

Required Data Specification for the SPP Reliability Coordinator and the SPP Balancing Authority (RDS)

Revision History

Date	Description of Modification
January 1, 2017	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.
March 29, 2017	Version 2 - Incorporated approved revisions to reflect the use of the Ratings Submission Tool being required. Incorporated revisions to clarify 'Telemetry and Control System Status Requirement'.
March 9, 2018	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'

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 Reliability Coordinator and the SPP Balancing Authority

For the purposes of meeting the requirements identified in this document, all data in the possession of either the SPP Reliability Coordinator or the SPP Balancing Authority 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 ICCP data exchanged between SPP and any other entity utilizes a direct telecommunication connection.

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.

CROW Outage Scheduler

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.

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

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

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

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

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

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

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: OPS1 or FTP Upload
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

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

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

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

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 Model Change Submission Tool

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 Model Change Submission Tool

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 Model Change Submission Tool

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.

SPP RC and SPP BA Required Transmission Operator 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

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

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

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 Model Change Submission Tool

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.

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 Model Change Submission Tool

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.

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.

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

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

Data Type: Remedial Action Scheme Status

Applicability: Transmission Operator within the SPP RC Area or SPP BA Area

Description/Requirements: Instantaneous notification of changes to the status or degradation of Remedial Action Schemes. Documentation defining the possible values and their meaning must be provided to SPP.

Data Format:

Changes to Status: ICCP

Degradation: Phone Call to SPP RC

Periodicity:

Changes to Status: Report by Exception

Degradation: Per Event

Security Protocol:

Changes to Status: ICCP

Degradation: Phone

Deadline: Initial: 4/1/2017 Updates: Upon availability of updated information

Data Type: Status of Transmission System Voltage Regulating Equipment

Applicability: Transmission Operator within the SPP RC Area or SPP BA Area

Description/Requirements: Instantaneous telemetered or derived status of static var compensators, shunt and series capacitors, reactors, etc. 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

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

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 Model Change Submission Tool

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 Model Change Submission Tool

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.

SPP RC and BA Required Outage Scheduling Information

Data Type: Telemetry 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 Telemetry 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.

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: CROW Outage Scheduler

Periodicity: Per event meeting reporting requirements in SPP Operating Criteria Appendix OP-2

Security Protocol: CROW Outage Scheduler

Deadline:

Initial: 4/1/2017

Per SPP Operating Criteria Appendix OP-2

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, ect. 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, ect.)

Data Format: CROW Outage Scheduler

Periodicity: Per event meeting reporting requirements in SPP Operating Criteria Appendix OP-2

Security Protocol: CROW Outage Scheduler

Deadline:

Initial: 4/1/2017

Per SPP Operating Criteria Appendix OP-2

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 CROW 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: CROW Outage Scheduler

Periodicity: Per event meeting reporting requirements in SPP Operating Criteria Appendix OP-2

Security Protocol: CROW Outage Scheduler

Deadline:

Initial: 4/1/2017

Per SPP Operating Criteria Appendix OP-2

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: CROW Outage Scheduler

Periodicity: Per event meeting reporting requirements in SPP Operating Criteria Appendix OP-2

Security Protocol: CROW Outage Scheduler

Deadline:

Initial: 4/1/2017

Per SPP Operating Criteria Appendix OP-2

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: CROW Outage Scheduler

Periodicity: Per event meeting reporting requirements in SPP Operating Criteria Appendix OP-2

Security Protocol: CROW Outage Scheduler

Deadline:

Initial: 4/1/2017

Per SPP Operating Criteria Appendix OP-2

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 CROW as appropriate (ex. expected return to service time, reason for the outage, etc.)

Data Format: CROW Outage Scheduler

Periodicity: Per event meeting reporting requirements in SPP Operating Criteria Appendix OP-2

Security Protocol: CROW Outage Scheduler

Deadline:

Initial: 4/1/2017

Per SPP Operating Criteria Appendix OP-2

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 CROW 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 CROW Outage Scheduler. Switching Equipment is included in the CROW Outage Scheduler by agreement between the SPP RC and the TOP and/or the GOP.

Data Format: CROW Outage Scheduler

Periodicity: Per event meeting reporting requirements in SPP Operating Criteria Appendix OP-2

Security Protocol: CROW Outage Scheduler

Deadline:

Initial: 4/1/2017

Per SPP Operating Criteria Appendix OP-2

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: 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 6 seconds

Security Protocol: ICCP

Deadline: 4/1/2017

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 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