

RC0120A - RC IRO-010 Data Specification

NOTE: Changes from Peak's Attachment A are highlighted in red in columns C through G

Section	Category	Request Number	Responsible Pa	Data Item	Data Transfer Method	Data Update Frequency	Data Request Effective Date	Related NERC Standards (including but not limited to)	CAISO Guidance Document
1	Real-time Network Measurement Data	1.1	Transmission Operator	Real-time status points for all BES equipment and other non-BES equipment that impact the BES	ICCP	By exception	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
1	Real-time Network Measurement Data	1.2	Transmission Operator	Real-time MW measurements, or ampere if MW not available, for all BES equipment and other non-BES equipment that impact the BES	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
1	Real-time Network Measurement Data	1.3	Transmission Operator	Real-time MVAR measurements for all BES equipment and other non-BES equipment that impact the BES	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
1	Real-time Network Measurement Data	1.4	Transmission Operator	Voltage measurements for all busses associated with BES equipment and other busses associated with non-BES equipment that impact the BES	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
1	Real-time Network Measurement Data	1.5	Transmission Operator	Designated WECC Transfer Path data 1) Actual MW 2) Scheduled MW, Total Transfer Capability (TTC)	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
1	Real-time Network Measurement Data	1.6	Transmission Operator	LTC tap position measurements for LTCs with high side voltage > 100kV	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
1	Real-time Network Measurement Data	1.7	Transmission Operator	Phase shifter phase tap position	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
1	Real-time Network Measurement Data	1.8	Transmission Operator	MW/MVAR measurements for measured loads. These loads may be equivalent representations of your distribution system.	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
1	Real-time Network Measurement Data	1.9	Transmission Operator	RAS Arming Status for all schemes that have an impact to the BES. An armed RAS implies that it is 1) In service and 2) Ready to perform an action (trip a unit for example) if a specific condition occurs on the power system.	ICCP (preferred, if available) or phone notification to the Reliability Coordinator System Operator upon status change	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		

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1	Real-time Network Measurement Data	1.10	Transmission Operator	RAS in-service status for all schemes that have an impact to the BES	ICCP (preferred, if available) or phone notification to the Reliability Coordinator System Operator upon status change	ICCP – 10 sec / Phone Notification – As soon as practicable	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
1	Real-time Network Measurement Data	1.11	Transmission Operator	RAS associated analog arming values (e.g. Amp, MW, MVAR).	ICCP (preferred, if available) or phone notification to the Reliability Coordinator System Operator upon status change	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
1	Real-time Network Measurement Data	1.13	Transmission Operator	Dynamic equipment ratings including all facilities with ratings that vary with real-time system or ambient conditions (temp-driven Facility Ratings, Topology-driven Facility Ratings)	ICCP (if available)	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
1	Real-time Network Measurement Data	1.14	Transmission Operator	Any TOP-provided stability limitation that the RC, in collaboration with the TOP, determines to require submission in Real-time.	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.1	Balancing Authority	Instantaneous BA Area Load	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.2	Balancing Authority	BA Net Actual Interchange (as used in ACE calculation)	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.3	Balancing Authority	BA Net Scheduled Interchange (as used in ACE calculation)	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.4	Balancing Authority	BA Instantaneous ACE that is used for NERC reporting requirements	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.5	Balancing Authority	BAAL high and low limits instantaneous, or if unable then one minute average values; FUTURE: optionally if available, the BAAL violation time in minutes	ICCP	10 sec for instantaneous or 1 min	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		

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2	Real-time Balancing Authority Data	2.6	Balancing Authority	System frequency at multiple locations within the BA as requested by the RC	PMU (preferred, if available) or ICCP	PMU - 30 samples per second or if via ICCP - 10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.7	Balancing Authority	BA Scheduled frequency	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.8	Balancing Authority	BA Area (BAA) Contingency Reserve obligation (as defined in the NERC Glossary and WECC Regional Standards) or, if the BAA is part of a Reserve Sharing Group (RSG), the BAA's allocated obligation as defined by the RSG. 1) Total Required, 2) Total Actual Available, 3) Spinning Required, 4) Spinning Actual Available	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.9	Balancing Authority	BA Area Actual Generation Total	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.10	Balancing Authority	Actual Most Severe Single Contingency (MSSC) of your Balancing Authority. This value should not be a static PMax of the largest generator, rather the actual MW output. This is NOT a request for the RSG MSSC.	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.11	Balancing Authority or Generator Operator	Real-time status points (UCON status point designating unit is or is not connected to the network) for BES connected and BES impacting units 10 MW or greater, or those units with automatic voltage control or black start capability	ICCP	By exception	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.12	Balancing Authority	All BES connected and BES impacting generators with SCADA, 10 MW or greater - real-time net MW output	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.13	Balancing Authority	All BES connected and BES impacting generators with SCADA, 10 MW or greater - real-time net MVAR output	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		

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2	Real-time Balancing Authority Data	2.14	Balancing Authority	Dynamic Schedule real-time dynamic signal used in ACE calculation for each dynamic schedule. This is not the anticipated energy on the tag, rather a real-time calculation of MWs associated with the dynamic schedule	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.15	Balancing Authority	Pseudo tie real-time dynamic signal. This is a real-time calculation of MWs associated with each pseudo tie used in ACE calculation. Note: This is not an alternate method for inclusion in congestion management procedures pursuant to INT-004-3.1.	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.16	Balancing Authority	Balancing Authority total wind MW output. This is a single value - summation of all wind generation currently online. This value should represent wind generation at the BES level.	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.17	Balancing Authority	Balancing Authority total solar MW output. This is a single value - summation of all solar generation currently online. This value should represent solar generation at the BES level.	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.18	Balancing Authority	A TEC component of ACE	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.19	Balancing Authority	BA frequency bias if a dynamic bias is used	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.20	Balancing Authority	Meter error component of ACE	ICCP	10 sec	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
2	Real-time Balancing Authority Data	2.21	Balancing Authority	Actual change in status of BES generating unit Automatic Voltage Regulators (AVR), BES Power System Stabilizers (PSS) or BES alternative voltage controlling device lasting for 30 minutes or longer	ICCP (preferred, if available) or phone notification to the Reliability Coordinator System Operator	As soon as practicable	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		

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3	Forecast Data	3.2	Balancing Authority	Hourly Total Contingency Reserve Requirement forecast of BA Area (BAA) for each day up to and including the next calendar day, or, if the BAA is part of a Reserve Sharing Group (RSG), the BAA's forecast allocated obligation for each day up to and including the next calendar day as defined by the RSG. 1) Total Spinning Reserve Requirement 2) Total Contingency Reserve Requirement FUTURE: optionally if available, provide reserves at a resource level	RC-BSAP/ EIDE	Daily submission by 10 AM Pacific Prevailing Time	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	TOP-002-4	RC Base Schedule Interface Specification Web Services RC EIDE Interface Specification
3	Forecast Data	3.3	Balancing Authority	Hourly BAA load forecast. Required each day for the current day through the next four calendar days, not to exceed 7 days.	ALFS/ EIDE	Daily submission by 8:45 AM Pacific Prevailing Time	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	TOP-002-4	RC ALFS Interface Specification RC EIDE Interface Specification
3	Forecast Data	3.4	Balancing Authority	Hourly BAA load forecast. Required each hour for the next 4 hours.	ALFS/ EIDE	If changed , hourly submission received 10 min prior to the hour	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		RC ALFS Interface Specification RC EIDE Interface Specification
3	Forecast Data	3.5	Balancing Authority	Hourly Resource Commitment for all BAA generation that qualifies per the BES definition and any non-BES generation (As determined the RC) that are necessary to support the accuracy of Operational Planning Analyses and to determine SOL exceedance on BES Facilities. Required each day for the current day through the next four calendar days, not to exceed 7 days.	RC-BSAP/ EIDE	Daily submission by 10 AM Pacific Prevailing Time	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	TOP-002-4	RC Base Schedule Interface Specification Web Services RC EIDE Interface Specification

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3	Forecast Data	3.8	Balancing Authority	Hourly Resource Dispatch MW for all BAA generation that qualifies per the BES definition and any non-BES generation (as determined by the BA and RC) that is necessary to support the accuracy of Operational Planning Analyses and to determine SOL exceedance on BES Facilities. Required each hour for the next four hours.	RC-BSAP/ EIDE	If changed, hourly submission received 10 min prior to the hour	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		RC Base Schedule Interface Specification Web Services RC EIDE Interface Specification
4	Documentation and Procedures	4.1	Balancing Authority and Transmission Operator	Emergency Operations Plans	Upload to CAISO RC secure website > EOP-011 Plan submission library or email to operationscompliance@caiso.com	Anytime the plan is updated	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	EOP-011-1	
4	Documentation and Procedures	4.2	Transmission Operator	Restoration Plans	Upload to CAISO RC secure website > EOP-005 Plan submission library or email to operationscompliance@caiso.com	Annually and/or anytime the plan is updated	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	EOP-005-3	
4	Documentation and Procedures	4.3	Transmission Operator	Under voltage and under frequency load shed Plans	Upload to CAISO RC secure website > Procedure library or email procedurecontrol@caiso.com	Anytime the plan is updated	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	PRC-006-WECC-CRT-3	
4	Documentation and Procedures	4.4	Transmission Operator	Path procedures (for WECC Paths that impact SOL/IROL, neighboring RCs)	Upload to CAISO RC secure website > Procedure library or email procedurecontrol@caiso.com	Anytime the plan is updated	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
4	Documentation and Procedures	4.5	Transmission Operator	Geomagnetic Disturbance Operating Procedures	Upload to CAISO RC secure website > EOP-010 Plan submission library or email operationscompliance@caiso.com	Anytime the plan is updated	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	EOP-010-1	
4	Documentation and Procedures	4.6	Balancing Authority and Transmission Operator	Area specific Operating Plans, Procedures or Processes for mitigating SOLs, IROLs or other stability limitations	Upload to CAISO RC secure website > Procedure library or email procedurecontrol@caiso.com	Anytime the plan is updated	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
4	Documentation and Procedures	4.7	Balancing Authority and Transmission Operator	Loss of Control Center Functionality procedures, which may include protocols for evacuation, back up communications and back up control center	Upload to CAISO RC secure website > Procedure library or email procedurecontrol@caiso.com	Anytime the plan is updated	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	EOP-008-2	

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4	Documentation and Procedures	4.8	Balancing Authority and Transmission Operator	Other Plans, Procedures, Protocols or Process documents as requested by the RC, including fire/weather mitigation and/or regulatory limitations that could cause inability to follow Operating Instructions.	Upload to CAISO RC secure website > Procedure library or email procedurecontrol@caiso.com	Anytime the plan is updated	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
5	Scheduled and Unscheduled Outage Information	5.1	Balancing Authority and Transmission Operator	Forced generation and transmission outages, 30 minutes or more in duration, on Facilities/equipment identified in the In-Scope Outage Categories section of the CAISO Outage Coordination Process	Phone or GMS, and webOMS, even if submitted after the fact (via user interface or API, or COS format via API to webOMS)	As soon as practicable	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	IRO-017-1	CAISO Outage Coordination Process RC0130 Notification Requirements for Real-Time Events
5	Scheduled and Unscheduled Outage Information	5.2	Balancing Authority	Any planned individual generating unit, or based on plant configuration, derate of > 50 MW reduction of available capacity (30 minutes or more in duration) shall be submitted per the instructions of the webOMS Manual and per the Short-Range Study Window Process Outage Submission Timeline	webOMS via user interface or API, or COS format via API to webOMS	In accordance with the Short-Range Submittal Timeline specified in the CAISO Outage Coordination Process	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	IRO-017-1	CAISO Outage Coordination Process
5	Scheduled and Unscheduled Outage Information	5.3	Balancing Authority	Any generating unit, or based on plant configuration, derate of > 50 MW reduction of available capacity (other than planned derates, and 30 minutes or more in duration), shall be submitted per the instructions of the webOMS Manual	webOMS via user interface or API, or COS format via API to webOMS	As soon as practicable	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	IRO-017-1	CAISO Outage Coordination Process
5	Scheduled and Unscheduled Outage Information	5.4	Balancing Authority	Any Forced generating unit, or based on plant configuration, derate of > 50 MW reduction of available capacity (30 minutes or more in duration)	Phone or GMS, and webOMS, even if submitted after the fact (via user interface or API, or COS format via API to webOMS)	As soon as practicable	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	IRO-017-1	CAISO Outage Coordination Process RC0130 Notification Requirements for Real-Time Events
5	Scheduled and Unscheduled Outage Information	5.5	Balancing Authority	Any planned Automatic Voltage Regulator (AVR) or Power System Stabilizer (PSS) outage (30 minutes or more in duration) on a BES facility	webOMS via user interface or API, or COS format via API to webOMS	In accordance with the Short-Range Submittal Timeline specified in the CAISO Outage Coordination Process	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	IRO-017-1	CAISO Outage Coordination Process
5	Scheduled and Unscheduled Outage Information	5.6	Balancing Authority	Any Automatic Voltage Regulator (AVR) or Power System Stabilizer (PSS) outage (other than planned outages, and 30 minutes or more in duration) on a BES facility	webOMS via user interface or API, or COS format via API to webOMS	As soon as practicable	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	IRO-017-1	CAISO Outage Coordination Process
5	Scheduled and Unscheduled Outage Information	5.7	Transmission Operator	Total Transfer Capability (TTC) values for WECC Paths that impact SOL, IROLs, neighboring RCs adjusted to account for planned outages or operating conditions. See guidance in the CAISO outage coordination process documents	webOMS via user interface or API, or COS format via API to webOMS	In accordance with the Short-Range Submittal Timeline specified in the CAISO Outage Coordination Process	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	IRO-017-1	CAISO Outage Coordination Process

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5	Scheduled and Unscheduled Outage Information	5.8	Transmission Operator	Total Transfer Capability (TTC) values for WECC Paths that impact SOL, IROLs, neighboring RCs adjusted to account for unplanned outages or operating conditions. See guidance in the CAISO outage coordination process documents	webOMS via user interface or API, or COS format via API to webOMS	As soon as practicable	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	IRO-017-1	CAISO Outage Coordination Process
5	Scheduled and Unscheduled Outage Information	5.9	Transmission Operator	Notification to RCSOs of Total Transfer Capability (TTC) adjustments for WECC Paths that impact SOL/IROL, neighboring RCs due to a Forced outage	Phone or GMS, and webOMS, even if submitted after the fact (via user interface or API, or COS format via API to webOMS)	As soon as practicable	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	IRO-017-1	CAISO Outage Coordination Process RC0130 Notification Requirements for Real-Time Events
5	Scheduled and Unscheduled Outage Information	5.10	Balancing Authority and Transmission Operator	Planned outages of telemetering and control equipment with potential impacts to SE results, SOLs, IROLs, RAS visibility, or could lead to loss of visibility for an area.	webOMS via user interface or API, or COS format via API to webOMS	In accordance with the Short-Range Submittal Timeline specified in the CAISO Outage Coordination Process	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	IRO-017-1, TOP-001-4	CAISO Outage Coordination Process
5	Scheduled and Unscheduled Outage Information	5.11	Balancing Authority and Transmission Operator	Unplanned telemetering and control equipment outages of 30 minutes or more in duration, with potential impacts to SE results, SOLs, IROLs, RAS visibility, or could lead to loss of visibility for an area.	webOMS (via user interface or API, or COS format via API to webOMS); include Grid Messaging System (GMS) if impacts adjacent entities	As soon as practicable	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	IRO-017-1, TOP-001-4	CAISO Outage Coordination Process
5	Scheduled and Unscheduled Outage Information	5.13	Transmission Operator	Operational Planning Analysis for next-day operations	Upload to CAISO secure website > study library	When Operational Planning Analysis is completed	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	TOP-002-4	CAISO Operational Planning Analysis document
5	Scheduled and Unscheduled Outage Information	5.14	Transmission Operator	Operating Plan(s) for next-day operations	Upload to CAISO secure website > study library and/or to webOMS outage cards as applicable	When Operating Plans have been identified	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	TOP-002-4	CAISO Operational Planning Analysis document
5	Scheduled and Unscheduled Outage Information	5.15	Balancing Authority	Deliverability capability constraints for capacity and energy reserve requirements shall be communicated to the RC	Upload to CAISO secure website > study library	When next-day studies identify constraints	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	TOP-002-4	CAISO Operational Planning Analysis document
5	Scheduled and Unscheduled Outage Information	5.16	Transmission Operator	Any planned Transmission outages on Facilities/equipment identified in the In-Scope Outage Categories section of the CAISO Outage Coordination Process	webOMS via user interface or API, or COS format via API to webOMS	As soon as practicable	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	IRO-017-1	CAISO Outage Coordination Process
6	Power System Modeling Information	6.1	Transmission Operator	Circuit breakers, disconnects and switches: connectivity and normal status. Applicable for all equipment > 100kV and other lower kV BES equipment.	RIMS, or alternate system as designated by CAISO	30 days prior to actual network change	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		

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6	Power System Modeling Information	6.2	Transmission Operator	Transformers: connectivity, high/low side tap ranges and per-unit impedance. Applicable for all equipment > 100kV and other lower kV BES equipment.	RIMS, or alternate system as designated by CAISO	30 days prior to actual network change	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
6	Power System Modeling Information	6.3	Transmission Operator	Shunt devices: connectivity, nominal MVAR. Applicable for all equipment > 100kV and other lower kV BES equipment.	RIMS, or alternate system as designated by CAISO	30 days prior to actual network change	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
6	Power System Modeling Information	6.4	Transmission Operator	Lines: connectivity, per-unit impedance and charging susceptance. Applicable for all equipment > 100kV and other lower kV BES equipment.	RIMS, or alternate system as designated by CAISO	30 days prior to actual network change	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
6	Power System Modeling Information	6.5	Transmission Operator	Series Capacitor/Reactor: connectivity and per-unit impedance. Applicable for all equipment > 100kV and other lower kV BES equipment.	RIMS, or alternate system as designated by CAISO	30 days prior to actual network change	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
6	Power System Modeling Information	6.6	Transmission Operator	<p>HVDC Line: A one-line diagram that shows the entire configuration of the HVDC line including breakers/switches, converter transformers, DC poles, converters, DC lines (monopole or Bipolar, ground return or line return), as well as the following equipment parameters for both sides:</p> <ul style="list-style-type: none"> • Converter Transformer: <ul style="list-style-type: none"> • 2 winding or 3 winding • Nominal kV on each winding • Tap changer: lowest, highest, and nominal step number, step size, AVR status <ul style="list-style-type: none"> • R and X • DC Pole: <ul style="list-style-type: none"> • Regulation Schedule for Voltage, Current, and MW, including setpoint and deviation • Regulation type (on Voltage, MW or MVar) • Converter: <ul style="list-style-type: none"> • X0 (Constant term of valve group reactance) • X1 (First-order term of valve group reactance) <ul style="list-style-type: none"> • Amp rating • Min and max extinction angle • Min and max firing angle • Nominal kV • Bridge number • DC Line: <ul style="list-style-type: none"> • R (positive sequence series resistance) 	RIMS, or alternate system as designated by CAISO	30 days prior to actual network change	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		

Section	Category	Request Number	Responsible Pa	Data Item	Data Transfer Method	Data Update Frequency	Data Request Effective Date	Related NERC Standards (including but not limited to)	CAISO Guidance Document
6	Power System Modeling Information	6.7	Transmission Operator	Phase shifter: connectivity, per-unit impedance, phase tap range, nominal tap, impedance tables and step size in degrees. Applicable for all equipment > 100kV and other lower kV BES equipment.	RIMS, or alternate system as designated by CAISO	30 days prior to actual network change	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
6	Power System Modeling Information	6.8.1	Transmission Operator or Balancing Authority or Generator Operator	Generators: connectivity, gross and net MW maximum and reactive capability curves (if no curve available, MVAR minimum and maximum required); List of units normally on AVR- a list shall include voltage setpoint(s) with High and Low range representing voltage regulation criteria.	RIMS, or alternate system as designated by CAISO	30 days prior to actual network change	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		Supplemental Generator Information Template (SGIT)
6	Power System Modeling Information	6.9	Transmission Operator	Loads: connectivity and conforming/non-conforming status	RIMS, or alternate system as designated by CAISO	30 days prior to actual network change	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		TBD - will provide a data template
6	Power System Modeling Information	6.10	Transmission Operator	Facility Ratings	Network CIM Model or template which is uploaded to RIMS or alternate system as designated by CAISO; if between model builds then submit via outage card	30 days prior to actual network change; or if between model builds, then in accordance with CAISO Outage Coordination Process	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live	FAC-008-3 R7, R8	TBD - will provide a data template; OMS technical specifications for adjusting normal and emergency operational ratings
6	Power System Modeling Information	6.11	Transmission Operator	List of all transmission and generation ICCP object ID data available for the entity's area. Also include SCADA definition relating to each object ID.	RIMS, or alternate system as designated by CAISO	Initial provision and then in accordance with the model schedule as changes to the points list occur	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
6	Power System Modeling Information	6.12	Transmission Operator	Dated BES station single line drawings and RC requested Non-BES station single line drawings	RIMS, or alternate system as designated by CAISO	Initial provision and then whenever modeling changes occur	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
6	Power System Modeling Information	6.13	Transmission Operator	State, city, longitude and latitude for each substation with voltage levels > 100kV or with total plant generation >= 50MW	RIMS, or alternate system as designated by CAISO	One initial data set; updates to the data as new substations are built	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
6	Power System Modeling Information	6.14	Transmission Operator	Line routing for all lines 100kV and above	RIMS, or alternate system as designated by CAISO	One initial data set; updates to the data as new substations and lines are built	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		

Section	Category	Request Number	Responsible Pa	Data Item	Data Transfer Method	Data Update Frequency	Data Request Effective Date	Related NERC Standards (including but not limited to)	CAISO Guidance Document
6	Power System Modeling Information	6.15	Transmission Operator	List of shunt devices normally on AVR. These shunts are those that can automatically connect/disconnect at a specified voltage setpoint without operator intervention. The list shall include the voltage setpoint(s) and any time delays prior to automatic switching.	RIMS, or alternate system as designated by CAISO	One initial data set; updates as necessary to reflect new devices or changes to existing devices	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
6	Power System Modeling Information	6.16	Balancing Authority	List of all dynamic transfers (both pseudo ties and dynamic schedules) operated by the BA. List should include: 1) Type of transfer (dynamic schedule or pseudo tie) 2) ICCP object ID for associated actual MW value 3) Description and purpose of dynamic transfer, including source and sink and any operational limitations	RIMS, or alternate system as designated by CAISO	One initial list; updates as necessary to reflect any changes to the list	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
6	Power System Modeling Information	6.17	Transmission Operator	List of all normally open circuit breakers, disconnects and switches that control the connectivity of transmission branch elements and Facilities; list shall include unique status for all applicable seasons. The list is applicable to BES Facilities/elements and non-BES Facilities/elements that impact the BES (see Note 1), and non-BES Facilities/elements specifically requested by the RC. Examples of applicable switching devices include those associated with: * Transmission lines * Transformers * Series Compensation * Station bus switches including auxiliary buses and bus tie switches Examples of non-applicable devices include: Shunt devices	RIMS, or alternate system as designated by CAISO	One initial list; updates as necessary to reflect any changes to the list	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
6	Power System Modeling Information	6.18	Transmission Operator	RAS scheme information for all schemes or at the discretion of CAISO RC. This requires logic diagrams and documentation on the function of each RAS.	RIMS, or alternate system as designated by CAISO	60 days prior to network change or at the discretion of the RC	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
6	Power System Modeling Information	6.19	Transmission Operator or Balancing Authority or Generator Operator	Description and modeling information for all non-RAS 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 or under voltage facility tripping schemes.	RIMS, or alternate system as designated by CAISO	60 days prior to network change or at the discretion of the RC	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
6	Power System Modeling Information	6.20	Transmission Operator	Overload relay trip settings (including time-delay) on those Facilities (transformers and transmission lines) that are part of Bulk Electric System and their overload trip settings are below 125% of the highest Facility rating	RIMS, or alternate system as designated by CAISO	Upon change to relay trip settings	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		

Section	Category	Request Number	Responsible Pa	Data Item	Data Transfer Method	Data Update Frequency	Data Request Effective Date	Related NERC Standards (including but not limited to)	CAISO Guidance Document
6	Power System Modeling Information	6.21	Transmission Operator	System voltage limits and stability limitations	As applicable 1. Upload to CAISO RC secure website > Study library 2. Upload to Procedure library or email procedurecontrol@caiso.com	Consistent with SOL Methodology	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		
7	Other Operational Information	7.6	Balancing Authority and Transmission Operator	See RC Operating Procedure RC0130 Notification Requirements for Real-time Events for full list of requirements. This procedure addresses real-time transmission and balancing area events that require immediate notification to the RC operator by phone, the Grid Messaging System (GMS) and/or CAISO Outage Management System (OMS).	See RC0130	See RC0130	By 5/1/19 Shadow Operations for 7/1/19 Go-Live and by 9/1/19 Shadow Operations for 11/1/19 Go-Live		

Version History

5th Draft

Comparison to Peak Data Specification:

New req #s - 4.7 and 4.8 - split from 4.6 in order to make requirements more explicit, 5.16 - gap in Peak's data spec, 6.21 - split from 6.10 to make requirements more explicit, 7.6 - replaces current requirements with cross reference to real time notification procedure;

Retired req #s: 3.1, 3.6, 3.7, 3.9 - 3.12, 7.1 - 7.5

Updated req #s - updated data items for clarification - 1.14, 2.5, 2.11 - 2.13, all section 3 items, 4.4, 4.6, 5.1 - 5.4, 5.7 - 5.11, 6.10, 6.12, 6.17, 6.18; updated transfer methods - 1.9, 1.11, 2.6, all sections 3, 4, 5, 6; updated data frequency - 2.6, 3.3, 3.4, 3.8, 5.2, 5.5, 5.7, 5.10, 6.1, 6.2, 6.10, 6.11, 6.12

12/14/2018

Draft IRO-010 Data Specification							
Section	Category	Request Number	Data Request Effective Date	Responsible Party	Peak's Current Data Item	Data Transfer Method	Data Update Frequency
1	Real-time Network Measurement Data	1.1	January, 2009	Transmission Operator	Real-time status points for all BES equipment and other non-BES equipment that impact the BES (See Guidance document Section VII.(a))	ICCP	By exception
1	Real-time Network Measurement Data	1.2	January, 2009	Transmission Operator	Real-time MW measurements, or ampere if MW not available, for all BES equipment and other non-BES equipment that impact the BES (See Guidance document Section VII.(a))	ICCP	10 sec
1	Real-time Network Measurement Data	1.3	January, 2009	Transmission Operator	Real-time MVAR measurements for all BES equipment and other non-BES equipment that impact the BES (See Guidance document Section VII.(a))	ICCP	10 sec
1	Real-time Network Measurement Data	1.4	January, 2009	Transmission Operator	Voltage measurements for all busses associated with BES equipment and other busses associated with non-BES equipment that impact the BES (See Guidance document Section VII(a))	ICCP	10 sec
1	Real-time Network Measurement Data	1.5	April 1, 2017	Transmission Operator	Designated WECC Transfer Path data 1) Actual MW 2) Scheduled MW, Total Transfer Capability (TTC)	ICCP	10 sec
1	Real-time Network Measurement Data	1.6	January, 2009	Transmission Operator	LTC tap position measurements for LTCs with high side voltage > 100kV	ICCP	10 sec
1	Real-time Network Measurement Data	1.7	January, 2009	Transmission Operator	Phase shifter phase tap position	ICCP	10 sec
1	Real-time Network Measurement Data	1.8	January, 2009	Transmission Operator	MW/MVAR measurements for measured loads. These loads may be equivalent representations of your distribution system.	ICCP	10 sec
1	Real-time Network Measurement Data	1.9	January, 2009	Transmission Operator	RAS Arming Status for all schemes that have an impact to the BES. An armed RAS implies that it is 1) In service and 2) Ready to perform an action (trip a unit for example) if a specific condition occurs on the power system.	ICCP	10 sec
1	Real-time Network Measurement Data	1.10	March 31, 2015	Transmission Operator	RAS in-service status for all schemes that have an impact to the BES	ICCP (preferred, if available) or phone notification to the Reliability Coordinator System Operator upon status change	ICCP – 10 sec / Phone Notification – As soon as practicable
1	Real-time Network Measurement Data	1.11	March 31, 2015	Transmission Operator	RAS associated analog arming values (e.g. Amp, MW, MVAR). (See Guidance document Section VII.(a))	ICCP	10 sec
1	Real-time Network Measurement Data	1.13	January, 2009	Transmission Operator	Dynamic equipment ratings including all facilities with ratings that vary with real-time system or ambient conditions (temp-driven Facility Ratings, Topology-driven Facility Ratings)	ICCP (if available)	10 sec
1	Real-time Network Measurement Data	1.14	April 1, 2017	Transmission Operator	Any TOP-provided stability limitation that Peak, in collaboration with the TOP, determines to require submission in Real-time.	ICCP	10 sec
2	Real-time Balancing Authority Data	2.1	January, 2009	Balancing Authority	Instantaneous BA Area Load (See Guidance document Section VII.(b))	ICCP	10 sec

2	Real-time Balancing Authority Data	2.2	January, 2009	Balancing Authority	BA Net Actual Interchange (as used in ACE calculation)	ICCP	10 sec
2	Real-time Balancing Authority Data	2.3	January, 2009	Balancing Authority	BA Net Scheduled Interchange (as used in ACE calculation)	ICCP	10 sec
2	Real-time Balancing Authority Data	2.4	January, 2009	Balancing Authority	BA Instantaneous ACE that is used for NERC reporting requirements	ICCP	10 sec
2	Real-time Balancing Authority Data	2.5	August 14, 2017	Balancing Authority	BAAL high and low limits instantaneous or if unable then one minute average values	ICCP	10 sec for instantaneous or 1 min
2	Real-time Balancing Authority Data	2.6	January, 2009	Balancing Authority	System frequency at multiple locations within the BA as requested by the RC	ICCP	10 sec
2	Real-time Balancing Authority Data	2.7	January, 2009	Balancing Authority	BA Scheduled frequency	ICCP	10 sec
2	Real-time Balancing Authority Data	2.8	April 1, 2017	Balancing Authority	BA Area (BAA) Contingency Reserve obligation (as defined in the NERC Glossary and WECC Regional Standards) or, if the BAA is part of a Reserve Sharing Group (RSG), the BAA's allocated obligation as defined by the RSG. 1) Total Required, 2) Total Actual Available, 3) Spinning Required, 4) Spinning Actual Available	ICCP	10 sec
2	Real-time Balancing Authority Data	2.9	January, 2009	Balancing Authority	BA Area Actual Generation Total	ICCP	10 sec
2	Real-time Balancing Authority Data	2.10	January, 2009	Balancing Authority	Actual Most Severe Single Contingency (MSSC) of your Balancing Authority. This value should not be a static Pmax of the largest generator, rather the actual MW output. This is NOT a request for the RSG MSSC.	ICCP	10 sec
2	Real-time Balancing Authority Data	2.11	January, 2009	Balancing Authority or Generator Operator	Real-time status points (UCON status point designating unit is or is not connected to the network) for units 10 MW or greater, or those units with automatic voltage control or black start capability	ICCP	By exception
2	Real-time Balancing Authority Data	2.12	January, 2009	Balancing Authority	All generators - real-time net MW output	ICCP	10 sec
2	Real-time Balancing Authority Data	2.13	January, 2009	Balancing Authority	All generators - real-time net MVAR output	ICCP	10 sec
2	Real-time Balancing Authority Data	2.14	June 1, 2015	Balancing Authority	Dynamic Schedule real-time dynamic signal used in ACE calculation for each dynamic schedule. This is not the anticipated energy on the tag, rather a real-time calculation of MWs associated with the dynamic schedule	ICCP	10 sec
2	Real-time Balancing Authority Data	2.15	June 1, 2015	Balancing Authority	Pseudo tie real-time dynamic signal. This is a real-time calculation of MWs associated with each pseudo tie used in ACE calculation. Note: This is not an alternate method for inclusion in congestion management procedures pursuant to INT-004-3.1.	ICCP	10 sec
2	Real-time Balancing Authority Data	2.16	September, 2010	Balancing Authority	Balancing Authority total wind MW output. This is a single value summation of all wind generation currently online. This value should represent wind generation at the BES level.	ICCP	10 sec

2	Real-time Balancing Authority Data	2.17	March 31, 2015	Balancing Authority	Balancing Authority total solar MW output. This is a single value summation of all solar generation currently online. This value should represent solar generation at the BES level.	ICCP	10 sec
2	Real-time Balancing Authority Data	2.18	March 31, 2015	Balancing Authority	ATEC component of ACE	ICCP	10 sec
2	Real-time Balancing Authority Data	2.19	March 31, 2015	Balancing Authority	BA frequency bias if a dynamic bias is used	ICCP	10 sec
2	Real-time Balancing Authority Data	2.20	March 31, 2015	Balancing Authority	Meter error component of ACE	ICCP	10 sec
2	Real-time Balancing Authority Data	2.21	August 14, 2017	Balancing Authority	Actual change in status of BES generating unit Automatic Voltage Regulators (AVR), BES Power System Stabilizers (PSS) or BES alternative voltage controlling device lasting for 30 minutes or longer	ICCP (Preferred if available) or phone notification to the Reliability Coordinator System Operator	As soon as practicable
3	Forecast Data	3.1	January, 2009	Balancing Authority	Hourly BA Net Scheduled Interchange forecast through the end of the next business day	EIDE / Secure FTP	Daily submission by 10AM Pacific Prevailing Time
3	Forecast Data	3.2	August 14, 2017	Balancing Authority	Hourly Total Contingency Reserve Requirement forecast of BA Area (BAA) for each day up to and including the next business day, or, if the BAA is part of a Reserve Sharing Group (RSG), the BAA's forecast allocated obligation for each day up to and including the next business day as defined by the RSG. 1) Total Spinning Reserve Requirement 2) Total Contingency Reserve Requirement	EIDE / Secure FTP	Daily submission by 10AM Pacific Prevailing Time
3	Forecast Data	3.3	March 31, 2015	Balancing Authority	Hourly BAA load forecast. Required each day for the current day through the next four business days. (See Guidance document Section VII.(c))	EIDE / Secure FTP	Daily submission by 10AM Pacific Prevailing Time
3	Forecast Data	3.4	April 1, 2016	Balancing Authority	Hourly BAA load forecast. Required each hour for the next 4 hours. (See Guidance document Section VII.(c))	EIDE / Secure FTP	Hourly submission received 10 min prior to the hour
3	Forecast Data	3.5	April 1, 2016	Balancing Authority	Hourly Unit Commitment for all BAA generation that qualifies per the BES definition and any non-BES generation (As determined by Peak) that are necessary to support the accuracy of Operational Planning Analyses and to determine SOL exceedance on BES Facilities. Required each day for the current day through the next four business days.	EIDE / Secure FTP	Daily submission by 10AM Pacific Prevailing Time

3	Forecast Data	3.6	April 1, 2016	Balancing Authority	Hourly Unit Commitment for all BAA generation that qualifies per the BES definition and any non-BES generation (As determined by Peak) that are necessary to support the accuracy of Operational Planning Analyses and to determine SOL exceedance on BES Facilities. Required each hour for the next four hours. (See Guidance document Section VII.(c))	EIDE / Secure FTP	Hourly submission received 10 min prior to the hour
3	Forecast Data	3.7	April 1, 2016	Balancing Authority	Hourly Unit Dispatch MW for all BAA generation that qualifies per the BES definition and any non-BES generation (as determined by Peak) that is necessary to support the accuracy of Operational Planning Analyses and to determine SOL exceedance on BES Facilities. Required each day for the current day through the next one business day. (See Guidance document Section VII.(c))	EIDE / Secure FTP	Daily submission by 10AM Pacific Prevailing Time
3	Forecast Data	3.8	April 1, 2016	Balancing Authority	Hourly Unit Dispatch MW for all BAA generation that qualifies per the BES definition and any non-BES generation (as determined by Peak) that is necessary to support the accuracy of Operational Planning Analyses and to determine SOL exceedance on BES Facilities. Required each hour for the next four hours. (See Guidance document Section VII.(c))	EIDE / Secure FTP	Hourly submission received 10 min prior to the hour
3	Forecast Data	3.9	April 1, 2016	Balancing Authority	Hourly Operational Maximum MW for all BAA generation that qualifies per the BES definition and any non-BES generation (as determined by Peak) that are necessary to support the accuracy of Operational Planning Analyses and to determine SOL exceedance on BES Facilities. Required each day for the current day through the next four business days. (See Guidance document Section VII.(c))	EIDE / Secure FTP	Daily submission by 10AM Pacific Prevailing Time
3	Forecast Data	3.10	April 1, 2016	Balancing Authority	Hourly Operational Maximum MW for all BAA generation that qualifies per the BES definition and any non-BES generation (as determined by Peak) that are necessary to support the accuracy of Operational Planning Analyses and to determine SOL exceedance on BES Facilities. Required each hour for the next four hours.(See Guidance document Section VII.(c))	EIDE / Secure FTP	Hourly submission received 10 min prior to the hour
3	Forecast Data	3.11	April 1, 2016	Balancing Authority	Hourly Operational Minimum MW for all BAA generation that qualifies per the BES definition and any non-BES generation (as determined by Peak) that are necessary to support the accuracy of Operational Planning Analyses and to determine SOL exceedance on BES Facilities. Required each day for the current day through the next four business days. (See Guidance document Section VII.(c))	EIDE / Secure FTP	Daily submission by 10AM Pacific Prevailing Time
3	Forecast Data	3.12	April 1, 2016	Balancing Authority	Hourly Operational Minimum MW for all BAA generation that qualifies per the BES definition and any non-BES generation (as determined by Peak) that are necessary to support the accuracy of Operational Planning Analyses and to determine SOL exceedance on BES Facilities. Required each hour for the next four hours. (See Guidance document Section VII.(c))	EIDE / Secure FTP	Hourly submission received 10 min prior to the hour

4	Documentation and Procedures	4.1	April 1, 2017	Balancing Authority and Transmission Operator	Emergency Operations Plans	Upload to peakrc.org > Operations > EOP-011 or email	Anytime the plan is updated
4	Documentation and Procedures	4.2	July, 2011	Transmission Operator	Restoration Plans	Upload to peakrc.org > Operations > TOPRestPlanS submit or email	Annually and/or anytime the plan is updated
4	Documentation and Procedures	4.3	July, 2011	Transmission Operator	Under voltage and under frequency load shed Plans	Upload to peakrc.org > Operations > Operating Procedures or email	Anytime the plan is updated
4	Documentation and Procedures	4.4	July, 2011	Transmission Operator	Path procedures	Upload to peakrc.org > Operations > Operating Procedures or email	Anytime the plan is updated
4	Documentation and Procedures	4.5	March 1, 2015	Transmission Operator	Geomagnetic Disturbance Operating Procedures	Upload to peakrc.org > Operations > TOPGMDProcedures or email	Anytime the plan is updated
4	Documentation and Procedures	4.6	March 31, 2015	Balancing Authority and Transmission Operator	Other procedures as appropriate or as requested by the RC, including documented mitigation plans, fire/weather protocols, regulator protocols that could cause inability to follow Operating Instructions, technical information concerning protective relays and voltage schedules.	Upload to peakrc.org > Operations > Operating Procedures or email	Anytime the plan is updated
5	Scheduled and Unscheduled Outage Information	5.1	April 1, 2017	Balancing Authority and Transmission Operator	Forced Automatic and Forced Emergency generation and Transmission outages on Facilities/equipment identified in the In-Scope Outage Categories section of the Peak Reliability Outage Coordination Process	Phone notification to the Reliability Coordinator System Operator (RSCO) or RMT message	As soon as practicable
5	Scheduled and Unscheduled Outage Information	5.2	April 1, 2017	Balancing Authority	Any planned individual generating unit derate of > 50 MW reduction of available capacity (30 minutes or more in duration) shall be submitted to COS per the instructions of the COS Manual and per the Short-Range Study Window Process Outage Submission Timeline	COS	In accordance with the Short-Range Submittal Timeline specified in the Peak Reliability Outage Coordination Process

5	Scheduled and Unscheduled Outage Information	5.3	April 1, 2017	Balancing Authority	Any generating unit derate of > 50 MW reduction of available capacity (other than planned derates, and 30 minutes or more in duration), shall be submitted to COS per the instructions of the COS manual	COS	As soon as practicable
5	Scheduled and Unscheduled Outage Information	5.4	April 1, 2017	Balancing Authority	Any Forced Automatic or Forced Emergency generating unit derate of > 50 MW reduction of available capacity (30 minutes or more in duration)	Phone notification to the Reliability Coordinator System Operator (RSCO) or RMT message	As soon as practicable
5	Scheduled and Unscheduled Outage Information	5.5	April 1, 2017	Balancing Authority	Any planned Automatic Voltage Regulator (AVR) or Power System Stabilizer (PSS) outage (30 minutes or more in duration) on a BES facility	COS	In accordance with the Short-Range Submittal Timeline specified in the Peak Reliability Outage Coordination Process
5	Scheduled and Unscheduled Outage Information	5.6	April 1, 2017	Balancing Authority	Any Automatic Voltage Regulator (AVR) or Power System Stabilizer (PSS) outage (other than planned outages, and 30 minutes or more in duration) on a BES facility	COS	As soon as practicable
5	Scheduled and Unscheduled Outage Information	5.7	August 14, 2017	Transmission Operator	Total Transfer Capability (TTC) values for each WECC Path, adjusted to account for planned outages or operating conditions (See Guidance document Section VII.(e))	COS	In accordance with the Short-Range Submittal Timeline specified in the Peak Reliability Outage Coordination Process
5	Scheduled and Unscheduled Outage Information	5.8	August 14, 2017	Transmission Operator	Total Transfer Capability (TTC) values for each WECC Path, adjusted to account for unplanned outages or operating conditions(See Guidance document Section VII.(e)) Note: Adjustments to TTC due to Forced Emergency and Forced Automatic conditions are also required to be submitted via phone/RMT Message per 5.9 below.	COS	As soon as practicable
5	Scheduled and Unscheduled Outage Information	5.9	August 14, 2017	Transmission Operator	Notification to RSCOs of Total Transfer Capability (TTC) adjustments for WECC Paths due to a Forced Automatic or Forced Emergency outage Note: Also requires separate COS entry per 5.8 above.	Phone notification to the Reliability Coordinator System Operator (RSCO) or RMT message	As soon as practicable

5	Scheduled and Unscheduled Outage Information	5.10	August 14, 2017	Balancing Authority and Transmission Operator	Planned outages of telemetering and control equipment	COS	As soon as practicable
5	Scheduled and Unscheduled Outage Information	5.11	August 14, 2017	Balancing Authority and Transmission Operator	Unplanned telemetering and control equipment outages of 30 minutes or more in duration	ICCP or RMT message	As soon as practicable
5	Scheduled and Unscheduled Outage Information	5.13	April 1, 2017	Transmission Operator	Operational Planning Analysis for next-day operations.	Upload to peakrc.org > Operations > Entity Studies	When Operational Planning Analysis is completed
5	Scheduled and Unscheduled Outage Information	5.14	April 1, 2017	Transmission Operator	Operating Plan(s) for next-day operations	Upload to peakrc.org > Operations > Entity Studies or COS as applicable	When Operating Plans have been identified
5	Scheduled and Unscheduled Outage Information	5.15	October 1, 2017	Balancing Authority	Deliverability capability constraints for capacity and energy reserve requirements shall be communicated to the RC	Upload to peakrc.org > Operations > Entity Studies □	When next-day studies identify constraints
5	Scheduled and Unscheduled Outage Information	5.16					
5	Scheduled and Unscheduled Outage Information	5.17					
5	Scheduled and Unscheduled Outage Information	5.18					
6	Power System Modeling Information	6.1	January, 2009	Transmission Operator	Circuit breakers, disconnects and switches: connectivity and normal status. Applicable for all equipment > 100kV and other lower kV BES equipment.	Secure FTP or email	30 days prior to actual network change
6	Power System Modeling Information	6.2	January, 2009	Transmission Operator	Transformers: connectivity, high/low side tap ranges and per-unit impedance. Applicable for all equipment > 100kV and other lower kV BES equipment.	Secure FTP or email	30 days prior to actual network change
6	Power System Modeling Information	6.3	January, 2009	Transmission Operator	Shunt devices: connectivity, nominal MVAR. Applicable for all equipment > 100kV and other lower kV BES equipment.	Secure FTP or email	30 days prior to actual network change
6	Power System Modeling Information	6.4	January, 2009	Transmission Operator	Lines: connectivity, per-unit impedance and charging susceptance. Applicable for all equipment > 100kV and other lower kV BES equipment.	Secure FTP or email	30 days prior to actual network change
6	Power System Modeling Information	6.5	January, 2009	Transmission Operator	Series Capacitor/Reactor: connectivity and per-unit impedance. Applicable for all equipment > 100kV and other lower kV BES equipment.	Secure FTP or email	30 days prior to actual network change

6	Power System Modeling Information	6.6	January 15, 2016	Transmission Operator	<p>HVDC Line: A one-line diagram that shows the entire configuration of the HVDC line including breakers/switches, converter transformers, DC poles, converters, DC lines (monopole or Bipolar, ground return or line return), as well as the following equipment parameters for both sides:</p> <p>Converter Transformer:</p> <ul style="list-style-type: none"> • 2 winding or 3 winding • Nominal kV on each winding <p>• Tap changer: lowest, highest, and nominal step number, step size, AVR status</p> <ul style="list-style-type: none"> • R and X <p>DC Pole:</p> <ul style="list-style-type: none"> • Regulation Schedule for Voltage, Current, and MW, including setpoint and deviation • Regulation type (on Voltage, MW or MVar) <p>Converter:</p> <ul style="list-style-type: none"> • X0 (Constant term of valve group reactance) • X1 (First-order term of valve group reactance) <ul style="list-style-type: none"> • Amp rating • Min and max extinction angle • Min and max firing angle • Nominal kV • Bridge number <p>DC Line:</p> <ul style="list-style-type: none"> • R (positive sequence series resistance) 	Secure FTP or email	30 days prior to actual network change
6	Power System Modeling Information	6.7	January, 2009	Transmission Operator	Phase shifter: connectivity, per-unit impedance, phase tap range, nominal tap, impedance tables and step size in degrees. Applicable for all equipment > 100kV and other lower kV BES equipment.	Secure FTP or email	30 days prior to actual network change
6	Power System Modeling Information	6.8.1	October 1, 2017	Transmission Operator	Generators: connectivity, gross and net MW maximum and reactive capability curves (if no curve available, MVAR minimum and maximum required); List of units normally on AVR- a list shall include voltage setpoint(s) with High and Low range representing voltage regulation criteria.	Secure FTP or email	Initial Submission, then for changes 30 days prior to actual network change
6	Power System Modeling Information	6.9	January, 2009	Transmission Operator	Loads: connectivity and conforming/non-conforming status	Secure FTP or email	30 days prior to actual network change
6	Power System Modeling Information	6.10	August 14, 2017	Transmission Operator	Facility Ratings, system voltage limits and stability limitations	In accordance with the Peak Reliability SOL Methodology and per the RC Instructions on Peakrc.com Email	In accordance with the Peak Reliability SOL Methodology and per the RC Instructions on Peakrc.com

6	Power System Modeling Information	6.11	January, 2009	Transmission Operator	Spreadsheet of all transmission and generation ICCP object ID data available for the entities Area. Also include SCADA definition relating to each object ID.	Secure FTP or email	Periodic update of ICCP points available (monthly updates when the point list has changed)
6	Power System Modeling Information	6.12	April 1, 2017	Transmission Operator	Dated BES station single line drawings and Peak requested Non-BES station single line drawings	Hard copy shipping or electronic transfer (Secure FTP or email)	Initial provision and then whenever changes occur
6	Power System Modeling Information	6.13	November 1, 2011	Transmission Operator	State, city, longitude and latitude for each substation with voltage levels > 100kV or with total plant generation >= 50MW	Secure FTP or email	One initial data set; updates to the data as new substations are built
6	Power System Modeling Information	6.14	November 1, 2011	Transmission Operator	Line routing for all lines 100kV and above	Secure FTP or email	One initial data set; updates to the data as new substations and lines are built
6	Power System Modeling Information	6.15	March 31, 2015	Transmission Operator	List of shunt devices normally on AVR. These shunts are those that can automatically connect/disconnect at a specified voltage setpoint without operator intervention. The list shall include the voltage setpoint(s) and any time delays prior to automatic switching.		One initial data set; updates as necessary to reflect new devices or changes to existing devices
6	Power System Modeling Information	6.16	June 1, 2015	Balancing Authority	List of all dynamic transfers (both pseudo ties and dynamic schedules) operated by the BA. List should include: 1) Type of transfer (dynamic schedule or pseudo tie) 2) ICCP object ID for associated actual MW value 3) Description and purpose of dynamic transfer, including source and sink and any operational limitations	Secure FTP or email	One initial list; updates as necessary to reflect any changes to the list
6	Power System Modeling Information	6.17	March 31, 2015	Transmission Operator	List of all normally open circuit breakers, disconnects and switches that control the connectivity of transmission branch elements and Facilities; list shall include unique status for all applicable seasons. The list is applicable to BES Facilities/elements and non-BES Facilities/elements that impact the BES (see Note 1), and non-BES Facilities/elements specifically requested by Peak. Examples of applicable switching devices include those associated with: * Transmission lines * Transformers * Series Compensation * Station bus switches including auxiliary buses and bus tie switches Examples of non-applicable devices include: Shunt devices	Secure FTP or email	One initial list; updates as necessary to reflect any changes to the list

6	Power System Modeling Information	6.18	August 14, 2017	Transmission Operator	RAS scheme information for all schemes or at the discretion of Peak. This requires logic diagrams and documentation on the function of each RAS.	Updated documents, Secure FTP or email	60 days prior to or at the discretion of the RC
6	Power System Modeling Information	6.19	August 14, 2017	Transmission Operator	Description and modeling information for all non-RAS 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 or under voltage facility tripping schemes.	Updated documents, Secure FTP or email	60 days prior to document effective date
6	Power System Modeling Information	6.20	March 31, 2015	Transmission Operator	Overload relay trip settings (including time-delay) on those Facilities (transformers and transmission lines) that are part of Bulk Electric System and their overload trip settings are below 125% of the highest Facility rating	Updated documents, Secure FTP or email	Upon change to relay trip settings
7	Other Operational Information	7.1	April 1, 2017	Transmission Operator	SOL exceedance(s), consistent with the definition in the Peak Reliability SOL Methodology, on any Bulk Electric System (BES) element or on elements that impact the BES and the actions taken to eliminate the SOL exceedance(s)	Phone notification to the Reliability Coordinator System Operator	As soon as practicable
7	Other Operational Information	7.2	April 1, 2017	Transmission Operator	Inability to perform a Real-time Assessment (RTA) within 30 minutes of the last RTA	Phone notification to the Reliability Coordinator System Operator or RMT message	As soon as practicable
7	Other Operational Information	7.3	March 31, 2015	Balancing Authority	Inability to calculate ACE for 30 minutes or more	Phone notification to the Reliability Coordinator System Operator	As soon as practicable
7	Other Operational Information	7.4	April 1, 2017	Transmission Operator	Actual or expected operations that result in, or could result in, an Emergency or BES Emergency (as defined in the NERC glossary)	Phone notification to the Reliability Coordinator System Operator	As soon as practicable
7	Other Operational Information	7.5	March 31, 2015	Transmission Operator	Status of Non-RAS devices 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 and current Protection System status when functionality is affected . This is not a request for under-voltage or under-frequency load shedding information.	ICCP (preferred, if available), phone notification to the Reliability Coordinator System Operator or RMT message upon status change.	ICCP – 10 sec / Phone notification or RMT message – As soon as practicable