATER)

Data Type: Status
Applicability: Generator Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Instantaneous status of the generator as telemetered, or as derived from the status of the breaker associated with the generator unit. Possible values are In-service, Out-of-Service, and Between, or On, Off, and Between.
Data Format: ICCP
Periodicity: Report by Exception
Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTM

Data Type: MW Capability
Applicability: Generator Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Limit on the gross or net Real Power (MW) output of a generator unit. This value may be either a static or dynamic limit. Unit of measurement is in MW.
Data Format: For static limits use network model exchange or written notification to EngModelChanges@spp.org
Periodicity: Upon implementation of update
Security Protocol: Email
Deadline:
Initial: 4/1/2017
Updates:
At least 7 calendar days prior to the updated system model data becoming effective (i.e. energizing the revised system). Changes submitted within the 7 day requirement, will be evaluated and accepted at the discretion of the SPP RC.
or
Within 20 business days, upon request of SPP

Data Type: MW Output
Applicability: Generator Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Instantaneous measurement of the gross or net real output power from the generator. If gross measurements are supplied, the station auxiliary measurements must also be supplied so that net measurements can be derived. Unit of measurement is in MW.
Data Format: ICCP
Periodicity: No greater than 10 seconds
Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTM

Data Type: MVar Output
Applicability: Generator Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Instantaneous measurement of the gross or net reactive output power from the generator. If gross measurements are supplied, the station auxiliary measurements must also be supplied so that net measurements can be derived.
Unit of measurement is in MW.
Data Format: ICCP
Periodicity: No greater than 10 seconds
Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTM

Data Type: Status of Generator Voltage Regulating Capability
Applicability: Generator Operator within the SPP RC Area or SPP BA Area
Description/Requirements:
For the purposes of this requirement, a generator's voltage regulating capability shall be categorized as either automatic voltage regulation capability (AVRC) or manual voltage regulation capability (MVRC). AVRC is defined as the capability of a generator to modify its Net VAR Output automatically in response to changes in system conditions without operator action. MVRC is defined as the capability of a generator to modify its Net VAR Output through manual operator action. For the purposes of this requirement, Net VAR Output is defined as the cumulative VAR injection to or consumption from the BES of all equipment at the generator station.
Generators with AVRC shall provide, via ICCP, a real-time status of the ability to regulate its net VAR output automatically. Generators with MVRC (and generators with AVRC operating in manual mode) shall inform the RC, via phone call, when MVRC is lost and the generator will remain online for 10 minutes or more. Generators exempted from the requirements of VAR-002-4 by their Transmission Operator are exempt from this requirement.
Data Format:
AVRC Status: ICCP
MVRC Status Changes: Phone Call to RC
Periodicity:
AVRC Status: No greater than 10 seconds
MVRC Status Changes: Per Event
Security Protocol:
AVRC Status: ICCP
MVRC Status Changes: Phone
Deadline:
AVRC Status: 5/1/2018
MVRC Status Changes: 5/1/2018
CIP-012: RTM

Data Type: Topology Updates
Applicability: Generator Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Notification of new or changes to existing equipment, including, Generators, Breakers, Buses, Switches, etc. and the expected in-service date of that equipment. Information can be provided in the form of System One-Line Diagrams or other descriptive information.
Data Format: Email to ENGModelChanges@spp.org or uploaded using the SPP Request Management System (RMS)
Periodicity: Upon availability of updated information
Security Protocol: Email or Secure Electronic
Deadline:

Initial: 4/1/2017

Updates:

At least 21 calendar days prior to the first day of the month in which the applicable topology change is scheduled to become energized in the revised SPP transmission system,

or

Within 30 calendar days, upon request of SPP.

Data Type: Model Characteristic Updates
Applicability: Generator Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Unit characteristics. For example, connecting substation name, turbine type, primary fuel type. Optional SCADA limits (used for display/operator alarming).
Data Format: Email to ENGModelChanges@spp.org or uploaded using the SPP Request Management System (RMS)
Periodicity: Upon availability of updated information
Security Protocol: Email or Secure Electronic
Deadline:

Initial: 4/1/2017

Updates:

At least 7 calendar days prior to the updated system model data becoming effective (i.e. energizing the revised system). Changes submitted within the 7 day requirement, will be evaluated and accepted at the discretion of the SPP RC,

or

Within 20 business days, upon request of SPP.

Data Type: Gross or Net Generation Modeling
Applicability: Generator Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Indication of the use of either gross or net generation measurements (MW and MVAR). If gross measurements are supplied, the station auxiliary measurements must also be supplied so that net measurements can be derived.
Data Format: Email to ENGModelChanges@spp.org or uploaded using the SPP Request Management System (RMS)
Periodicity: Upon availability of updated information
Security Protocol: Email or Secure Electronic
Deadline:

Initial: 4/1/2017

Updates:

At least 21 calendar days prior to the first day of the month in which the applicable topology change is scheduled to become energized in the revised SPP transmission system,

or

Within 30 calendar days, upon request of SPP.

Data Type: Dynamic Model Characteristic Updates
Applicability: Generator Owner within the SPP RC Area or SPP BA Area (Resources 20 MVA or Greater unless directed by the RC to provide data for an identified resource)
Description/Requirements: Up-to-date dynamic model data for generating facilities that is appropriate to represent with a dynamic model for transient analysis events near the Point of Interconnection (POI) compatible with Dynamic Security Assessment (DSA) Tools Transient Security Assessment Tool (TSAT) software. Identification of each applicable dynamic model with appropriate values and files for all model parameters including topology from the POI (i.e. buses, units, circuits, devices, dyre parameter, etc.), test reports that support the model data based on field/commissioning tests (if available), model libraries for user defined models not included in the TSAT standard model library with comprehensive documentation/user guides containing a technical description of the model characteristics and procedures for using the model.

Note: Data may be identified from the most recently approved Model Development Advisory Group (MDAG) final dynamic models to fulfill this requirement only when it is appropriate to evaluate events near the POI and converts to a DSA Tools TSAT software standard library.

Data Format: Dynamic model data (i.e. *.dyr, *.dll, *.tudm, etc.) compatible with DSA Tools TSAT software. Email to EngModelChanges@spp.org and when applicable FTP Upload.
Periodicity: Upon availability of updated information
Security Protocol: Email or Secure Electronic

Deadline:

Initial: 9/2/2022 for facilities with available model data or 6/2/2023 with a model development plan provided to SPP by 9/2/2022
Updates: Within 30 calendar days of a request made by SPP or updated information being determined, at least 30 calendar days prior to a new resource scheduled to become energized

Data Type: Generator Fuel Switching Capability
Applicability: Generator Operator (or Owner) within the SPP RC & BA Area
Description/Requirements: Notification of fuel switching capability and fuel type options
Data Format: Email to ENGModelChanges@spp.org or uploaded using the SPP Request Management System (RMS)
Periodicity: Initially and upon implementation of update
Security Protocol: Email or Secure Electronic
Deadline: 7/1/2023 and Generating Fuel Switching Capability updates submit prior to implementation date

Data Type: Generating Unit Minimum Temperature
Applicability: Generator Operator (or Owner) within the SPP RC & BA Area
Description/Requirements: Generating unit(s) minimum design temperature; or historical operating temperature; or current cold weather performance temperature determined by an engineering analysis
Data Format: Email to ENGModelChanges@spp.org or uploaded using the SPP Request Management System (RMS)
Periodicity: Initially and upon implementation of update
Security Protocol: Email or Secure Electronic
Deadline: 7/1/2023 and Generating Unit Minimum temperature updates submit prior to implementation date

SPP RC AND SPP BA REQUIRED TRANSMISSION DATA

Data Type: Facility Status
Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Current status of the switching devices (breakers, switches, disconnects) at each end of a transmission Facility. Facilities include transformers, lines, and reactive devices. Possible values are Open and Closed for two-state devices and Open, Closed, and Between for three-state devices.
Data Format: ICCP. For devices without telemetered status, voice notification to the RC is acceptable.
Periodicity: Report by Exception
Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTA

Data Type: Facility Loading MW
Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Instantaneous Real Power flow in MW on the transmission Facility where available. Unit of measurement is in MW.
Data Format: ICCP
Periodicity: No greater than 10 seconds
Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTA

Data Type: Facility Loading Mvar
Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Instantaneous Reactive Power flow in Mvar on the transmission Facility where available. Unit of measurement is in Mvar.
Data Format: ICCP
Periodicity: No greater than 10 seconds
Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTA

Data Type: MVA Capability Normal (Normal Rating)
Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Normal Rating for transmission Facilities including all seasons with the exception of Dynamic Limits. Unit of measurement is in MVA.
Data Format:

Dynamic limits: ICCP
Static Limits on Currently Operational Facilities: Submit using the Ratings Submission Tool
Static Limits on Future Operational Facilities: Network model exchange, written notification to ENGModelChanges@spp.org, or uploaded using the SPP Request Management System (RMS)

Periodicity:

Dynamic limits: No greater than 10 seconds
Static Limits on Currently Operational Facilities: Upon availability of updated information
Static Limits on Future Operational Facilities: Upon availability of updated information

Security Protocol:

Dynamic limits: ICCP
Static Limits on Currently Operational Facilities: Secure Electronic
Static Limits on Future Operational Facilities: Secure Electronic

Deadline:

Dynamic limits: 4/1/2017
Static Limits on Currently Operational Facilities:

At least 3 days prior to implementation of updated ratings on greater than 10 elements. No prior notification is required for 10 or less Facility Rating changes. At least 10 days prior to implementation of planned updated ratings on a monitored element of a permanent flowgate. Unplanned changes to the rating of the monitored element of a permanent flowgate can be implemented immediately by agreement between the RC and TOP.

Static Limits on Future Operational Facilities:

At least 7 calendar days prior to the updated system model data becoming effective (i.e. energizing the revised system). Changes submitted within the 7 day requirement, will be evaluated and accepted at the discretion of the SPP RC,

or

Within 20 business days, upon request of SPP.

CIP-012: RTA (dynamic)

Data Type: MVA Capability Emergency (Emergency Rating)
Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements: The highest Emergency Rating for transmission Facilities including all seasons with the exception of Dynamic Limits. Unit of measurement is in MVA. Emergency Rating with an associated time limit of less than 30 minutes shall have an Operating Guide describing the use of the Emergency Limit.
Data Format:

Dynamic limits: ICCP
Static Limits on Currently Operational Facilities: Submit using the Ratings Submission Tool
Static Limits on Future Operational Facilities: Network model exchange, written notification to ENGModelChanges@spp.org, or uploaded using the SPP Request Management System (RMS)

Periodicity:

Dynamic limits: No greater than 10 seconds
Static Limits on Currently Operational Facilities: Upon availability of updated information
Static Limits on Future Operational Facilities: Upon availability of updated information

Security Protocol:

Dynamic limits: ICCP
Static Limits on Currently Operational Facilities: Secure Electronic
Static Limits on Future Operational Facilities: Secure Electronic

Deadline:

Dynamic limits: 4/1/2017
Static Limits on Currently Operational Facilities:

At least 3 days prior to implementation of updated ratings on greater than 10 elements. No prior notification is required for 10 or less Facility Rating changes. At least 10 days prior to implementation of planned updated ratings on a monitored element of a permanent flowgate. Unplanned changes to the rating of the monitored element of a permanent flowgate can be implemented immediately by agreement between the RC and TOP.

Static Limits on Future Operational Facilities:

At least 7 calendar days prior to the updated system model data becoming effective (i.e. energizing the revised system). Changes submitted within the 7 day requirement, will be evaluated and accepted at the discretion of the SPP RC,

or

Within 20 business days, upon request of SPP.

CIP-012: RTA (dynamic)

Data Type: Transformer Tap Setting
Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Predefined, fixed positions on one or both sides of a transformer. Each Tap position represents a specific voltage value. (i.e. changing a Tap Position changes the voltage.) There is no standard numbering scheme for the tap position. Documentation defining the possible values and their meaning must be provided to SPP.
Data Format:

Telemetered or Derived Tap Positions: ICCP
Non-Telemetered No-Load Tap Information: Network Model Exchange or written notification to ENGModelChanges@spp.org

Periodicity:

Telemetered or Derived Tap Positions: No greater than 10 seconds
Non-Telemetered No-Load Tap Information: Upon availability of updated information

Security Protocol:

Telemetered or Derived Tap Positions: ICCP
Non-Telemetered No-Load Tap Information: Email

Deadline:

Telemetered or Derived Tap Positions: 4/1/2017
Non-Telemetered No-Load Tap Information:

At least 7 calendar days prior to the updated system model data becoming effective (i.e. energizing the revised system). Changes submitted within the 7 day requirement, will be evaluated and accepted at the discretion of the SPP RC,

or

Within 20 business days, upon request of SPP.

CIP-012: RTA (dynamic)

Data Type: Phase Shifting Transformer Phase Angle Setting
Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Represents the Phase Angle between the voltages on each side of the transformer (i.e. changing the Phase Angle changes the power.) The angle settings can typically vary between -90 and +90. The unit of measurement is Degrees.
Data Format: ICCP
Periodicity: No greater than 10 seconds
Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTA

Data Type: Voltage
Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Instantaneous voltage measurement for all telemetered locations on Transmission Facilities as defined above. Unit of measurement is kV. Per Unit, 100Base, 120Base, etc. voltages must be converted to simple kV readings by the originator, or if not possible, the appropriate scaling factors must be defined.
Data Format: ICCP
Periodicity: No greater than 10 seconds
Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTA

Data Type: Remedial Action Scheme Status
Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements:

Changes to Real-Time Status:
Instantaneous notification of changes to the Remedial Action Scheme status information included in the list below. An individual status point shall be provided for and updated when the Remedial Action Scheme is:

1) Armed (True/False)
2) Available (True/False)
3) Triggered (True/False)

Failure to Operate as Designed:
Where available, a real-time status indication of a 'Failure to Operate as Designed' shall be provided for Remedial Action Schemes. If a real-time status is not available, a 'Failure to Operate as Designed' shall be communicated to the SPP RC when identified by TOP operators.

Degradation:
Any type of degradation of a Remedial Action Scheme shall be communicated to the SPP RC when identified.

Documentation:
Documentation describing the purpose and application of the Remedial Action Scheme must be provided to SPP. SPP has the discretion to request additional RAS information as determined necessary.

Data Format:

Changes to Real-Time Status: ICCP
Failure to Operate as Designed: ICCP or Phone Call to SPP RC
Degradation: Phone Call to SPP RC
Documentation: Email to TBD

Periodicity:

Changes to Real-Time Status: Report by Exception

Failure to Operate as Designed: Per Event
Degradation: Per Event
Documentation: When Modified

Security Protocol:
Changes to Real-Time Status: ICCP
Failure to Operate as Designed: ICCP or Phone
Degradation: Phone
Documentation: Email

Deadline:
Initial: 1/1/2020
Updates: Upon availability of updated information

CIP-012: RTA

Data Type: Status of Significant Action Schemes
Applicability: Transmission Operator within the SPP RC Area
Description/Requirements: Status of Non-RAS devices (as identified by the SPP RC) that perform automatic post-contingency actions based on certain parameters such as under voltage or overloaded facilities. This may include, but is not limited to, certain generator run-back schemes, under-voltage facility tripping schemes.
Data Format: ICCP
Periodicity: No greater than 10 seconds
Security Protocol: ICCP
Deadline: 07/01/2022
CIP-012: RTA

Data Type: Identified Phase Angle and Equipment Limitations
Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Known operational issues stemming from a specific circumstances, such as a given transmission system configuration, where phase angle cause adverse impacts to the reliability of BES.
Data Format:
One Business Day or Prior Notifications: Email to OutageCoordination@SPP.org
Real-Time Notifications: Phone Call to Reliability Coordinator
Periodicity: Upon identification of such conditions previously unreported to SPP RC
Security Protocol:
One Business Day or Prior Notifications: Email
Real-Time Notifications: Phone
Deadline:
Initial: 4/1/2017
Updates: Upon availability of updated information

Data Type: System Frequency

Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Instantaneous readings of the actual frequency in Hz measured at multiple locations in the Transmission Operator Area. Number of frequency measurements will vary dependent upon the size of the TOP area.
Data Format: ICCP
Periodicity: No greater than 2 Seconds
Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTM

Data Type: Topology Updates
Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Notification of new Facilities or changes to existing equipment, including Transmission Lines, Transformers, Breakers, Buses, Switches, etc. or changes to existing equipment, including and the expected in-service date of that Facility or equipment. Information can be provided in the form of System One-Line Diagrams or other descriptive information.
Data Format: Email to ENGModelChanges@spp.org or uploaded using the SPP Request Management System (RMS)
Periodicity: Upon availability of updated information
Security Protocol: Email or Secure Electronic
Deadline:

Initial: 4/1/2017
Updates:
At least 21 calendar days prior to the first day of the month in which the applicable topology change is scheduled to become energized in the revised SPP transmission system and within 30 calendar days, upon request of SPP

Data Type: Model Characteristic Updates – Currently Operational Equipment
Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Characteristics of currently operational lines and transformers
Data Format: Submit using the Ratings Submission Tool
Periodicity: Upon availability of updated information
Security Protocol: Secure Electronic
Deadline:

Initial: 4/1/2017
Updates:
At least 3 days prior to implementation of updated characteristics on greater than 10 elements
At least 10 days prior to implementation of updated characteristics on a monitored element of a permanent flowgate

Data Type: Model Characteristic Updates – Future Equipment
Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Characteristics of future lines and transformers; and future and current switching devices, reactive devices, buses, and loads. Optional SCADA limits (used for display/operator alarming).
Data Format: Email to ENGModelChanges@spp.org or uploaded using the SPP Request Management System (RMS)
Periodicity: Upon availability of updated information
Security Protocol: Email or Secure Electronic
Deadline:

Initial: 4/1/2017

Updates:

At least 7 calendar days prior to the updated system model data becoming effective (i.e. energizing the revised system). Changes submitted within the 7 day requirement, will be evaluated and accepted at the discretion of the SPP RC,

or

Within 20 business days, upon request of SPP.

Data Type: Dynamic Model Characteristic Updates
Applicability: Transmission Owner within the SPP RC Area or SPP BA Area
Description/Requirements: Up-to-date dynamic model data for devices on the BES (i.e. HVDC, dynamic reactive equipment, non-standard protection relaying schemes, etc.) that is appropriate to represent with a dynamic model for transient analysis events near the POI compatible with DSA Tools TSAT software. Identification of each applicable dynamic model with appropriate values and files for all model parameters including topology from the POI (i.e. buses, units, circuits, devices, dyre parameter, etc.), test reports that support the model data based on field/commissioning tests (if available), model libraries for user defined models not included in the TSAT standard model library with comprehensive documentation/user guides containing a technical description of the model characteristics and procedures for using the model.

Note: Data may be identified from the most recently approved Model Development Advisory Group (MDAG) final dynamic models to fulfill this requirement only when it is appropriate to evaluate events near the POI and converts to a DSA Tools TSAT software standard library.

Data Format: Dynamic model data (i.e. *.dyr, *.dll, *.tudm, etc.) compatible with DSA Tools TSAT software. Email to EngModelChanges@spp.org and when applicable FTP Upload
Periodicity: Upon availability of updated information
Security Protocol: Email or Secure Electronic
Deadline:

Initial: 9/2/2022 for facilities with available model data or 6/2/2023 with a model development plan provided to SPP by 9/2/2022
Updates: Within 30 calendar days of a request made by SPP or updated information being determined, at least 30 calendar days prior to a new resource scheduled to become energized

SPP RC AND BA REQUIRED OUTAGE SCHEDULING INFORMATION

Data Type: Telemetering and Control Equipment, Monitoring and Assessment Capabilities, and Associated Communication Channels
Applicability: Reliability Coordinator, Transmission Operator, Balancing Authority, and/or Generator Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Notification of outages of all Telemetering and Control Equipment, Monitoring and Assessment Capabilities, and Associated Communication Channel. Only outages expected to exceed 30 minutes are required to receive approval from the RC prior to implementation. All other outages required to be provided to the RC as notification but approval is not required unless stated by the RC. SPP accepts the use of ICCP quality codes as a means of reporting individual RTU outages. Individual RTU outages are not expected to be reported otherwise. Entities must do their short maintenance (< 5-min) work between market intervals.
Data Format: Email Notifications: ICCPRequest@spp.org
Periodicity: Per event meeting reporting requirements
Security Protocol: Email
Deadline: 4/1/2017

Data Type: Transmission Lines and Transformer
Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Notification of expected or known risks to or removal of service time and associated expected return to service time of all Transmission Facilities. This includes hot-line work or removal of re-closing capabilities that are not intended to remove the line from service, but may expose the Facility to increased risk of contingency. Also required is an explanation of the work being done or other reason for the outage. As information is updated, the outage shall be updated as appropriate (ex. expected return to service time, reason for the outage, etc.)
Data Format: Outage Scheduler Tool
Periodicity: Per event meeting reporting requirements in SPP's Reliability Coordinator Outage Coordination Methodology
Security Protocol: Outage Scheduler Tool
Deadline:
Initial: 4/1/2017

Per SPP's Reliability Coordinator Outage Coordination Methodology

Data Type: Reactive Devices
Applicability: Transmission Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Planned outages with an expected duration of greater than 30 minutes of all Static and Dynamic Reactive Devices such as Capacitors, Inductors, Reactors, D-Var's, SVC's, etc. Also required is an explanation of the work being done or other reason for the outage. As information is updated, the outage shall be updated as appropriate (ex. expected return to service time, reason for the outage, etc).
Data Format: Outage Scheduler Tool
Periodicity: Per event meeting reporting requirements in SPP's Reliability Coordinator Outage Coordination Methodology
Security Protocol: Outage Scheduler Tool
Deadline:

Initial: 4/1/2017
Per SPP's Reliability Coordinator Outage Coordination Methodology

Data Type: Generator Automatic Voltage Regulator and Power System Stabilizers
Applicability: Generator Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Planned outages of Generator Automatic Voltage Regulation capability and Power System Stabilizers with an expected duration of greater than 30 minutes. Also required is an explanation of the work being done or other reason for the outage. As information is updated, the outage shall be updated in the Outage Scheduler Tool as appropriate (ex. Expected return to service time, reason for outage, etc.). For the purposes of Generator start-up, shutdown, and testing mode pursuant to a Real-time communication or procedure previously provided to a Transmission Operator this does not apply.
Data Format: Outage Scheduler Tool
Periodicity: Per event meeting reporting requirements in SPP's Reliability Coordinator Outage Coordination Methodology
Security Protocol: Outage Scheduler Tool
Deadline:

Initial: 4/1/2017
Per SPP's Reliability Coordinator Outage Coordination Methodology

Data Type: Generation
Applicability: Generator Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Notification of expected or known risks to or removal of service time and associated expected return to service time of all Generation units as required in the SPP Membership Agreement. As information is updated, the outage shall be updated as appropriate (ex. expected return to service time, reason for the outage, etc.). (Risks may include fuel supply issues.)
Data Format: Outage Scheduler Tool Periodicity: Per event meeting reporting requirements in SPP's Reliability Coordinator Outage Coordination Methodology
Security Protocol: Outage Scheduler Tool
Deadline:

Initial: 4/1/2017
Per SPP's Reliability Coordinator Outage Coordination Methodology

Data Type: Generator Derates
Applicability: Generator Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Notification of expected time of reduced real power production capability and associated return to service time of full real power production capability. Also, the amount of capability lost shall be provided along with an explanation (OFO, fuel supply issues, mechanical problems, outlet constraints, etc.) of the reason for the derate. As information is updated, the outage shall be updated as appropriate (ex. expected return to service time, reason for the outage, etc.).
Data Format: Outage Scheduler Tool
Periodicity: Per event meeting reporting requirements in SPP's Reliability Coordinator Outage Coordination Methodology
Security Protocol: Outage Scheduler Tool
Deadline:

Initial: 4/1/2017
Per SPP's Reliability Coordinator Outage Coordination Methodology

Data Type: Remedial Action Schemes
Applicability: Transmission Operator and/or Generator Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Planned outages with an expected duration of greater than 30 minutes of all Remedial Action Schemes. Also, planned outages that result in degradation to the Remedial Action Scheme shall be provided. As information is updated, the outage shall be updated in the Outage Scheduler Tool as appropriate (ex. expected return to service time, reason for the outage, etc.).
Data Format: Outage Scheduler Tool
Periodicity: Per event meeting reporting requirements in SPP's Reliability Coordinator Outage Coordination Methodology

Security Protocol: Outage Scheduler Tool
Deadline:
Initial: 4/1/2017
Per SPP's Reliability Coordinator Outage Coordination Methodology

Data Type: Switching Equipment
Applicability: Transmission Operator and/or Generator Operator within the SPP RC Area or SPP BA Area
Description/Requirements: Planned outages with an expected duration of greater than 30 minutes of Switching Equipment (Breakers and Switches) other than those that are in series with another reported transmission outage (ex. Breaker and switches on a single bus/single breaker configuration that are out of service in conjunction with a reported transmission line outage). Also required is an explanation of the work being done or other reason for the outage. As information is updated, the outage shall be updated in the Outage Scheduler Tool as appropriate (ex. Expected return to service time, reason for outage, etc.). Outages will only be required to be reported on Switching Equipment modeled in the Outage Scheduler Tool. Switching Equipment is included in the Outage Scheduler Tool by agreement between the SPP RC and the TOP and/or the GOP.
Data Format: Outage Scheduler Tool
Periodicity: Per event meeting reporting requirements in SPP's Reliability Coordinator Outage Coordination Methodology
Security Protocol: Outage Scheduler Tool
Deadline:
Initial: 4/1/2017
Per SPP's Reliability Coordinator Outage Coordination Methodology

SPP RC AND BA REQUIRED OTHER OPERATING INFORMATION

Data Type: SOL and IROL Limits
Applicability: Transmission Operator and/or Balancing Authority within the SPP RC Area or SPP BA Area
Description/Requirements: Notification of new or revised SOL and IROL ratings
Data Format: Written notification to EngModelChanges@spp.org at least one calendar day prior to the effective date of planned changes to SOL and/or IROL ratings. Any deviation from planned SOL or IROL ratings in real- time will be communicated by voice or telemetry.
Periodicity: Per change
Security Protocol: Email
Deadline: 4/1/2017

SPP BA REQUIRED TIE LINE METER INFORMATION

Data Type: Real-Time Dynamic Transfer Value
Applicability: Transmission Operators with a Pseudo Tie Line or Dynamic Schedule to the SPP Balancing Authority Area
Description/Requirements: This is a real-time calculation of MWs associated with pseudo-ties and dynamic schedules used in the ACE calculation.
Data Format: ICCP
Periodicity: No greater than 10 Seconds
Security Protocol: ICCP
Deadline: 07/01/2022
CIP-012: RTM

Data Type: Hourly MW-Hour Meter Values
Applicability: Transmission Operators with a Tie Line to the SPP Balancing Authority Area
Description/Requirements: Tie Line megawatt-hour (MWh) metering from a common, agreed upon primary metering source be provided as soon as the data is available after the top of each hour. The TOP shall operate such that the MWh data is telemetered to the SPP control center at the conclusion of each hour. SPP will confirm the hourly metered amounts for all Tie Line meters at a periodicity determined by SPP and the TOP. The TOP shall take timely action necessary to verify Tie Line metering equipment accuracy and/or performance of any suspect Tie Line data and take actions to restore data accuracy as quickly as possible. If SPP suspects inaccuracies or malfunction of Tie Line meters, SPP shall inform the TOP. SPP may request the TOP take actions to restore data accuracy as soon as possible but no longer than 24 hours, if possible. The TOP must notify SPP of the estimated timeframe of the restoration of the MW-Hour Meter Data if it requires more than 24 hours.
Data Format: ICCP
Periodicity: No greater than 60 minutes
Security Protocol: ICCP
Deadline: 6/17/2019
CIP-012: RTM

Data Type: Real-Time Tie Line MW Value
Applicability: Transmission Operators with a Tie Line to the SPP Balancing Authority Area
Description/Requirements: Real-time tie line MW values used by the SPP Balancing Authority in the calculation of ACE
Data Format: ICCP
Data Quality: The TOP shall take timely action necessary to verify Tie Line metering equipment accuracy and/or performance of any suspect Tie Line data and take actions to restore data accuracy as quickly as possible. If SPP suspects inaccuracies or malfunction of Tie Line meters, SPP shall inform the TOP.
Periodicity: No greater than 6 seconds
Security Protocol: ICCP
Deadline: 6/17/2019
CIP-012: RTM

Data Type: Post Operating Day Data
Applicability: Transmission Operators with a Tie Line to the SPP Balancing Authority Area
Description/Requirements: At the conclusion of the operating day, the TOP will send the hourly Tie Line MWh values to SPP, via attachment in an email, so the TOP and SPP can agree, initially, upon the amount of power that flowed over the Tie Lines for the previous operating day. SPP will be responsible for the post operating day checkout of hourly Tie Line metering values with Adjacent Balancing Authority(s) with which the interconnection exists. Any discrepancies identified during the post operating day checkout process with adjacent Balancing Authorities will be communicated to the appropriate TOP to allow time for the TOP and the adjacent Balancing Authorities to resolve any discrepancies.
The preferred mechanism for reporting the hourly Tie Line MWh values to SPP will be via an attachment to an email. The attachment should contain values for each hour of the previous operating day, by Tie Line and in both Received and Delivered directions. A sample template will be provided by SPP to the Participant.
Data Format: Email to: BAAdmin@spp.org
Periodicity: Daily
Security Protocol: Email
Deadline: 4/1/2017

Data Type: Tie Line Metering Maintenance
Applicability: Transmission Operators with a Tie Line to the SPP Balancing Authority Area
Description/Requirements: TOPs shall notify the SPP Balancing Authority whenever either their primary or secondary source for Tie Line data is scheduled to be out of service for maintenance. The TOP shall should be prepared to provide the following information, if applicable:

1. Scheduled date and time for the outage to the Tie Line data
2. Reason for maintenance or outage
3. Expected return to service date and time
4. Appropriate contact information relative to Tie Line data outage, if different than normal Tie Line metering contact information

If a Tie Line meter is taken out of service unexpectedly or is suspected of providing inaccurate data, the TOP shall notify the SPP Balancing Authority as soon as practicable after the Tie Line metering is deemed suspect or invalid, along with the following information:

1. Reason for outage, if known
2. Expected return to service date and time, if known
3. Appropriate contact information relative to meter outage, if different than normal Tie Line metering contact information

Data Format: Phone Call to Balancing Coordinator
Periodicity: Per event
Security Protocol: Phone
Deadline: 4/1/2017

Data Type: Tie Line Metering Accuracy or Validity
Applicability: Transmission Operators with a Tie Line to the SPP Balancing Authority Area
Description/Requirements: The TOP shall notify the SPP Balancing Authority whenever their source for Tie Line data is deemed to be of suspect value or quality. The TOP should be prepared to provide the following information, if applicable:

1. Tie Line information necessary for proper identification
2. Estimate of appropriate Tie Line value
3. Reason that data value or quality is suspect
4. Expected return to accepted quality level
5. Appropriate contact information relative to meter maintenance, if different than normal Tie Line metering contact information

If SPP suspects inaccuracies or malfunction of Tie Line metering, SPP shall coordinate with the TOP, as needed, to verify accuracy. The TOP shall take timely action necessary to verify accuracy and performance of Tie Line data and take actions to restore data accuracy.
Data Format: Phone Call to Balancing Coordinator
Periodicity: Each Occurrence

Security Protocol: Phone
Deadline: 4/1/2017

SPP BA REQUIRED FREQUENCY MEASUREMENT DATA FOR ACE CALCULATION

Data Type: Real Time Frequency
Applicability: The Oklahoma Gas and Electric Transmission Operator and The American Electric Power Transmission Operator through agreement with the SPP Balancing Authority
Description/Requirements: The TOP shall ensure the frequency metering data selected for inclusion in ACE is available to the SPP control center via ICCP, ensuring the source data is scanned at a minimum of six (6) seconds for inclusion in the SPP ACE calculation. The TOP will ensure the frequency meter data is available to SPP via ICCP at least every six seconds.
The TOP shall take timely action necessary to verify frequency equipment accuracy and/or performance at all times and will take actions to restore data accuracy as quickly as possible. If SPP suspects inaccuracies or malfunction of frequency data supplied by the TOP, SPP shall inform the TOP. If SPP deems the data necessary for reliable operations, SPP may request the TOP take actions to restore data accuracy within 24 hours, if possible. The TOP must notify SPP of the estimated timeframe of the restoration of the frequency measurements if it requires more than 24 hours.
Data Format: ICCP
Periodicity: No greater than 6 seconds
Security Protocol: ICCP
Deadline: 4/1/2017
CIP-012: RTM

SPP BA REQUIRED POTENTIAL CONTINGENCY REPORTING

Data Type: Potential Most Severe Single Contingency
Applicability: Transmission Operator and/or Generator Operator within the SPP BA Area
Description/Requirements:
Potential Most Severe Single Contingencies (MSSCs):

A. Loss of the MW output of a single generating unit or multiple intermittent resources using a common interconnection point
B. Loss of any single Bulk Electric System Facility resulting in the isolation or loss of output of multiple generation sources

Annual Updates:

- Provide a list of the nameplate maximum capacities of all generation sources 600 MW or greater. For intermittent resources, the total nameplate capacity at a common interconnection point or bus of 600 MW or greater shall be provided.
- Provide a list, including a description and total of all nameplate maximum capacity at risk, of all instances of events described by (B) above 600 MW or greater that exist under normal operating conditions.

Real-Time Updates:

- For events described by (B) above that are created by forced outages or other unforeseen events, immediately inform the SPP RC of potential events identified.
- For identified potential events created by maintenance or other planned activity, inform the SPP RC no fewer than 14 days in advance or upon identification of the potential event. The notification to the SPP RC shall include the total nameplate capacity at risk, a description of the system configuration creating such risk, and the anticipated duration.
- Inform the SPP RC of any status change in information provided in a previous report when such a change is identified.

Data Format:
Annual Updates: Email
Real-Time Updates: Phone Call to SPP RC
Periodicity: Annually and as needed in real-time
Security Protocol:
Annual Updates: Email
Real-Time Updates: Phone Call to SPP RC
Deadline:
Annual Updates: 30 Days after SPP Request
Real-Time Updates: Within 30 minutes of the identification of a potential MSSC

Data Type: Potential Special Multiple Contingency Event
Applicability: Transmission Operator and/or Generator Operator within the SPP BA Area
Description/Requirements:
Potential Special Multiple Contingency Events (SMCEs):

A. The loss of MW output of multiple generating units at the same plant due to the sudden interruption of a common fuel supply. Intermittent resources are excluded.
B. The loss of MW output of multiple generating units due to protection system action in response to the Fault of a single Bulk Electric System Facility

Annual Updates:

- Provide and update annually by April 1 a list of the potential SMCEs, described by (A) and (B) above, of 600 MW or greater that exist under normal operating conditions. For annual reporting of potential SMCEs, the sum of full nameplate capacity of all generating units at risk is used.

Real-Time Updates:

- Immediately inform the SPP RC of any previously unreported potential SMCEs that have been identified. Include in the notification to the SPP RC the total nameplate capacity at risk, a description of the system configuration creating such risk, and the anticipated duration.
- Inform the SPP RC of any status change in information provided in a previous report when such a change is identified.

Data Format:
Annual Updates: Email
Real-Time Updates: Phone Call to SPP RC
Periodicity: Annually and as needed in real-time
Security Protocol:
Annual Updates: Email
Real-Time Updates: Phone Call to SPP RC
Deadline:
Annual Updates: 30 Days after SPP Request
Real-Time Updates: Within 30 minutes of the identification of a potential MSSC

SPP BA REQUIRED TOP LOAD DATA FOR LOAD SHED CALCULATION

Data Type: Real Time Load
Applicability: Each TOP with load within the SPP BA Area. The TOP will ensure this value includes all SPP BA Area load under the TOP's load shed purview.
Data Format: ICCP
Periodicity: No greater than 6 seconds
Security Protocol: ICCP
Deadline: 12/31/2022
CIP-012: RTM