Business Requirements Specification

DRS Replacement

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1. Introduction

1.1 Purpose

The purpose of this document is to capture and record a description of what the Users and Business Stakeholders of the project wish to obtain by providing high-level business requirements. This document establishes the basis for the agreement between the initiators and implementers of the project. The information in this document serves as input to determining the scope of Information Systems projects and to all Business Process Modeling and System Requirements Specifications efforts.

These requirements will serve as the initial set of business unit requirements for the appropriate software application/systems development effort. It is understood that additional requirements and systems analysis may produce "To Be" Business Process Models, System Requirements Specifications, and Use Cases to serve as the set of requirements documents used by the development teams to buy, modify, or build the necessary software and hardware systems. The Business Unit(s) involved in the project will have an opportunity to review and approve all requirements documentation produced.

2. Intellectual Property Ownership

2.1 Guidelines

Intellectual property ownership must be considered by all applicable stakeholders before the services are performed. The level of analysis is two-fold. One, the business owner must determine if the intellectual property necessary to perform the services is owned by the California ISO or whether it must be obtained from a third party. Once it has been determined that the California ISO has secured the proper intellectual property rights to perform the services (i.e., the intellectual property is owned by the California ISO or we have licensed it from a third party), then the second step in the analysis is to consider whether new intellectual property will be created as a result of the business requirements or service requirements to be performed and how that intellectual property will be owned and protected by the California ISO. In order to assist the business owner in the analysis previously described, please refer to the California Intellectual Property Policy available at http://home.caiso.ecn/scripts/dmcurrent.cgi?id=09003a60803f12fc, which provides a brief tutorial on what Intellectual Property is and how the California ISO can go about protecting its intellectual property. Please contact the Legal Department if you have any questions regarding intellectual property.

2.2 Checklist

Once intellectual property ownership is determined, please use this checklist in completing the business requirements.

3. Details of Business Need/Problem

3.1 Previous Phases

Location Registration (Phase 1)

The Enabling Demand Response project's API (Phase 1) functionality went live in April 2015. The APIs allow for a more streamlined and automated Proxy Demand Response (PDR) and Reliability Demand Response Resources (RDRR) location registration process. This functionality should have alleviated a major technical hurdle, allowing for fuller demand response participation in CAISO's markets and reliability functions.

Registration Enhancements Project (Phase 2):

The Enabling Demand Response Registration Enhancements (Phase 2) aims to transfer the PDR/RDRR registration model and functionality from the Demand Response System (DRS) into the California ISO's Demand Response Registration System (DRRS). The registration model and process will be streamlined based on input from a customer outreach. PDR and RDRR resource rules and associated functionality will be implemented in the DRRS. The DR entity model (including entities such as locations, registrations,resources data) will be updated for a more efficient and automated process flow while accelerating timelines as requested by stakeholders. The entity model update includes the removal of the aggregate location (ALOC) concept. This future phase will rely on entity modeling addressed in Phase 2.

3.2 Current Project – DRS Replacement Project (Phase 3)

The Enabling Demand Response DRS Replacement (Phase 3) project will transfer remaining Demand Response System (DRS) functionality to other ISO systems so that the DRS may be retired. The consolidation moves meter data management and settlement functionality, inclusive of baseline calculations and performance measurement, to appropriate ISO system supporting duplicative or with ability to absorb remaining DRS functionalities supporting Proxy Demand Response (PDR), Reliability Demand Response Resource (RDRR) and any future DR resource wholesale market participation. These functionalities are being contemplated to be absorbed as part of current enhancement projects for metering (*Post Market Consolidation - OMAR Replacement)* and settlements upgrade project.

Project Goals:

1. **Decommission the Demand Response System** by replacing its meter data management, baseline and performance calculations functionalities in other ISO systems.
2. **Implement PDR/RDRR meter data management** (meter data submittal and processing) in the appropriate meter data management system,
3. **Implement PDR/RDRR baseline calculations** as settlement functions.

4. **Implement PDR/RDRR performance calculations** as settlement functions.
5. **Provide robust user interfaces and APIs for enhancing current participant view, submit, or retrieve cabilities for DR participation meter data management, baseline calculation and performance measurement processing.**

4. Business Process Impacts

4.1 High Level Business Process

4.1.1 Description

Resource Event Management (*used for baseline calculation*)

1. Determination of resource (PDR/RDRR) events start and end time including:
    a. DA and RT energy events
    b. DA and RT A/S capacity award events (non-spinning and spinning)
    c. DA and RT A/S energy events (non-spinning and spinning)
2. Event revisions due to MQS updates and/or deletions

Resource Outage Management (*used for baseline calculation*)

3. Determination of outage events start and end from OMS including:
    a. Allow registration level outages
4. Outage revisions due to OMS updates

Resource Meter Data Management

1. Meter data management (upload/download) via robust APIs in addition to a robust user interface
    a. Time-stamped and versioned
2. Support meter data submission at various intervals
    a. Hourly
    b. 15 minute
    c. 5 minute
3. Support meter data submission as load or generation based on registration baseline measurement type
4. Provide role-based robust APIs in addition to a robust user interface to:
    a. View and Download Meter Data
    b. View, Upload, and Download Meter Data
5. Allow for meter data submittal at registration level
    a. Providing baseline calculation capability at registration level
6. Allow for a one-to-many mapping between resources and registrations (initial implementation will maintain one-to-one mapping, however, this capability has been considered in this BRS for future implementation)
    a. Providing capability to calculate a resource performance measurement based on multiple performance measurements provided at registration level
7. Enforce late meter data provisions applicable to current SCME meter data submissions

Resource Baseline Calculation and Performance Measurement Management

1. Allow for baseline to be calculated and performance measured by registration or by resource
    a. allowing cumulative registration baseline submittal at resource level adds considerable implementation complexity.
2. Provide robust APIs in addition to a robust user interface to download baseline and performance measurement

a. By registration
    i. By LSE or LSE SC
    ii. By DRP SC
b. By resource
    i. By DRP or DRP SC

4.2 Assumptions & Constraints

1	Baseline Type 2 (statistical sampling): -ISO has an approved Baseline Type 2 statistical sampling methodology(ies) that can be used by all DR participants without additional ISO approval. -ISO approved statistical sampling methology are documented in detail so that SCs for SCMEs can submit SQMD using approved methodology for PDR/RDRR participants -ISO will accept SQMD that follows approved statistical sampling methodology(ies) -ISO has authority to audit SQMD to ensure that approved baseline type 2 methodology for statistical sampling is being followed. -ISO will be alerted to the use of statistical sampling in SQMD file submission (not at registration)
2	**Assumption**: The ISO may approve and obtain tariff authority to allow for variations on the Type 1 baseline method. **Additional Information and further assumptions**: While the systems are being prepared to perform a newly approved "*custom baseline calculation*", the ISO will allow the DRP/ SC DRP to compute the "*custom baseline calculation*" and submit a performance measurement using the Hourly Gen baseline method functionality.
3	This BRS assumes that the default load adjustment will be enforced. This BRS assumes that the system will allow for a one-to-one relationship between an LSE and a resource due to settlement constraints around Default Load Adjustments. This constraint shall be in place until such time that the Default Load Adjustment is deprecated.

5. Business Requirements

The sections below describe the Business Processes and the associated Business Requirements involved in the project. These may represent high level functional, non-functional, reporting and/or infrastructure requirements. These business requirements directly relate to the high level scope items determined for the project.

5.1 Business Process: Resource Meter Data Management

5.1.1 System Data Consumption

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ100	The metering system shall collect all information specific to a registration from DRRS, such as, resource ID, registration ID, LSE name, baseline method, effective start date, effective end date, etc.	Core	MDMS, DRRS
DRSR-BRQ102	The metering system shall collect resource information from MF. Examples include resource ID, DRP SC, participation effective dating, market participation flags.	Core	MDMS, MF

5.1.2 Meter Data Management – General Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ104	The meter data system shall observe and enforce registration and resource effective dating for meter data submission.	Core	Meter Data Management System (MDMS)
DRSR-BRQ106	The meter data system shall allow for meter data types (Gen or Load) based on the resource registered baseline method.	Core	MDMS

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ108	The meter data system shall collect meter data at the interval level based on the resource participation (5-minute for RTD/FMM or Ancillary Services, 15-minute for parsing into 5-minute data for RTD/FMM and Ancillary Services, or hourly for Day-Ahead). **Note**: Partial submissions are not supported for registartions that use 10-in-10 baseline method. The DRP SC shall submit full hours (Day-Ahead) / 15 minute (FMM) / 5 minute periods (RTD)	Core	MDMS
DRSR-BRQ110	When a given resource's registrations are terminated and a new registration is created for the same location(s), the meter data for baseline calculation and performance measurement must be resubmitted. **Note**: The system will extend meter data from terminated registrations to new registrations.	Core	MDMS
DRSR-BRQ114	User roles shall be applied based on the Table 1 below.	Core	MDMS
DRSR-BRQ116	**UDC and LSE Data Access:** The UDC and LSE shall have visibility into the DR meter data and settlements information as they do in the current DRS implementation including the following: • The registration-level details regarding submitted meter data. • The registration-level results from the baseline calculations. • The registration-level results of the performance calculations. • Data viewable by that LSE shall be specific to that LSE. • Data viewable by that UDC shall be specific to that UDC. **Note**: this is unrelated to settlement statement output.	Core	MDMS
DRSR-BRQ118	For all Baseline Methods, per ISO meter data standards, the system shall allow a DRP's SC to submit both the estimated and actual SQMD.	Core	MDMS

Table 1: Meter Data Management, Baseline & Performance Roles

Role	Submit Meter Data	Retrieve Meter Data	Retrieve Baseline Calc Results	Retrieve Performance Measurement	Retrieve Default Load Adjustment	Event Management (Expected Energy info in CMRI)
DRP SC	YES	YES	YES	YES	YES	YES
DRP		YES	YES	YES	YES	
LSE SC		YES	YES	YES	YES	YES
ISO	YES	YES	YES	YES	YES	YES

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ122	For Demand Response resources, the meter data system shall allow for the view, upload and download of SQMD by the DRP SC of meter data via a user interface.	Core	MDMS

DRSR-BRQ124	The user interface and/or API shall provide the following meter data submission messaging:
	• Meter Data submittal summary
	  ○ Meter data submittal timestamp
	  ○ Meter data submittal period (start and end times)
	  ○ Number of records uploaded
	• Success or failure message including any errors
		Core	MDMS

DRSR-BRQ126	The meter data system shall provide robust APIs to view, upload or download SQMD by DRP SC or LSE SC as per Table 1.	Core	MDMS

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ128	The meter data system shall allow for historic DR meter data submission (a lookback). The historic time horizon limit shall be configurable based on the selected baseline method and registration effective dating. The meter data submission effective date management shall honor this look-back time horizon. **Example**: Registration A Start = 1/1/2015, End = 12/31/2015., baseline method = 10 in 10, configured lookback time horizon = 45 days (ISO global configurable parameter per baseline method, in this case 10 in 10). Meter data submission effective start date = 11/16/2014. Effective End Date = 12/31/2015.	Core	MDMS
DRSR-BRQ132	The metering system shall enforce meter data submission for SC with manage meter data privileges.	Core	MDMS
DRSR-BRQ134	The metering system shall enforce meter data submission timelines to meet payment calendar timelines.	Core	MDMS
DRSR-BRQ136	The metering system shall enforce late meter data provisions applicable to current SCME meter data submissions.	Core	MDMS
DRSR-BRQ138	The metering system shall accept and store meter data at the registration level.	Core	MDMS
DRSR-BRQ140	The metering system must provide reliability, security, storage and backup for the meter data to CAISO specifications.	Core	MDMS
DRSR-BRQ142	The system shall allow for multiple versions of meter data submittal. Each version shall be timestamped for auditing purposes. The most recent version of meter data meeting settlement timelines shall be used for baseline calculation.	Core	MDMS

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ143	**Business Rule**: Meter data submission shall be identified as generation or load. The system shall provide a mechanism to identify meter data as generation or load. **Note**: Currently Load is submitted under Channel 1 and 'zeros' for Channel 4. Generation is submitted under Channel 4 and zeros' for Channel 1.	Core	MDMS
DRSR-BRQ144	Meter data shall be identified in terms of granularity. Accepted granularity includes 5-minute, 10-minute, 15-minute, and hourly.	Core	MDMS

Meter Data Management for NAESB Approved Performance Measurement Methods

Meter Data Type	NAESB Performance Measurement Methods	ISO Baseline Method
Actual	1	Hourly Gen / *DRP Calculated Performance Measurement*
Actual	1	10 In 10
Actual	1	Meter Before Meter After (Load)
Actual	1	New (TBD)
Statistical	2	Hourly Gen / *DRP Calculated Performance Measurement*
Statistical	2	10 In 10
Statistical	2	New (TBD)

Actual	Meter Generator Output	MGO (systematically same as Hourly Gen)
Actual	Meter Generator Output	Meter Before Meter After (Gen)

Meter Data Management for ISO Baseline Method - 10 in 10

Baseline Type	Sampling	SC Revenue Quality Meter Data Collection	SC Settlement Quality Meter Data Submission	Meter Data Type
1 (Actual)	N/A	All meter data collected	Sum of all locations as a single value	Load
2 (Statistical)	YES	Some % of locations have meter data.	SC shall extrapolate based on sampling	Load

Meter Data Management for ISO Baseline Method – Hourly Gen/ *DRP Calculated Performance Measurement*

Baseline Type	Sampling	SC Revenue Quality Meter Data Collection	Determine Performance Measurement (Baseline - Actual)	SC Settlement Quality Meter Data Submission	Meter Data Type
1 (Actual)	N/A	All meter data collected	Sum of all locations as a single value	Results of Performance Measurement Calculation (Resource-level Submission) - Sum of all locations as a single value	Gen
2 (Statistical)	YES	SC shall sample a percentage of locations that have actual meter data based on ISO –	SC Shall determine performance measurement based on an ISO-approved performance	Results of Performance Measurement Calculation (Resource-level	Gen

		approved statistical sampling methodology.	measurement methodology using ISO – approved statistical sampling methodology	Submission) using an ISO – approved statistical sampling methodology	

Meter Data Management for ISO Performance Measurement Method – Meter Generator Output using Hourly Generator ISO Baseline Method

Baseline Type	Sampling	SC Revenue Quality Meter Data Collection	Determine Performance Measurment	SC Settlement Quality Meter Data Submission	Meter Data Type
1 (Actual)	N/A	All meter data collected	TBD SC Shall determine performance measurement based on an ISO-approved performance measurement methodology for MGO	(One-to-One Registration to Resource submission) as actual meter data	Gen

5.1.3 Meter Data Management - Baseline Type 1

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ145	The meter data system shall accept meter data.	Core	MDMS
DRSR-BRQ146	The meter data system shall allow for **10 in 10 baseline method** meter data submission. This shall be based on the submission of actual *load* meter data for all SANs within the registration.	Core	MDMS

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ148	The meter data system shall allow for **Meter Before Meter After baseline method for loads**. This shall be based on the submission of actual *load* meter data for all SANs within the registration.	Core	MDMS

5.1.4 Meter Data Management - Baseline Type 2

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ152	The meter data system shall allow for **Hourly Gen baseline method** meter data submission based on statistical sampling. This shall be based on the submission of an SC-calculated baseline and performance measurement using statistically sampled load meter data extrapolated to represent all SANs within the registration.	Core	MDMS
DRSR-BRQ154	The meter data system shall allow for **10 in 10 baseline method** meter data submission based on statistical sampling. This shall be based on the submission of statistically sampled *load* meter data extrapolated to represent all SANS within the registration.	Core	MDMS

5.1.5 Meter Data Management - Meter Generator Output

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ158	The meter data system shall allow for **Hourly Gen baseline method, Meter Generator Output baseline type** based on the submission of actual, or ISO approved derived meter data. This may represent actual or ISO approved derivation of *generation output* meter data for one or more meter generator metered quantities within the registration. **Example**: Loc 1 = 1MW (MGO), Loc 2 = 2 MW (MGO). Registration (MGO) = Loc1 + Loc 2 = 3 MW submitted meter data.	Core	MDMS

5.2 Business Process: Resource ISO Baseline Calculation Management

5.2.1 System Data Consumption

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ200	The settlements system shall consume calculation-related data elements from the appropriate source. Data elements include: • the relationship between the resource and the registration, • resource and registration effective dates, • registration baseline method, • LSE SC Load to registration relations mapping for a PDR resource. • Meter data from metering system (Gen and Load) Note: Some of these data elements may already be consumed by the Settlements system.	Core	Settlements, DRRS/MDMS
DRSR-BRQ202	The settlements system shall consume resource outage derates.	Core	Settlements, OMS

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ204	Appropriate MQS payload for event management. **Note**: Functionality exists. Payloads are already subscribed to.	Core	MQS, Settlements

5.2.2 Resource ISO Baseline Calculation Management – General Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ210	System must determine what meter data is required for baseline selected (ie. 10 in 10 requires load meter data, Hourly gen requires generation meter data etc.)	Core	Settlements Settlement s
DRSR-BRQ212	The system shall provide functionality for configuring additional baseline methodologies.	Core	Settlements Settlement s
DRSR-BRQ214	The system shall provide functionality for configuring different intervals, for example, calculate 5 minutes baselines if appropriate.	Core	Settlements Settlement s

Baseline Method Calculation Applicability

Baseline Method	Calculate Baseline
10 in 10	YES
Hourly Gen	NO
Meter Before Meter After Load (Used for A/S No Pay)	NO
Meter Gen Output	TBD

5.2.3 10 in 10 Baseline Calculation Algorithm

Baseline Calculation Granularity to Performance Measurement Granularity Transformation for Settlement, by Market Participation Type

Market Type	Data Submission Granularity	Disagregation to 5-minute	Baseline Granularity	Performance Measurement Calculation	Performance Measurement Aggregate to Hourly (Day-Ahead Only)
Day-Ahead	Hourly	Yes	5-minute	Baseline- Actual (5-minute)	Yes
Day-Ahead	15-minute	Yes	5-minute	Baseline- Actual (5-minute)	Yes
Day-Ahead	5-minute	N/A	5-minute	Baseline- Actual (5-minute)	Yes
Real-Time	Hourly-Not Allowed	N/A	N/A	Baseline- Actual (5-minute)	N/A
Real-Time	15-minute	Yes	5-minute	Baseline- Actual (5-minute)	N/A
Real-Time	5-minute	N/A	5-minute	Baseline- Actual (5-minute)	May aggregate to 15 minute for FMM

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ216	The system shall include baseline calculation option using 10 in 10 non-event day selection method. This baseline calculation will be based on average (5-minute) historical load meter data during the baseline window	Core	Settlements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ218	Business Rule: The baseline window for meter data will be 45 calendar days.	Core	Settlements
DRSR-BRQ220	Selecting Baseline Days: The selection of baseline days is performed by counting a number of acceptable days prior to the event day (day of award/dispatch). The system shall include a number of the most recent days, excluding different Day-Types and Previous Events Days. ▪ Support Two different Day-Types: Weekday (Monday through Friday), Weekend/Holiday (Saturday, Sunday, or any NERC Holiday) ▪ Define Previous Event Day: A Previous Event Day is any day on which there was either a resource event (award/dispatch) or a (Pmax derate) outage. Previous event days are specific to the PDR or RDRR resource.	Core	Settlements
DRSR-BRQ222	Determine Previous Event Days to be excluded from 10 in 10 baseline calculation: The system shall use resource-level market awards, dispatches, and outage information to determine previous event days used across all of the resource's effective registrations. The system shall receive market award, dispatch data, outage information the appropriate ISO market systems (IFM/RTN, MQS, OMS) . The system shall store sufficient market data (at least 45 days' worth) to perform the calculation.	Core	IFM/RTN, MQS, OMS, Settlements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ224	Establish Target Non-Event Days: ▪ Target & Minimums are defined as: Weekday / Weekend/Holiday Target: 10 / 4 Minimum: 5 / 4 ▪ Once the target number of days is reached, selection ends. Exception Handling Cases if target Non-Event days not reached: ▪ If the target number of days is not reached, but the minimum number of days is reached, the baseline is calculated on the selected days. ▪ If the minimum number of days is not reached, the highest usage event days within the baseline window will be used to reach the minimum number of days. The highest usage event days are defined as the highest totalized load for the registration during event hours being calculated. ▪ There is no elimination for “abnormally low” or “abnormally high” usage days. ▪ If no meter data is available (i.e. blank) then the system will assume null value is equal to zero for the purposes of calculating the baseline.	Core	Settlements
DRSR-BRQ226	Calculate 10 in 10 Baseline: The baseline shall be calculated as a simple hourly average of the selected target non-event days meter data.	Core	Settlements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ228	**CBL Event Day Adjustment**: • The CBL calculation will include a symmetric, multiplicative Load Point Adjustment (referred to as a Morning Adjustment). This multiplier will be applied to the CBL by default. • Note: On a registration level, the system shall allow for CBL adjustment to be a configurable calculation step (ON or OFF). This is based on current tariff authority for DRP to request and ISO-approved load point adjustment exemption. **Load Point Adjustment Calculation Description**: The multiplier will be calculated based on a 3 hours average. To calculate the multiplier, the system will acquire the hourly meter data for the 4 hours immediately prior to the Event. The hour immediately prior to the Event Start is excluded. The system will calculate the ratio of the average load for these 3 hours relative to the average for the same 3 hours of the calculated baseline. The same multiplier will be applied to each hour of the event. • The multiplier will be capped at both a 20% increase (load ratio = 1.2) and a 20% decrease (load ratio = 0.8). • The per-registration multiplier shall be a configurable value, adjusted by the ISO. Design Consideration Note: Weather sensitivity adjustments may be examined as a future enhancement and the system must be able to support additional weather based adjustments to the baseline.	Core	Settlements
DRSR-BRQ230	The 10 in 10 baseline calculation shall use Settlement Quality Meter Data (SQMD). The system shall store sufficient meter data (at least 45 days) for the 10 in 10 baseline calculation.	Core	Settlements
DRSR-BRQ232	The 10 in 10 baseline calculation shall use the meter data consistent with the current (active) registration. The system must have versioning capability across registrations and utilize the effective meter data (based on registration effective dates) for that registration in the 10 in 10 baseline calculation.	Core	Settlements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ234	The 10 in 10 baseline calculation shall have versioning capability that allows reruns of the 10 in 10 baseline calculations using updated meter data that may be submitted at a later time.	Core	Settlements

5.2.4 Hourly Gen Baseline Calculation Algorithm

A.K.A: *DRP Calculated Performance Measurement*

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ236	For the Hourly Gen Baseline Method, the system shall allow a DRP's SC to upload the results of an ISO approved performance measurement which was calculated by the DRP's SC. This might include the results of an SC calculated baseline and derivation of a performanace measurement submitted at the registration level (maintaining a One-to-One Registration to Resource level mapping).	Core	Settlements

5.2.5 Meter Before Meter After Baseline Calculation Algorithm

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ238	The system shall calculate Meter Before Meter After in the current manner (within Settlements) for A/S No Pay.	Core	Settlements
DRSR-BRQ240	The Settlement system shall utilize actual load meter data submitted for **Meter Before Meter After baseline method**.	Core	Settlements

5.2.6 Calculation Result Retrieval

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ242	The DRP SC shall have the ability to retrieve the calculation results via a user interface and via APIs.	Core	Settlements

5.2.7 Resource Event Management

Event Management, as it is used here, refers to DR resource horizon awards and dispatch for both capacity (including A/S non-spin and spin) and energy.

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ244	When calculating baselines, the system shall utilize PDR/RDRR event start and end times including: • DA and RT energy events • DA and RT A/S capacity award events (non-spinning and spinning) • DA and RT A/S energy events (non-spinning and spinning)	Core	Settlements
DRSR-BRQ246	The system shall observe event characteristics based on event revisions (updates / deletions) when calculating baselines.	Core	Settlements
DRSR-BRQ248	The system will display events to DRP SCs including event start time, event end time.	Core	Settlements
DRSR-BRQ250	The system shall consider outage derate event start and end times when calculating baselines.	Core	Settlements, OMS
DRSR-BRQ252	The system shall update event characteristics based on outage event revisions (updates / deletions)	Core	Settlements, OMS

5.2.8 Resource Outage Management

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ254	System shall maintain capability for demand response resources (PDR, RDRR) the ability to submit outages / derates.	Existing Requirement	OMS

5.3 Business Process: Resource ISO Resource Performance Measure Management

5.3.1 Performance Measurement Management

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ300	For Registrations with **10 in 10 Baseline Method:** System shall perform the registration performance measurement as the difference between the registration baseline metered value against the registration actual metered value for each identified resource award and/or dispatch interval. **Day-Ahead Participation**: (5-minute-to-Hourly Aggregation or Hourly Baseline – Hourly Actual = Hourly Performance Measurement) If the meter data is submitted on an hourly basis, use it for baseline and performance calculation **Real-time Participation (5 minute):** (5-minute Baseline – 5-minute Actual = 5-minute Performance Measurement) **Real-Time Assumption**: A “real-time adjustment” is no longer needed when calculating baselines and performance measurements at a 5-minute interval. Hourly intervals do not apply in the real-time.	Core	Settlements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ302	**For Registrations with Hourly Gen Baseline Method:** System shall use registration-level submitted meter data as the performance measurement (generation quantity) data (maintaining a One-to-One Registration to Resource level mapping). **Note**: No baseline calculation is required for Hourly Gen.	Core	Settlements
DRSR-BRQ312	Individual registration performance measurement should be viewable by DRP SC and LSE SC (maintaining a One-to-One Registration to Resource level mapping).	Core	Settlements
DRSR-BRQ314	The system shall allow for performance measurement versioning at the registration level (maintaining a One-to-One Registration to Resource level mapping). Each version shall have a timestamp. The most recent version will be used for settlements purposes.	Core	Settlements
DRSR-BRQ316	The system will provide a way for users to view a summary of their metering file submissions. The user will then be able to view details around each metering file submission listed.	Core	Settlements

5.4 Business Process: ISO Resource Compliance

5.4.1 Business Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DRSR-BRQ402	ISO shall monitor baseline and performance calculations ensuring compliance with DR program rules. This applies specifically to NEW baseline calculations described in this BRS. **Note**: For example – Late Missing Measurements, Rules of Conduct compliance measures.	Core	TBD

5.5 Business Process: Manage Market Billing & Settlements

5.5.1 Business Requirements

Manage**ID#**	**Business Feature**	**Requirement Type**	**Potential Application(s) Impacted**
DRSR-BRQ500	No impacts or new business requirements have been identified for the following Settlement calculations: • Market Settlements • No Pay Compliance • Default Load Adjustment	Core	Settlements

Business Process: Manage Scheduling Coordinator Self Audit For SC-Metered Entities

#	**Business Feature**	**Requirement Type**	**Potential Application(s) Impacted**
DRSR-BRQ600	**Business Process**: Develop and enforce self-auditing requirements specific to DRP SC using statistical sampling (may include reporting a sample plan).	Core	N/A