Business Requirements Specification

Flexible Ramping Constraint Settlement

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Table of Contents

1. INTRODUCTION ........................................................................................................................................... 4
   1.1 PURPOSE ................................................................................................................................................ 4
   1.2 REFERENCES ........................................................................................................................................... 4

2. DETAILS OF BUSINESS NEED/PROBLEM .................................................................................................... 4
   2.1 DESCRIPTION ......................................................................................................................................... 4

3. BUSINESS PROCESS IMPACTS ..................................................................................................................... 5
   3.1 HIGH LEVEL BUSINESS PROCESS ....................................................................................................... 5
       3.1.1 Description .................................................................................................................................... 5
   3.2 JUSTIFICATION ...................................................................................................................................... 6

4. BUSINESS REQUIREMENTS .......................................................................................................................... 6
   4.1 BUSINESS PROCESS: <MANAGE ENTITY & RESOURCE MAINTENANCE UPDATES > .......................... 7
       4.1.1 Business Requirements .................................................................................................................. 7
   4.2 BUSINESS PROCESS: <MANAGE DAY AHEAD MARKET AND REAL TIME MARKET> ..................... 8
       4.2.1 Business Requirements .................................................................................................................. 8
   4.3 BUSINESS PROCESS: <MANAGE OASIS>............................................................................................... 10
       4.3.1 Business Requirements .................................................................................................................. 10
   4.4 BUSINESS PROCESS: <MANAGE SCHEDULING PROCESS CAS AND OUTAGE SLIC> .................... 12
       4.4.1 Business Requirements .................................................................................................................. 12
   4.5 BUSINESS PROCESS: <MANAGE MARKET BILLING & SETTLEMENTS > ........................................ 12
       4.5.1 Business Requirements .................................................................................................................. 12
   4.6 BUSINESS PROCESS: METRICS AND PERFORMANCE CRITERIA .................................................. 17
       4.6.1 Business Requirements .................................................................................................................. 17
   4.7 BUSINESS PROCESS: INFORMATION SECURITY ADHERENCE ...................................................... 18
       4.7.1 Business Requirements .................................................................................................................. 18
   4.8 BUSINESS PROCESS: MARKET MONITORING AND REPORTING ..................................................... 18
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 are intended for submission to the Information Technology Services (ITS) department and will serve as the initial set of business unit requirements for the appropriate software application/systems development effort. It is understood that ITS will perform additional requirements and systems analysis and may produce “To Be” Business Process Models, System Requirements Specifications, and Use Cases to serve as the set of requirements documents used by the ITS 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 ITS requirements documentation produced.

1.2 References

Offer of Settlement Regarding the ISO Flexible Ramping Constraint Amendment
Docket No. ER12-50-000:


2. Details of Business Need/Problem

2.1 Description

The flexible ramping constraint functionality is implemented in the RTPD and deployed in production at June 23, 2011. These new constraints ensure that the optimization solution in RTPD leaves some un-loaded capacity below Pmax (that can be dispatched up) on the scheduled internal ramp limited resources.

On July, 2012, the ISO submitted to FERC Offer of Settlement to incorporate the new payment structure, on which basis the ISO will rescind payments for non-performance, the allocation of costs associated with Flexible Ramping constraint.

The essential terms of the settlement are as follows:
1. For each applicable fifteen-minute RTUC interval, the Flexible Ramping Constraint derived price will be equal to the lesser of:
   1) $800/MWh; or
   2) the greater of:
      (a) 0;
      (b) the Real-time Ancillary Services Marginal Price for Spinning Reserves for the applicable fifteen-minute RTUC interval; or (c) the Flexible Ramping Constraint Shadow Price minus seventy five percent of the maximum of (i) zero (0); or (ii) the Real-Time System Marginal Energy Cost, calculated as the simple average of the three five-minute Dispatch Interval System Marginal Energy Costs in the applicable fifteen-minute RTUC interval.

2. The ISO will rescind payments to scheduling coordinators for the non-performance of resources for the MWs deemed to be undelivered Flexible Ramping Constraint capacity. Undelivered Flexible Ramping Constraint capacity will be determined as the hourly sum of the Settlement Interval amounts of the minimum of: 1) the Flexible Ramping Constraint capacity identified as having contributed to the relief of the Flexible Ramping Constraint; and 2) the maximum of: (a) 0 (zero); and (b) the difference between (i) the absolute value of the sum of negative Tier 1 UIE and negative Tier 2 UIE, and (ii) the upward MWs identified as Undelivered Ancillary Services Capacity as already defined in Section 11.10.9.3 of the ISO tariff.

3. The new section 11.25.3.1 provides that seventy-five percent of the total netted costs will be allocated to scheduling coordinators based on their Measured Demand for each applicable Trading Hour.

4. The new section 11.25.3.2 provides that twenty-five percent of the total netted costs will be allocated to scheduling coordinators based on each scheduling coordinator’s gross negative supply deviations.

5. Effective date: November 1, 2012. No retroactive adjustments.

6. Section 27.10 is also modified to include the ability for Dynamic System Resources to participate in relieving the Flexible Ramping Constraint if the scheduling coordinator scheduling that resource can demonstrate that it has firm transmission service to the ISO balancing authority area intertie that allows the resource to deliver additional energy in real-time.

3. Business Process Impacts

3.1 High Level Business Process

3.1.1 Description

The impacted processes include:

Manage Entity & Resource Maintenance Updates: allow set the Flexible Ramp eligibility for the dynamic resources. Participating Load is modeled as a generator can be eligible for Flexible Ramping.

Manage Real Time Market: Manage the Flexible ramp procurement in RTPD; ensure the procurement meet the requirement, not exceed the requirement.

Manage Market Billing & Settlements: Manage the Flexible Ramp Settlement. Payment for Flexible Ramp Award, include No pay for Non-performance of Flexible Ramp. Manage allocation for Flexible ramp cost on Measure Demand (75%) and Supply Negative Deviations (25%).
3.2 Justification

The ISO will implement these changes as approved by FERC on October 3, 2012, to resolve all the issues related Flexible Ramping Constraint tariff amendment in Docket No. ER12-50.

4. 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.

The impacted systems include:

RTPD:
1. System must optimize RTPD market procurement of the flexible ramping capacity to meet the ISO requirement, not more than requirement.
2. System must allow Dynamic System Resources to provide the flexible ramping capacity in RTPD. System must ensure the flexible ramping capacity that provided by the dynamic resources compete the Intertie capacity (ITC) in RTPD.

OASIS: (CAISO)
1. Enhance the explanations provided on OASIS for information related to the Flexible Ramping Constraint.

CAS:
1. CAS must receive/consume the dynamic resource Flexible Ramp Award. The transmission profile of the e-tag shall reflect that external transmission reservation include flexible ramp.

Settlement:

Payment:
• The flexible ramping constraint price determined as follows for each relevant Dispatch Interval. (*new functionality, calculation in Settlements in Charge Code 7050*)
  o For each applicable fifteen-minute RTUC interval, the Flexible Ramping Constraint derived price will be equal to the lesser of: 1) $800/MWh; or 2) the greater of: (a) 0; (b) the Real-time Ancillary Services Marginal Price for Spinning Reserves for the applicable fifteen-minute RTUC interval; or (c) the Flexible Ramping Constraint Shadow Price minus seventy-five percent of the maximum of (i) zero (0); or (ii) the Real-Time System Marginal Energy Cost, calculated as the simple average of the three five-minute Dispatch Interval System Marginal Energy Costs in the applicable fifteen-minute RTUC interval.
• Resources will be paid based on the calculated price for each 15 minute Settlement Interval. (*update existing charge code*)
• No-Pay for Flexible Ramping (new charge code): Payment to resources for non-performance will be rescinded based upon the non-performance of resources for the MWs deemed to be undelivered Flexible Ramping Constraint capacity. Undelivered Flexible Ramping Constraint capacity will be determined as the hourly sum of the Settlement Interval amounts of the minimum of: 1) the Flexible Ramping Constraint capacity identified as having contributed to the relief of the Flexible Ramping Constraint; and 2) the maximum of: (a) 0 (zero); and (b) the difference between (i) the absolute value of the sum of negative Tier 1 UIE and negative Tier 2 UIE,4 and (ii)
the upward MWs identified as Undelivered Ancillary Services Capacity as already defined in Section 11.10.9.3 of the ISO tariff.

- No congestion cost change /payback for the Flexible Ramping Capacity from dynamic resources. No BCR, NO GMC.

**Allocation:**
1. 75% of Flexible Ramp cost will be allocated pro rata to Scheduling Coordinators based on their Measured Demand for each relevant trading hour. (update exiting charge code 7056)
2. 25% of the costs will be allocated to Scheduling Coordinators based initially on their proportion of daily gross supply negative deviations, (update exiting charge code 7056)
3. Reversed out at the end of each month (new charge code) and re-allocated based on the monthly sum of the daily gross supply negative deviations (new charge code).
4. Gross supply deviations do not net across settlement intervals and SC.

**BPM changes:**
Market Operations; Market Instruments; Settlements & Billing.

**Operating procedure**
The ISO will issue an operating procedure that explains the ISO’s practices in determining the Flexible Ramping Constraint capacity procured.

### 4.1 Business Process: < Manage Entity & Resource Maintenance Updates >

#### 4.1.1 Business Requirements

<table>
<thead>
<tr>
<th>ID#</th>
<th>Business Feature</th>
<th>Requirement Type</th>
<th>Potential Application(s) Impacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRCS-BRQ010</td>
<td>Master File shall set the eligibility of flexible ramping capacity for the dynamic scheduling resource or pseudo-tie generators that eligible provide flexible ramping capacity in the market. The Master File shall pass the dynamic system resources eligibility of flexible ramping capacity to the downstream market systems.</td>
<td>Core</td>
<td>Existing Functionality in MF</td>
</tr>
</tbody>
</table>
### 4.2 Business Process: <Manage Day Ahead Market and Real Time Market>

<table>
<thead>
<tr>
<th>ID#</th>
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<th>Potential Application(s) Impacted</th>
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<tbody>
<tr>
<td>FRCS-BRQ020</td>
<td>Master File shall set the eligibility of flexible ramping capacity for the participating load that modeled as a generator, and eligible provide flexible ramping capacity in the market. The Master File shall pass the participating load that modeled as a generator eligibility of flexible ramping capacity to the downstream market systems.</td>
<td>Core</td>
<td>Existing Functionality in MF</td>
</tr>
<tr>
<td>FRCS-BRQ021</td>
<td>Master File shall set the eligibility of flexible ramping capacity for the ISO internal generation resources, and eligible provide flexible ramping capacity in the market. The Master File shall pass the ISO internal generation resources eligibility of flexible ramping capacity to the downstream market systems.</td>
<td>Core</td>
<td>Existing Functionality in MF</td>
</tr>
</tbody>
</table>

### 4.2.1 Business Requirements
<table>
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</thead>
<tbody>
<tr>
<td>FRCS-BRQ030</td>
<td>Real Time Market must co-optimize RTPD market procurement of the flexible ramping capacity with Energy and Ancillary Services to meet the ISO requirement. RTPD shall not procure flexible ramping capacity more than the flexible ramping capacity requirement for the corresponding intervals. For example: There are two on-line resources that can provide 80 MW each flexible ramping capacity. The requirement is 100 MW; The RTPD procured the total flexible ramping capacity shall be 100 MW. The RTPD shall publish the award for each generator with total capacity 100 MW to the Settlement system. The remaining 60 MW on-line capacity is not the Flexible ramping capacity award, shall not get Flexible ramping capacity payment settlement.</td>
<td>Core</td>
<td>RTPD</td>
</tr>
<tr>
<td>FRCS-BRQ040</td>
<td>The System shall ensure that the flexible ramping capacity award is for each resource. The total capacity of all the flexible ramping capacity awards shall equal to the total system flexible ramping capacity requirement for the binding interval.</td>
<td>Core</td>
<td>RTPD</td>
</tr>
<tr>
<td>FRCS-BRQ070</td>
<td>Current the ISO does not procure Flexible Ramping Capacity in the Day Ahead Market. This will NOT be changed in this Flexible Ramping Constraint Settlement (FRCS) effort.</td>
<td>Core</td>
<td>DAM</td>
</tr>
<tr>
<td>FRCS-BRQ080</td>
<td>Current the ISO does not procure Flexible Ramping Capacity in the Real Time Dispatch (RTD &amp; RTCD). This will NOT be changed in this Flexible Ramping Constraint Settlement (FRCS) effort. Current, the Flexible Ramping constraint is enforced in RTD non-binding intervals. This will NOT be changed in this Flexible Ramping Constraint Settlement (FRCS) effort.</td>
<td>Core</td>
<td>RTD, RTCD</td>
</tr>
<tr>
<td>FRCS-BRQ090</td>
<td>The System shall allow the eligible Dynamic Schedule to provide the Flexible Ramping capacity, along with other eligible internal generation resources in RTPD. Pseudo-tie generators are already eligible to provide flexible ramping capacity and will continue to do so.</td>
<td>Core</td>
<td>RTPD</td>
</tr>
</tbody>
</table>
### 4.3 Business Process: <Manage OASIS>

#### 4.3.1 Business Requirements

<table>
<thead>
<tr>
<th>ID#</th>
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</tr>
</thead>
<tbody>
<tr>
<td>FRCS-BRQ100</td>
<td>The System shall ensure the Flexible Ramping capacity that provided by the dynamic resources must compete the Intertie capacity (ITC) in RTPD. &lt;br&gt;The procurement of flexible ramp capacity from dynamic resources in the binding RTPD interval will be limited by the available capacity on the applicable intertie transmission constraint (ITC) the dynamically scheduled resource is associated with.</td>
<td>Core</td>
<td>RTPD</td>
</tr>
<tr>
<td>FRCS-BRQ110</td>
<td>The System will continue to allow the eligible participating load that modeled as pseudo generator to provide the Flexible Ramping capacity in RTPD.</td>
<td>Core</td>
<td>RTPD</td>
</tr>
<tr>
<td>FRCS-BRQ120</td>
<td>System must broadcast the resource award of Flexible Ramping capacity.</td>
<td>Core</td>
<td>RTPD</td>
</tr>
<tr>
<td>FRCS-BRQ121</td>
<td>The ISO has created an operating procedure that explains the ISO’s practices in determining the Flexible Ramping Constraint capacity procured. &lt;br&gt;The new operating procedure will be posted at <a href="http://www.caiso.com">www.caiso.com</a> operating procedures.</td>
<td>Core</td>
<td><a href="http://www.caiso.com">www.caiso.com</a></td>
</tr>
<tr>
<td>ID#</td>
<td>Business Feature</td>
<td>Requirement Type</td>
<td>Potential Application(s)</td>
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</table>
| FRCS-BRQ130 | The ISO shall enhance the explanations provided on OASIS for information related to the Flexible Ramping Constraint information available under the Prices “System Ramping Nomogram Results” will change to “Flexible Ramping Constraint Results”. The ISO will update to following statement: Flexible Ramping Constraint Results – Posts the following values for RTPD and RTD market runs, for intervals when the Flexible Ramping Constraint is enforced.  
  - Ramp Up Capacity (MW) – The required amount of total unloaded capacity below maximum operating limits (that can be dispatched up) of the ramp-limited resources that is retained through the market optimization. The Flexible Ramping Constraint is enforced on a system level per market run and market interval.  
  - Ramp Up Shadow Price ($/MW) - Shadow price of the ramping up constraint when binding in the relevant market run and in the binding market interval. Binding interval shadow price is the Ramp Up Shadow Price when "Market Run DateTime" = "Market Interval StartDateTime" or when "MKT_RUN_START_TIME" = "INT_START_TIME". Payment to resources providing the flexi-ramp capacity will be paid based on the following price: For each applicable fifteen-minute RTUC interval, the Flexible Ramping Constraint derived price will be equal to the lesser of: 1) $800/MWh; or 2) the greater of: (a) 0; (b) the Real-time Ancillary Services Marginal Price for Spinning Reserves for the applicable fifteen-minute RTUC interval; or (c) the Flexible Ramping Constraint Shadow Price minus seventy-five percent of the maximum of (i) zero (0); or (ii) the Real-Time System Marginal Energy Cost, calculated as the simple average of the three five-minute Dispatch Interval System Marginal Energy Costs in the applicable fifteen-minute RTUC interval. The flexi-ramp cost for each binding RTPD interval can be estimated by the amount of procured RAMP Up Capacity multiplied by Ramp up Shadow Price in that binding interval. If the flexi-ramping constraint is binding and feasible, the procured Ramp Up Capacity is equal to the flexi-ramping capacity requirement (Ramp Up Capacity or RAMP_UP_CAP_REQ). However, if the flexi-ramping constraint is infeasible, meaning that the RTPD market run is unable to procure the full required flexi-ramping capacity, the procured Ramp Up Capacity would be less than the flexi-ramping capacity requirement. On OASIS, the flexi-ramping capacity requirement not the procured amount is posted. | Core                      | OASIS           |
ID# | Business Feature | Requirement Type | Potential Application(s) Impacted |
---|------------------|------------------|----------------------------------|
FRCS-BRQ135 | No changes in definition and results for the current OASIS display under the Prices-System Ramping Nomogram Results: Ramp Up Capacity (MW) | Core | OASIS |
Ramp Up Shadow Price ($) | |
Ramp Down Capacity (MW) (empty, no change) | |
Ramp Down Shadow Price ($) (empty, no change) | |
No new data item will be added to display list in this FRCS effort. | |

4.4 Business Process: <Manage Scheduling Process CAS and Outage SLIC >

4.4.1 Business Requirements

ID# | Business Feature | Requirement Type | Potential Application(s) Impacted |
---|------------------|------------------|----------------------------------|
FRCS-BRQ141 | The SC shall submit the transmission profile include their potential Flexible Ramping capacity | Core | CAS |
FRCS-BRQ142 | No CAS system changes in this FRCS effort. | Core | CAS |
FRCS-BRQ143 | For the dynamic schedule and Pseudo tie generator with the Flexible Ramping Capacity awards, the SC shall be allowed to submit SLIC for the resource capacity derate to reflect the derate Flexible Ramping Capacity award. | Core | SLIC, OMS |

4.5 Business Process: <Manage Market Billing & Settlements >

4.5.1 Business Requirements

ID# | Business Feature | Requirement Type | Potential Application(s) Impacted |
---|------------------|------------------|----------------------------------|
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>FRCS-BRQ150</td>
<td>The Flexible Ramping Constraint settlement rules for payment and cost allocation is applicable to the Flexible Ramping Upward awards.</td>
<td>Core</td>
<td>Settlement</td>
</tr>
<tr>
<td>FRCS-BRQ151</td>
<td>Resources shall be paid the product of the resource’s Flexible Ramping Capacity MWs awards from RTPD, and the flexible ramping constraint price. The resource’s Flexible Ramping Capacity MWs awards shall be broadcasted by the RTM.</td>
<td>Core</td>
<td>Settlement, RTM</td>
</tr>
<tr>
<td>ID#</td>
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<td>Requirement Type</td>
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<tr>
<td>FRCS-BRQ160</td>
<td>The flexible ramping constraint (FRC) price shall be determined as follows for each relevant RTUC Interval: Min {800, Max (Real-Time Spinning Reserve Price, (Flexible Ramp Constraint Shadow Price minus 0.75x15 Minute Real-Time System Marginal Energy Cost), 0)}</td>
<td>Core</td>
<td>Settlement,</td>
</tr>
</tbody>
</table>

Where:
- Real-Time Spinning Reserve Price is the relevant 15-minute Real-Time Unit Commitment (RTUC) interval regional ASMP for the applicable resource;
- Flexible Ramp Constraint Shadow Price is the relevant 15-minute RTUC flexible ramp constraint shadow price; and
- 15-Minute Real-Time System Marginal Energy Cost is the average of the 3 relevant 5-minute dispatch interval system marginal energy cost.

Example 1:
- Flexible Ramping Constraint is not binding. The FRC price is the Real Time Spinning Price.
  - Real Time Spinning Price $30/MW
  - RTD LMP energy component $50/MW
  - Flexible Ramping constraint shadow price = 0

  Flexible Ramping constraint price = min (800, max(30, max((0-0.75*50), 0))) = $30/MW

Example 2:
- Flexible Ramping Constraint is binding. The FRC price is the maximum of spinning price and (Shadow Price - 75% of real time energy price). The FRC will get Spinning price at least, will be higher if the shadow price – 75% RTM LMP is higher; capped by $800/MW.
  - Real Time Spinning Price $30/MW
  - RTD LMP energy component $50/MW
  - Flexible Ramping constraint shadow price = 100

  Flexible Ramping constraint price = min (800, max(30, max((100-0.75*50), 0)))=min(800, max(30, max(62.5,0)))=min(800,62.5)=$62.5/MW

FRCS-BRQ170 | Resources shall be paid based on the calculated price for each 15 minute RTUC interval                                                                                                                                  | Core             | Settlement                      |
<table>
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</thead>
</table>
| FRCS-BRQ180 | Payment to resources for non-performance will be rescinded based on the following equation reflecting the MW quantity of flexible ramp non-performance:  
  - Min (Flexible Ramping Procured, Max(ABS(negative UIE 1 + negative UIE 2) – Upward A/S No-Pay MW Quantity, 0))  
  Where:  
  Flexible Ramping Procured reflects the amount of MW capacity procured for the relevant Settlement Interval;  
  Negative UIE1 is the amount of negative uninstructed imbalance energy from ISO real-time dispatch instructed level for the relevant Settlement Interval;  
  Negative UIE2 is the amount of negative uninstructed imbalance energy from resources hourly day-ahead schedule for the relevant settlement Interval; and  
  Upward A/S No-Pay MW Quantity is the amount of Undelivered No-pay capacity from ISO instructions for delivery of Ancillary Service capacity. | Core             | Settlement                        |
<p>| FRCS-BRQ181 | The negative UIE represents that the resource did not follow upward the instruction, therefore not provide the Flexible Ramping capacity and subject to the No pay. | Core             | Settlement                        |
| FRCS-BRQ190 | If Participating Load is modeled as a pseudo generator, it will be considered in relieving the constraint and will be eligible for payment. | Core             | Settlement                        |
| FRCS-BRQ200 | If Participating Load is modeled as a pseudo generator, it will be considered in relieving the constraint and will be eligible for payment. | Core             | Settlement                        |
| FRCS-BRQ210 | If Participating Load is modeled as a pseudo generator, it will be considered in relieving the constraint and will be eligible for payment. | Core             | Settlement                        |
| FRCS-BRQ220 | If Participating Load is modeled as a pseudo generator, it will be considered in relieving the constraint and will be eligible for payment. | Core             | Settlement                        |</p>
<table>
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<tbody>
<tr>
<td>FRCS-BRQ230</td>
<td>Total costs incurred for flexible ramping constraint will be divided into two amounts: 75/25 percent of the total costs for each hour for cost allocation purpose, 75% to the measured demand, 25% to the supply resources based on deviations. Example: Total Payment for FRC award for HE 10 is $1000, $750 shall be allocated to measured Demand, $250 shall be allocated to the resources based on their deviation.</td>
<td>Core</td>
<td>Settlement</td>
</tr>
<tr>
<td>FRCS-BRQ240</td>
<td>75% of total cost shall be allocated to Scheduling Coordinators based on their Measured Demand for each relevant trading hour.</td>
<td>Core</td>
<td>Settlement</td>
</tr>
<tr>
<td>FRCS-BRQ250</td>
<td>The 75% of total costs shall be allocated among the SCs by load ratio share (pro rata) based on the Scheduling Coordinator’s Measured Demand for the applicable Trading Hour divided by total Measured Demand for the applicable Trading Hour.</td>
<td>Core</td>
<td>Settlement</td>
</tr>
<tr>
<td>FRCS-BRQ260</td>
<td>25% of the costs shall be allocated to Scheduling Coordinators based initially on their proportion of daily gross supply deviations, which are reversed out at the end of each month and re-allocated based on the monthly sum of the daily gross supply deviations.</td>
<td>Core</td>
<td>Settlement</td>
</tr>
<tr>
<td>FRCS-BRQ270</td>
<td>Gross supply deviation shall include negative Settlement Interval UIE1 and UIE 2 deviations plus any negative Operational Adjustment for import resources.</td>
<td>Core</td>
<td>Settlement</td>
</tr>
<tr>
<td>FRCS-BRQ280</td>
<td>Gross supply deviations shall not net across settlement intervals.</td>
<td>Core</td>
<td>Settlement</td>
</tr>
<tr>
<td>FRCS-BRQ290</td>
<td>Gross supply deviations shall be calculated at the resource level and not netted within a scheduling coordinator.</td>
<td>Core</td>
<td>Settlement</td>
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**Flexible Ramping Constraint Settlement**

**Business Requirements Specification**
- Planning

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<tr>
<td>FRCS-BRQ300</td>
<td>In order to allocate the 25% portion, a daily rate shall be calculated based on 25% of the total daily cost of flexible ramping capability divided by the daily total gross supply deviations.</td>
<td>Core</td>
<td>Settlement</td>
</tr>
<tr>
<td>FRCS-BRQ310</td>
<td>When reallocating on a monthly basis, a monthly rate shall be determined based on the total monthly costs of 25% of daily flexible ramp capability divided by the monthly total gross supply deviations.</td>
<td>Core</td>
<td>Settlement</td>
</tr>
<tr>
<td>FRCS-BRQ320</td>
<td>This monthly rate will then be assessed to each SC based its monthly gross supply deviation.</td>
<td>Core</td>
<td>Settlement</td>
</tr>
<tr>
<td>FRCS-BRQ330</td>
<td>Settlement rules must start at the beginning of the month, subject to FERC approval date</td>
<td>Core</td>
<td>Settlement</td>
</tr>
<tr>
<td>FRCS-BRQ340</td>
<td>The ISO will monitor and verify if the dynamic schedule resources with flexible ramping award have adequate transmission capacity to deliver. Send the shortage to Settlement add to no pay as PTB.</td>
<td>Core</td>
<td>Settlement</td>
</tr>
<tr>
<td>FRCS-BRQ341</td>
<td>At end of each month, Settlements shall reverse out the Daily Allocation of Flexible Ramp Cost to daily gross supply deviation and reallocate the cost to monthly gross supply deviation.</td>
<td>Core</td>
<td>Settlement</td>
</tr>
</tbody>
</table>

**4.6 Business Process: Metrics and Performance Criteria**

**4.6.1 Business Requirements**

<table>
<thead>
<tr>
<th>ID#</th>
<th>Business Feature</th>
<th>Requirement Type</th>
<th>Potential Application(s) Impacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRCS-BRQ350</td>
<td>Market System must provide the feasible and optimal solution with Flexible Ramping Capacity constraint in the required timeline.</td>
<td>Core</td>
<td>RTM</td>
</tr>
</tbody>
</table>
### 4.7 Business Process: Information Security Adherence

N/A

#### 4.7.1 Business Requirements

<table>
<thead>
<tr>
<th>ID#</th>
<th>Business Feature</th>
<th>Requirement Type</th>
<th>Potential Application(s) Impacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRCS-BRQ375</td>
<td>CAISO Information Security standards apply to the Flexible Ramping Constraint settlement.</td>
<td>Core</td>
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</tr>
</tbody>
</table>

### 4.8 Business Process: Market Monitoring and Reporting

Business Requirements

<table>
<thead>
<tr>
<th>ID#</th>
<th>Business Feature</th>
<th>Requirement Type</th>
<th>Application(s) Impacted</th>
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</thead>
<tbody>
<tr>
<td>FRCS-BRQ380</td>
<td>Produce report on the Flexible Ramping Capacity similar to the report for Spin reserve capacity.</td>
<td>Core</td>
<td></td>
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</tbody>
</table>