

Market Trials: Operating Reserve in the Energy Market Interface (EMI) User Interface (UI)

July 9, 2024

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Introduction

This document outlines the test cases to be executed in the Energy Market Interface as part of Market Trials Phase 1. In this phase of testing, the primary objective is for Market Participants to confirm that certain functionality to the submission of Operating Reserve offers in the Energy Market Interface (EMI) User Interface (UI) are working as intended.

It is highly recommended that Market Participants start with the Standing Bid submission test cases and then execute test cases in the following order: Daily Dispatch Data (DDD), Real-Time Energy Market (RTEM), Forebay, Operating Reserve (OR) and Schedules.

Market Participants should ensure that they submit any defects via qTest or in the Market Trials Issue Log Template. This will contribute significantly to the overall improvement of the IESO tools. For more information on how submit defects via qTest, Market Participants can refer to the [Quick Take: Submission of Test Case Results and Defects in qTest](#) on the [Market Participant Testing](#) web page.

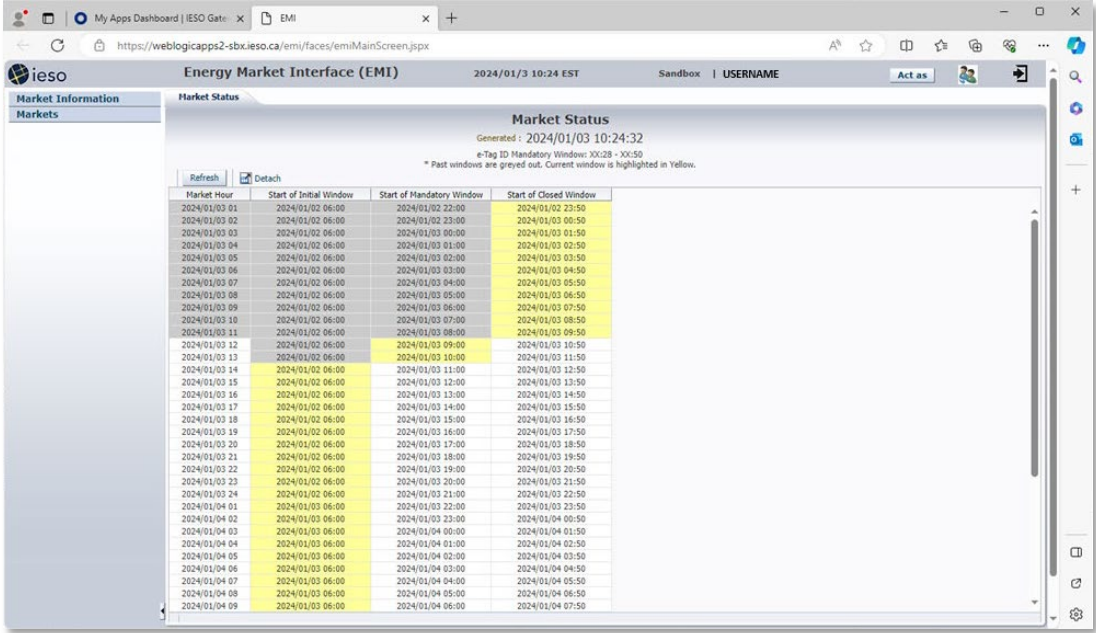
Preconditions:

1. User has access to the IESO's Energy Market Interface (EMI) in the Sandbox environment (<https://emi-sandboxmrp.ieso.ca/>).
2. User has access to IESO Gateway in the Sandbox environment (<https://gateway-sbx.ieso.ca/>)
3. User has a valid user ID and password for EMI and IESO Gateway.
4. User executed the test cases for EMI Connectivity Testing to validate their access. (<https://www.ieso.ca/-/media/Files/IESO/Document-Library/market-renewal/Market-Participant-Testing/Test-Cases-for-Connectivity-Testing.zip>)
5. The Real-Time Energy Market (RTEM) data for the corresponding participant, delivery date, resource (related Forebay), and hour are present in the system.
6. For Query and Cancel requests there must be existing data available in the system for the selected resource.
7. Any Operating Reserve data for a corresponding participant, delivery date, resource, reserve class and hour are present in the system.


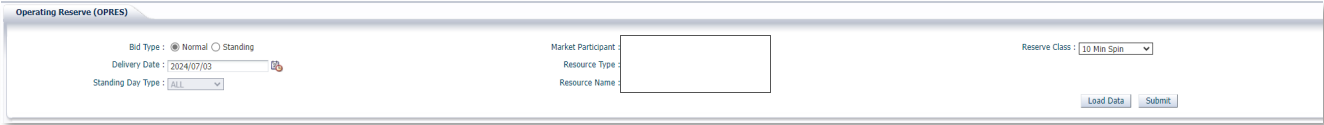
Common Functional Steps


This section lists out the common functional steps when submitting Operating Reserve offers in EMI. This section will be referenced in the following test cases.

CFS-01: Logging into EMI

Step	User Instruction	Expected Result
1	<p>Log in to EMI directly through its URL (https://emi-sandboxmrp.ieso.ca/)</p> <p>OR</p> <p>Users can click on the "Energy Market interface for MRP" tile under the IESO Sandbox Gateway dashboard (https://gateway-sbx.ieso.ca/).</p>	<p>User is able to successfully log into EMI.</p>  <p>The screenshot shows the Energy Market Interface (EMI) web application. The header includes the IESO logo, 'Energy Market Interface (EMI)', the date '2024/01/3 10:24 EST', and a 'Sandbox' environment indicator. Below the header, there's a 'Market Status' section with a timestamp 'Generated: 2024/01/03 10:24:32'. A table below this lists market hours with columns: 'Market Hour', 'Start of Initial Window', 'Start of Mandatory Window', and 'Start of Closed Window'. The table contains data for various dates in January 2024, with some rows highlighted in yellow. The interface also includes a sidebar with 'Market Information' and 'Markets' links, and a 'Refresh' button.</p>

CFS-02: Submitting a Bid

Step	User Instruction	Expected Result
1	Click on the Operating Reserve Market (OPRES) .	<p>The "Operating Reserve (OPRES)" screen will display.</p>  <p>The screenshot shows a vertical menu titled 'Market Information'. The menu items are: Market Status, Market Message, Markets, Real Time Energy Market (RTEM), Operating Reserve (OPRES) (highlighted in blue), Schedule (SCH), Daily Dispatch Data (DDD), Bilateral (BLT), and Forebay Dispatch Data (FDD).</p>
2	<p>For a "Normal" bid type:</p> <p>Submit input data in the following mandatory fields in submission header section for OPRES:</p> <ul style="list-style-type: none">- Bid Type = Normal- Delivery Date (Calendar pop-up on click)Select a value from drop-down list for the below,- Market Participant	<p>The input values selected for the given mandatory fields is displayed.</p>  <p>The screenshot shows the 'Operating Reserve (OPRES)' submission form. It includes fields for Bid Type (Normal selected), Delivery Date (2024/07/03), Standing Day Type (ALL), Market Participant, Resource Type, Resource Name, and Reserve Class (10 Min Spin). There are 'Load Data' and 'Submit' buttons at the bottom right.</p>

Step	User Instruction	Expected Result
	<ul style="list-style-type: none"> - Resource type - Resource Name - Reserve Class 	
3	<p>For a “Standing” bid type:</p> <p>Submit input data in the following mandatory fields in submission header section for OPRES:</p> <ul style="list-style-type: none"> - Bid Type = STANDING <p>Select a value from drop-down list for the below,</p> <ul style="list-style-type: none"> - Standing Day Type - Market Participant - Resource type - Resource Name - Reserve Class 	<p>The input values selected for the given mandatory fields is displayed.</p> 
4	<p>Submit hourly data in the “Bid/Offer Submission Information section”</p> <p>1. Expand required hours</p>	<p>The input values entered for the hourly input fields is displayed and the action type for the submitting hours is submit.</p>


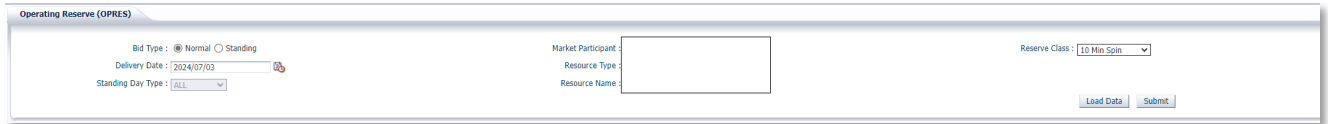
Step	User Instruction	Expected Result
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- | | | |
|--|--|--|
| | <p>2. Select "Submit" from Submit/Cancel drop-down</p> <p>3. Enter values in the hourly input fields based on the submitting resource type</p> | |
|--|--|--|

- | | | |
|---|---|--|
| 5 | Click on the SUBMIT button in the header submission section. | |
|---|---|--|

Submission result pop-up displays the response "Successfully processed the OPRES submission."

CFS-03: Query Operating Reserve Normal and Standing bid data

Step	User Instruction	Expected Result
1	Click on the Operating Reserve Market (OPRES) .	<p>The "Operating Reserve (OPRES)" screen will display.</p> 
2	<p>For a "Normal" bid type:</p> <p>Submit input data in the following mandatory fields in submission header section for OPRES:</p> <ul style="list-style-type: none">- Bid Type= Normal- Delivery Date (Calendar pop-up on click)	<p>The input values selected for the given mandatory fields is displayed.</p> 

Step	User Instruction	Expected Result
	<p>Select a value from drop-down list for the below,</p> <ul style="list-style-type: none"> - Market Participant - Resource type - Resource Name - Reserve Class 	
3	<p>For a “Standing” bid type:</p> <p>Submit input data in the following mandatory fields in submission header section for OPRES:</p> <ul style="list-style-type: none"> - Bid Type= STANDING <p>Select a value from drop-down list for the below,</p> <ul style="list-style-type: none"> - Standing Day Type - Market Participant - Resource type 	<p>The input values selected for the given mandatory fields is displayed.</p> 

Step	User Instruction	Expected Result
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-
- Resource Name
- Reserve Class

4	Click on the Load Data button in the header submission section	The OPRES page displays the queried data values for the selected resource and delivery date.
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Operating Reserve (OPRES)

Bid Type : ☒ Normal ☐ Standing

Market Participant :

Reserve Class :

Delivery Date : 2024/05/23

Resource Type :

Standing Day Type : ALL

Resource Name :

Load Data

Submit

Operating Reserve (OPRES)

Bid Type : ☒ Normal ☐ Standing

Market Participant :

Reserve Class : 10 Min Non-Spin

Delivery Date : 2024/05/23

Resource Type :

Standing Day Type : ALL

Resource Name :

Load Data

Submit

Bid/Offer Submission Information

View

Expand All

Collapse All

Clear Hours

Copy Hours

Detach

Hour

Submit/Cancel

Tie Point

P/Q Pair ID

1

2

3

4

5

Reserve Load Point

Reason Code

Other Reason

Hour 1				1	2	3	4	5	0		
			P/Q Pair ID	1	2	3	4	5			
			Price	0	0						
			Quantity	0	26						
> Hour 2									0		
> Hour 3									0		
> Hour 4									0		
> Hour 5									0		
> Hour 6									0		
> Hour 7									0		
> Hour 8									0		
> Hour 9									0		
> Hour 10									0		
> Hour 11									0		
> Hour 12									0		
> Hour 13									0		
> Hour 14									0		
> Hour 15									0		
> Hour 16									0		
> Hour 17									0		

CFS-04: Cancel an Operating Reserve Normal or Standing bid

Step	User Instruction	Expected Result
1	Click on the Operating Reserve Market (OPRES) .	The "Operating Reserve (OPRES)" screen will display.




2	For a "Normal" bid type:	The input values selected for the given mandatory fields are displayed.
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Submit input data in the following mandatory fields in submission header section for OPRES:

- Bid Type = Normal
- Delivery Date (calendar pop-up on click)

The screenshot shows the "Operating Reserve (OPRES)" submission form. The "Bid Type" is set to "Normal". The "Delivery Date" is set to "2024/07/02". The "Standing Day Type" is set to "BLL". The "Market Participant" and "Resource Name" fields are empty. The "Reserve Class" is set to "10 Min Span". The "Load Data" and "Submit" buttons are visible. The "Bid/offer submission information" section shows a table with columns for Hour, P/Q Pair ID, Price, Quantity, Reserve Load Point, Reason Code, and Other Reason. The table is currently empty.

Step	User Instruction	Expected Result
	<p>Select a value from the drop-down list for the below fields:</p> <ul style="list-style-type: none"> - Market Participant - Resource type - Resource Name - Reserve Class 	
3	<p>For a “Standing” bid type:</p> <ul style="list-style-type: none"> - Bid Type = STANDING <p>Select a value from drop-down list for the below,</p> <ul style="list-style-type: none"> - Standing Day Type - Market Participant - Resource type - Resource Name - Reserve Class 	<p>The input values selected for the given mandatory fields is displayed.</p> 
4	<p>Submit hourly data in the “Bid/Offer</p>	<p>The action type for the submitting hours is cancelled.</p>

Step

User Instruction

Expected Result

Submission Information section"

1. Expand required hours
2. Select "Cancel" from Submit/Cancel drop-down

Hour	Submit/Cancel	Tie Point	P/Q Pair ID	Price	Quantity	Reserve Load Point	Reason Code	Other Reason
Hour 1	Cancel		1 2 3 4 5	1.25 1.25 21.6	0 5.5 275	0.1		
Hour 2	Cancel		1 2 3 4 5	1.35 1.35 21.6	0 5.5 275	0.1		
Hour 3						0.1		
Hour 4						0.1		
Hour 5						0.1		
Hour 6						0.1		
Hour 7						0.1		
Hour 8						0.1		
Hour 9						0.1		
Hour 10						0.1		
Hour 11						0.1		
Hour 12						0.1		
Hour 13						0.1		
Hour 14						0.1		
Hour 15						0.1		

- 5
- Click on the **SUBMIT** button in the header submission section
- Submission result pop-up displays the response "Successfully processed the OPRES cancellation."

Severity	Hour	Code	Action	Description
INFO			Cancel	Successfully processed the OPRES cancellation.

Test Cases

TC01: Verify that Operating Reserve Non-Standing (Normal) bid data can be successfully submitted for a resource

Step	User Instruction	Expected Result
1	Execute Step 1 from CFS-01 from the Common Functional Steps section.	
2	Execute Step 1 from CFS-02 from the Common Functional Steps section. Note: Physical Market is in the RT_INITIAL window.	
3	Execute Step 2, and 4-5 from CFS-02 from the Common Functional Steps section.	

TC02: Verify Operating Reserve data can be successfully submitted for Standing Bid

Step	User Instruction	Expected Result
1	Execute Step 1 from CFS-01 from the Common Functional Steps section.	
2	Execute Steps 1, and 3-5 from CFS-02 from the Common Functional Steps section.	

TC03: Verify that an error response message is displayed when the Operative Reserve submission is made when the delivery hours are in the 'RT_CLOSE' window

Step	User Instruction	Expected Result
1	Execute Step 1 from CFS-01 from the Common Functional Steps section.	
2	Execute Steps 1 from CFS-02 from the Common Functional Steps section.	

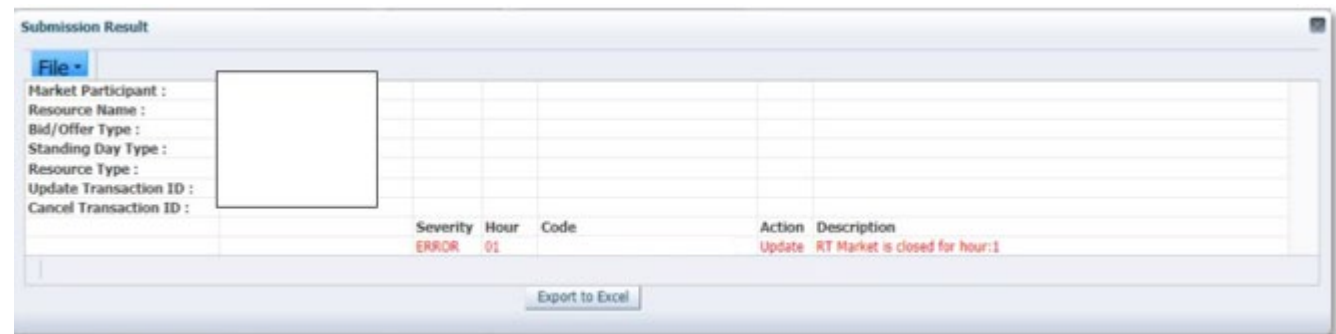
Step	User Instruction	Expected Result
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Note: Physical Market is in RT_CLOSE window for the submitting date and hours.

3	Execute Steps 2 and 4 from CFS-02 from the Common Functional Steps section.	
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4	Click on the SUBMIT button in the header submission section.	
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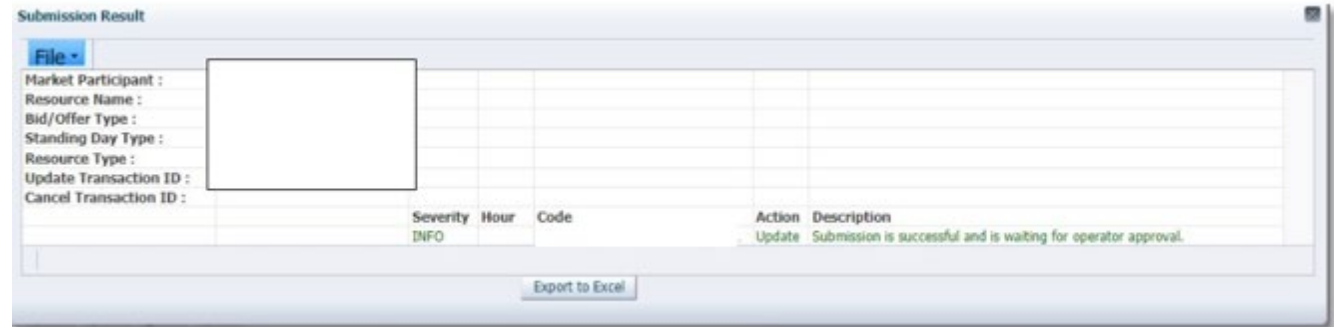
Submission result pop-up displays the response "RT Market is closed for hour:XX"



TC04: Verify the submission of Operative Reserve Data for the specified hour is in Daily Restricted Window (DA_Restricted) and there is a change in the data field values, then the submission is subject to operator approval.

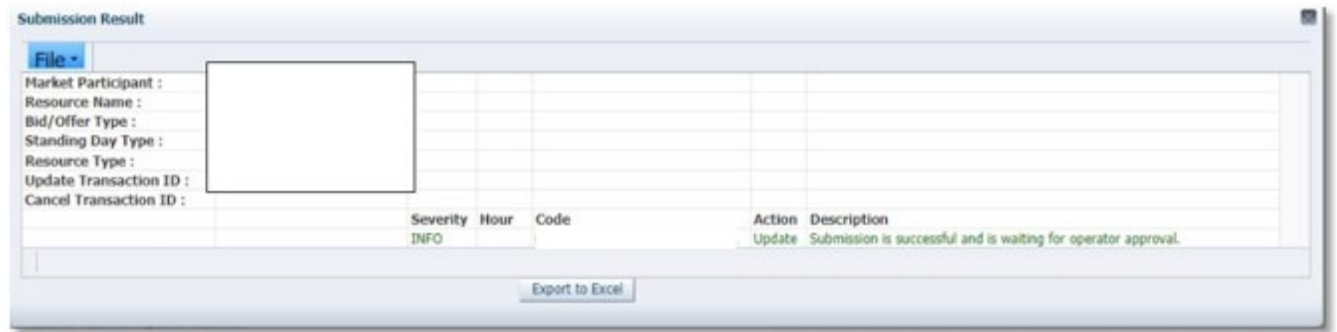
Step	User Instruction	Expected Result
1	Execute Step 1 from CFS-01 from the Common Functional Steps section.	
2	Execute Steps 1 from CFS-02 from the Common Functional Steps section. Note: Physical Market is in DA_RESTRICTED window for the submitting date and hours.	
3	Execute Steps 2, and 4 from CFS-02 from the Common Functional Steps section.	

Step	User Instruction	Expected Result
4	Click on the SUBMIT button in the header submission section	Submission result pop-up displays the response "Submission is successful and is waiting for operator approval"



TC05: Verify the submission of Operative Reserve Data: if the RT window state for the specified hour(s) is in the RT_MANDATORY window and there is a change in the data field values, then the submission is subject to operator approval.

Step	User Instruction	Expected Result
1	Execute Step 1 from CFS-01 from the Common Functional Steps section.	
2	Execute Steps 1 from CFS-02 from the	

Step	User Instruction	Expected Result
	<p>Common Functional Steps section.</p> <p>Note: Physical Market is in RT_MANDATORY window for the submitting date and hours.</p>	
3	Execute Steps 2, and 4 from CFS-02 from the Common Functional Steps section.	
4	Click on the SUBMIT button in the header submission section	<p>Submission result pop-up displays the response "Submission is successful and is waiting for operator approval."</p> 

TC06: Verify that Operating Reserve Non-Standing bid data can be successfully queried for a resource.

Step	User Instruction	Expected Result
1	Execute Step 1 from CFS-01 from the Common Functional Steps section.	
2	Execute Step 1-2, and 4 from CFS-03 from the Common Functional Steps section.	

TC07: Verify that Operating Reserve Standing bid data can be successfully queried for a resource

Step	User Instruction	Expected Result
1	Execute Step 1 from CFS-01 from the Common Functional Steps section.	
2	Execute Step 1, 3, and 4 from CFS-03 from the Common Functional Steps section.	

TC08: Verify Operating Reserve Non-Standing bid data can be successfully cancelled for a resource

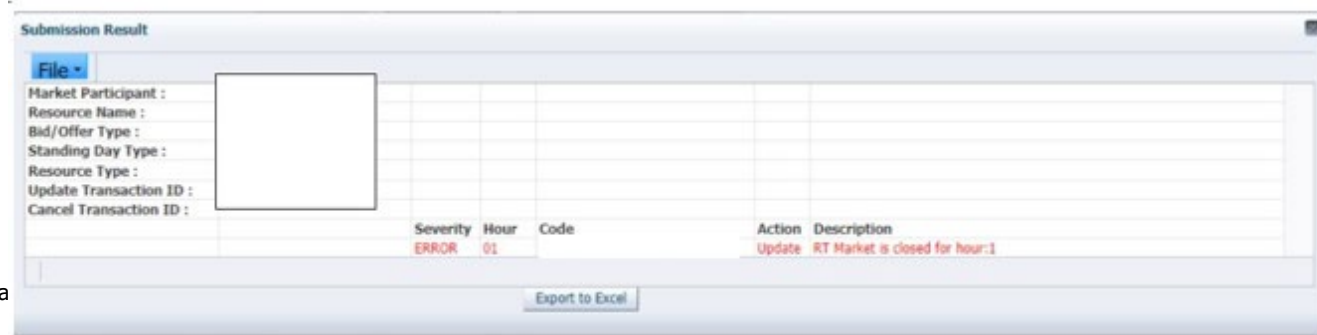
Step	User Instruction	Expected Result
1	Execute Step 1 from CFS-01 from the Common Functional Steps section.	
2	Execute Steps 1-2, and 4-5 from CFS-04 from the Common Functional Steps section.	

TC09: Verify Operating Reserve Standing bid data can be successfully cancelled for the resource type

Step	User Instruction	Expected Result
1	Execute Step 1 from CFS-01 from the Common Functional Steps section.	
2	Execute Steps 1, 3, and 4-5 from CFS-04 from the Common Functional Steps section.	

TC10: Verify that an error response is displayed for an Operating Reserve data cancellation request on hours that are in the RT_CLOSE state

Step	User Instruction	Expected Result
1	Execute Step 1 from CFS-01 from the Common Functional Steps section.	
2	Execute Steps 1 from CFS-04 from the Common Functional Steps section. Note: Physical Market is in RT_CLOSE window for the submitting date and hours.	
3	Execute Steps 2, and 4 from CFS-04 from the Common Functional Steps section.	
4	Click on the SUBMIT button in the header submission section.	Submission result pop-up displays the response "RT Market is closed for hour:XX".



TC11: Verify Operating Reserve (OR) price and offer can be successfully submitted for a GOG-eligible resource

Step	User Instruction	Expected Result
1	Execute Step 1 from CFS-01 from the Common Functional Steps section.	
2	Execute Steps 1-2, and 4-5 from CFS-02 from the Common Functional Steps section.	

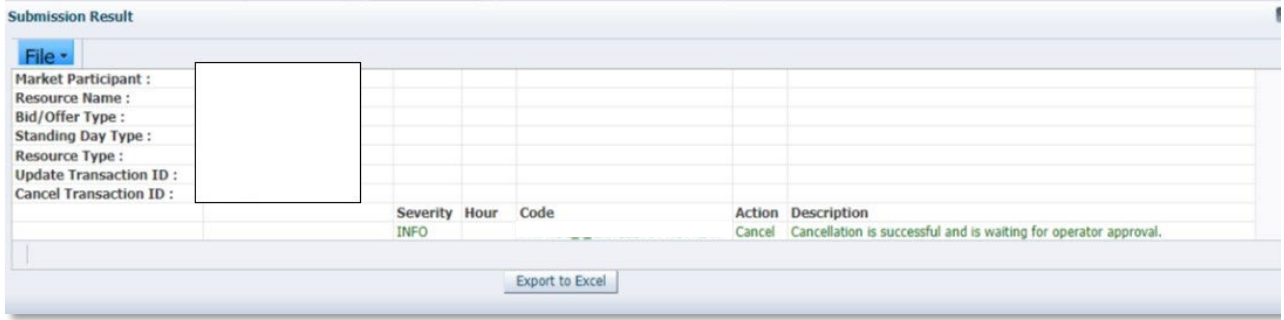
TC12: Verify that a user can query the Operating Reserve data for a GOG-eligible resource

Step	User Instruction	Expected Result
1	Execute Step 1 from CFS-01 from the Common Functional Steps section.	
	Execute Steps 1 from CFS-03 from the Common Functional Steps section.	

Step	User Instruction	Expected Result
2	Execute Steps 2, from CFS-03 from the Common Functional Steps section. (verify that the resource is GOG-eligible in the resource name field)	
	Execute Steps 4 from CFS-03 from the Common Functional Steps section.	

TC13: If the RT window for the submitted hour is in the DA_RESTRICTED state, then an OPERATING RESERVE data cancellation is subject to operator approval

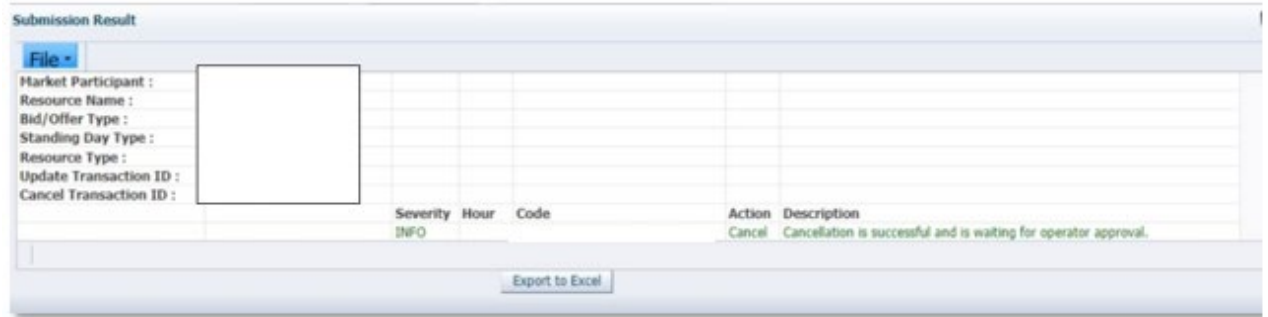
Step	User Instruction	Expected Result
1	Execute Step 1 from CFS-01 from the Common Functional Steps section.	
	Execute Steps 1 from CFS-04 from the	

Step	User Instruction	Expected Result
	<p>Common Functional Steps section.</p> <p>Note: Physical Market is in DA_RESTRICTED window for the submitting date and hours.</p>	
2	Execute Steps 2, and 4 from CFS-04 from the Common Functional Steps section.	
3	Click on the SUBMIT button in the header submission section.	<p>Submission result pop-up displays the response: "Cancellation is successful and is waiting for operator approval."</p> 

TC14: If the RT window for the submitted hour is in RT_MANDATORY state, then the OPERATING RESERVE data cancellation is subject to operator approval

Step	User Instruction	Expected Result
1	Execute Step 1 from CFS-01 from the Common Functional Steps section.	
	Execute Steps 1 from CFS-04 from the Common Functional Steps section. Note: Physical Market is in RT_MANDATORY window for the submitting date and hours.	
2	Execute Steps 2 and 4 from CFS-04 from the Common Functional Steps section.	

Step	User Instruction	Expected Result
3	Click on the SUBMIT button in the header submission section	Submission result pop-up displays the response: "Cancellation is successful and is waiting for operator approval."



Additional Resources

- [MRP Market Trials Test Plan](#)
- Energy Market Interface/Market Information Management
 - [Submitting and Revising Daily Dispatch Data](#)
 - [Submitting, Revising and Cancelling Energy Bids](#)
 - [Submitting, Revising and Cancelling Energy Offers](#)
 - [Submitting, Revising and Cancelling Import Offers and Export](#)
 - [Submitting and Revising Forebay Dispatch Data](#)
 - [Submitting, Revising and Cancelling Operating Reserve Offers](#)
 - [Submitting, Revising and Cancelling Schedules and Forecasts](#)
- [Test Cases for Connectivity Testing \(.zip\)](#)
- [Quick Take: Submission of Test Case Results and Defects in qTest](#)

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