PUBLIC

IMO_GDE_0003

GUIDE

Market Participant Graphical User Interface User's Guide

Issue 6.4

This document provides user information and tutorials for the Market Participant GUI (MPI) subsystem which acts as the gateway for all other secure web servers.

Disclaimer

The contents of these materials are prepared in draft form only for discussion and information purposes and are provided "as is" without representation or warranty of any kind. The IESO may revise, withdraw or make final these materials at any time at its sole discretion without notice to you. It is solely your responsibility to ensure that you are using up-to-date documents and information.

Deleted: *IMO*

Document ID	IMO_GDE_0003
Document Name	Market Participant Graphical User Interface User's Guide
Issue	Issue 6.4
Reason for Issue	Released for Baseline 13.1 due to upcoming changes for Internet Explorer support for the MPI and for *IMO* to *IESO* name change in response to Bill 100
Effective Date	June 1, 2005

Document Change History

Issue	Reason for Issue	Date
1.0	Released for Baseline 6.1	April 2, 2001
1.1	Released for the update to Baseline 7.0	June 26, 2002
2.0	Released for Baseline 8.0	September 25, 2002
2.1	Released for Baseline 9.0	November 28, 2002
3.0	Released for Baseline 9.0	January 15, 2003
4.0	Released for Baseline 9.1	June 4, 2003
5.0	Released for Baseline 10.1	December 10, 2003
6.0	Released for Baseline 12.0	September 1, 2004
6.2	Released for Baseline 13.1	June 1, 2005
6.3	Re-released for Baseline 13.1	June 1, 2005
6.4	Re-released for Baseline 13.1	June 1, 2005

Related Documents

Document ID	Document Title
MDP_PRO_0027	Market Manual 4: Market Operations, Part 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets
IMP_PRO_0034	Market Manual 4: Market Operations, Part 4.3: Real-Time Scheduling of the Physical Markets
MDP_PRO_0029	Market Manual 4: Market Operations, Part 4.4: Transmission Rights Auction
MDP_PRO_0033	Market Manual 5: Settlements, Part 5.5: Physical Market Settlement Statements
MDP_PRO_0034	Market Manual 5: Settlements, Part 5.3: Submission of Physical Bilateral Contract Data
MDP_PRO_0046	Market Manual 5: Settlements, Part 5.7: Financial Markets Settlement Statements

Table of Contents

List of Figures

Table of Changes

Reference (Section and Paragraph)	Description of Change
Section 2 various paragraphs	Added in references to Internet Explorer 6.0, SP1 and its use with the MPI.
Section 2.2.1	Added in subsection on Internet Explorer standard toolbars and basic functions complete with figures and instructions
Section 3	Added in references to Internet Explorer 6.0, SP1 and reference to *the PKI Operations Guide*.
Section 4	Added in subsection on Internet Explorer for MPI login functions complete with figures and instructions
All sections	Removed specific references to Netscape and replaced with 'browser'.
All sections	Replaced IMO with *IESO* for name and organizational change in response to Bill 100 where appropriate. For example market system URLs and web page logos are not changing for this release and server side SSL certificates for market systems will still indicate issuance to the IMO. These will be changed in subsequent releases.
Appendix A	Added in Appendix of known problems with using the MPI with IE and Netscape.
Section 4, Subsection 4.1.3	Added in new subsection dealing with ability to change user identity and use of different certificate identity credentials with the various browsers and operating systems.

1. Introduction

1.1 Purpose

The purpose of this document is to describe the functions, capabilities and user interface of the (MPI) *Market Participant* GUI subsystem.

1.2 Scope

This document describes the systems functionality of the *IESO*'s Market Operations System (MOS) that is available to *Market Participants* through the MPI. This system user guide does not address the wider business processes associated with the *IESO*-administered markets that the MOS is intended to support. (for which *Market Participants* are referred to the relevant *Market Manuals*). In addition, this systems guide does not address wider IT-related activities, such as those relating to the digital certificate process, that require implementation before the MOS can be used by a *Market Participant*. These 'set-up' activities are addressed in separate documentation.

Deleted: *IMO*

Deleted: *IMO*

1.3 Who Should Use This Document

The document is intended for MPI (*Market Participant* Interface) users.

1.4 Conventions

In this Guide, there are several special styles in use:

Screen Names and Menu Names – When screen and menu names are referred to in the text of this document, they will appear in BOLD Arial font.

Screen Column Headings – When the column headings on a screen are referred to in the text of this document, they will appear in *ITALIC Arial* font.

Option Names – When the options names or system status under a screen column heading are referred to in the text of this document, they will appear in *ITALIC default* font.

Field Names - When field or section names on a screen are referred to in the text of this document, they will appear in *ITALIC default* font. Names of buttons on a screen will also be in this style.

Names of Paper Documents – When the names of paper documents are referred to in the text of this document, they will appear in “QUOTES”.

1.5 How This Document is Organized

Section 2 Provides an overview of the MPI and Netscape Communicator and Internet Explorer browser.

Section 3 Where to find information on configuration issues.

Section 4 Describes each of the displays available.

Appendix A Details the currently available MSP’s (Market Scheduling Points, or Tie Points).

1.6 Associated Documents

Capability simulations and documentation for using MOS are located at the *IESO* web-site (www.ieso.ca).

Deleted: *IMO*

Deleted: theimo

Deleted: om

– End of Section –

2. Overview

This section provides an overview of the *Market Participant* GUI tool purpose and available user functions, including interfaces to other applications.

2.1 General

2.1.1 Systems

MOS (Market Operation System) is a software system that has several components, one of which is the *Market Participant* Interface, or MPI.

The MPI is supplied by the *IESO* to all *participants* as the default front-end for training, bidding and reporting for the Ontario Electricity Market.

Deleted: *IMO*

The MPI enables *Market Participants* to send and receive market information to and from the Market Operation System (MOS).

The MPI operates on a PC (or any other computer system) that can run Netscape Communicator 4.7X or Internet Explorer 6.0, SP1 and can establish a connection to MOS.

Deleted: Navigator

All *participants* who bid generation or loads are expected to have backup and bidding systems that can be used in the event of the MPI or communications systems failure.

2.1.2 MPI and Markets

There are two main parts of the *Ontario Electricity Market*.

- A *real time physical market*, which sets a spot price for *energy*, controls its dispatch, and controls payments and receipts.
- A *financial market*, which allows *Market Participants* who buy and sell *energy* at prices based on the spot price set in the physical market. This helps to reduce the level of risk by establishing financial contracts using financial instruments such as swaps.

The MPI is an interface to both markets. Traders in the financial market might use the MPI to obtain valuable information to help them make decisions about what financial contracts to put in place, and *generators* will use the MPI to handle their requirements regarding physical energy.

2.1.3 Typical uses of the MPI

Participants in the Ontario Energy Market can use the MPI to:

- Prepare and submit *bids*
- Re-bid based on changes in plant availability and operation
- Receive Market Notices sent by System Operators
- Obtain continuous updates on *market prices*, *dispatch* and *pre-dispatch schedules*
- Retrieve Financial Market Reports if relevant
- Retrieve Transmission Auction Reports if relevant
- Retrieve data on Ontario market metering and settlement values
- Upload *meter* data (HHF format)

2.2 Functions

The MPI has multiple tiers accessed through menus. It supports the following key functions:

- Bidding
- Re-bidding
- Reporting of prices, dispatch and settlement details
- Market Notices, prices, and reports

Deleted: Netscape

2.2.1 Basic Browser Functions

While this user guide is not intended to give instruction on how to use the Netscape Communicator or Microsoft Internet Explorer browsers, for users new to the browsers, it may be useful to emphasize a few key points about some of Netscape Communicator's and Microsoft Internet Explorer's basic controls and features.

Formatted: Bullets and Numbering

Netscape Communicator

Standard Netscape Toolbars

These toolbars are located at the top of the browser window. You can hide or reveal these toolbars by clicking on the toggle button on the left-hand side of the window.

Figure 2-1: Standard Netscape Toolbars Display

There are three toolbars available in the Netscape browser:

- Navigation
- Location
- Personal

The Personal toolbar is not required and can be hidden. Click *View* on the Menu bar, select the *Show* option and then uncheck *Personal Toolbar* if it is checked.

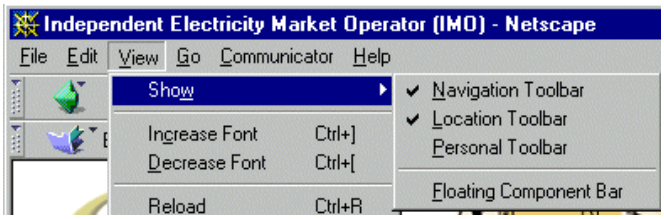

Figure 2-2: Hiding the Netscape Personal Toolbar

The Location toolbar has an input field displaying the current URL (the "name" associated with a web-site). The specific URL related to the MPI can be entered here. You can also use the *dropdown* button on the right of the Location toolbar to view and retrieve previously accessed URLs.

Figure 2-3: The Netscape Location Toolbar

The Navigation toolbar can be used as an alternative means of navigating the MPI. On the left of the toolbar are the *Back* and *Forward* buttons. The Netscape browser 'remembers' the pages accessed and the *Back* and *Forward* buttons can be used to step back or go forward to a previously accessed page. If the button is dimmed, there are no previously accessed pages available.

Deleted: B

Deleted: s

Figure 2-4: The Netscape Navigation Toolbar Back and Forward Buttons

The *Reload* button on the Navigation toolbar can be used to ensure that you have the most current version of the displayed screen.

Figure 2-5: The Netscape Navigation Toolbar Reload Button

Internet Explorer

Standard IE Toolbars

These toolbars are located at the top of the browser window. You can hide or reveal these toolbars by using the View menu and then the Toolbars options.

Figure 2-6: Standard Internet Explorer Toolbars Display

There are four toolbars available in the Internet Explorer browser:

- Standard Buttons
- Address Bar
- Links
- Yahoo! Companion

The Yahoo toolbar is not required for the MPI use and can be hidden if desired. Click *View* on the Menu bar, select the *Toolbars* option and then uncheck *Yahoo! Companion* toolbar if it is checked.

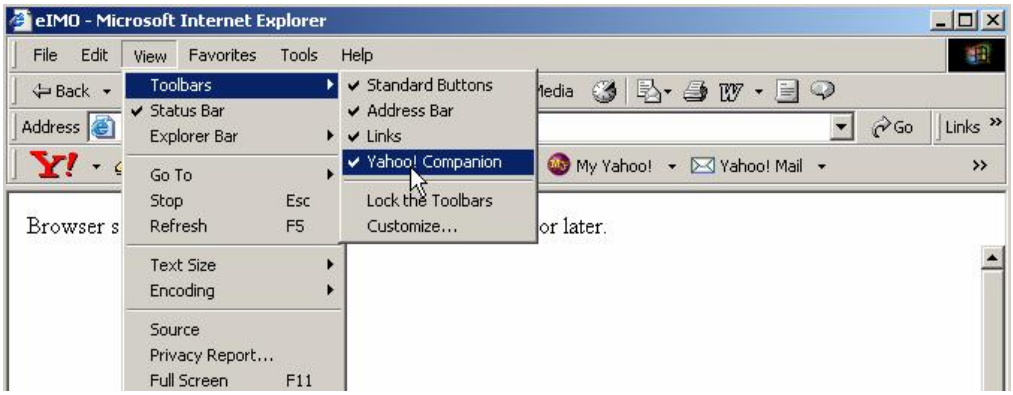

Figure 2-7: Hiding the Internet Explorer Yahoo! Companion Toolbar

The Address toolbar has an input field displaying the current URL (the "name" associated with a web-site). The specific URL related to the MPI can be entered here. You can also use the *dropdown* button on the right of the Location toolbar to view and retrieve previously accessed URLs.

Figure 2-8: The Internet Explorer Address Toolbar

The Standard Buttons toolbar can be used as an alternative means of navigating the MPI. On the left of the toolbar are the *Back* and *Forward* arrow buttons. The IE browser 'remembers' the pages accessed and the *Back* and *Forward* buttons can be used to step back or go forward to a previously accessed page. If the buttons are dimmed, there are no previously accessed pages available.

Figure 2-9: The IE Standard Button Toolbar Back and Forward Buttons

The *Refresh* button on the Navigation toolbar can be used to ensure that you have the most current version of the displayed screen.

Figure 2-10: The IE Standard Button Toolbar Refresh Button

The Links toolbar can be utilized to hold the URLs for the MPI Production and Sandbox environments for easy navigation to the MPI (this is the same as putting them in the Links folder in Favorites). To do this, when the address field contains the MPI URL, mouse click and drag on the IE browser icon in the address toolbar over to the Links toolbar. See Figure 2-11.

Figure 2-11: Copying the MPI URL to the Links Toolbar

Click on the Links toolbar dropdown list and locate the eIMO entry. Right click on the Rename option and name the link appropriately to something like *IESO* Production MPI or *IESO* Sandbox MPI as required. See Figure 2-12. This is the same as renaming links in the 'Favorites' list.

Formatted

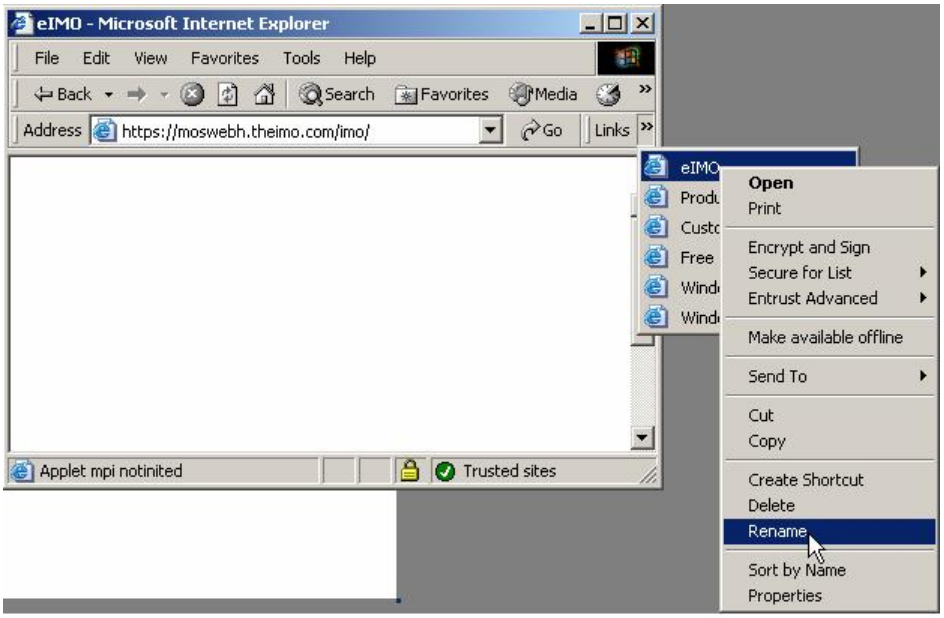

Figure 2-12: Renaming the MPI URL in the Links Toolbar

2.3 System Information

The MPI has been designed to be user friendly for *Market Participants*. When you start the MPI, you are taken to the MPI Home page in the main browser window. Two smaller fixed windows are also displayed. They are:

The **System Messages Display** window that updates when a message is sent from the *IESO*. These are issued by the System Operator in the case of significant events affecting the market and may be general or targeted at a specific *participant.*

Deleted: *IMO*

Figure 2-13: System Messages Display

The **Market Status Display** window that continually updates and displays the current status for each of the financial and physical markets for the present trading period.

The MPI will give you automatic updates each time a new market notice is issued.

Figure 2-14: Market Status Display

2.3.1 Bidding

One of the main uses of the MPI is to submit *offers* and *bids* for energy. A bid contains one entry for each resource owned or operated by the *Market Participant*. If, for example, the *participant* has six resources, there will be six separate *bids*, each with its own nominated pricing and energy quantities.

A resource can consist of one or more physical units that are capable of being controlled as a single unit. Typically, a resource will be one or more generating sets at a single power station.

Bids from the *Market Participants* are matched to *demand* forecasts to control which resource will be dispatched either to produce power or to adjust loading levels.

2.3.2 Types of bids

Using the MPI, you can create and submit three different kinds of *bids*.

- *Daily bids* - are submitted generally for the day ahead market. A daily bid can only be submitted during an Open Market time window. There are separate time windows for both Physical Markets and Financial Markets.
- *Standing Bids* - are submitted by a *Market Participant* to ensure a default bid or offer is available for a specific period of time. A Standing Bid is submitted in the same way as a Daily Bid except that the bid is identified as *Standing* and a day type is identified. This day type can be either for individual days *Mon* through *Sun* or for *ALL* days.

  Note: The above definition of 'Standing Bids' includes Energy, Operating Reserve and Schedules. *Standing Physical Bilateral Contracts bids* will be identified as 'SPBCD'.

A Standing Bid is converted at 06:00 am for the day-ahead energy market and may not overlap for the same resource. Therefore it is not possible to have a resource with a standing bid with day type *ALL* expiring on Friday and day type *SAT* for the following day.

A SPBCD Bid is converted at 00:30 am for the day ahead bilateral market and may not overlap for the same resource. Therefore it is not possible to have a resource with a standing bid with day type *ALL* expiring on Friday and day type *SAT* for the following day.

- *Rebids* - Bids may be updated as often as the *Participant* wishes as long as the constraints described for daily *bids* are adhered to.

2.3.3 Bid Acknowledgements

When a bid or offer is submitted through the MPI, the Market Information Request Processor (MIRP) decodes the bid or offer, generates a transaction ID and validates messages for the relevant bid file. An acknowledgement will be sent back from the MIRP when the bid has been received. You must inspect the acknowledgement file returned from the *IESO* to determine that the:

Deleted: *IMO*

- bid has been received
- MIRP was able to read it successfully
- Bid or Offer has been applied to MOS

You should never have to wait more than five minutes for an acknowledgement file and in most cases you should receive an acknowledgement file within three or four seconds of submitting a bid.

– End of Section –

3. Configuration

For the *Market Participant* Interface (MPI) to work properly, the user PC must be set up properly and must use either the Netscape Communicator 4.7X or Microsoft Internet Explorer 6.0, SP1 browser.

For information on setting up your PC and browser properly, see the *Participant Technical Reference Manual, Section 2, Participant Workstation Network and Security*, which is located at the *IESO* web-site (www.ieso.ca).). Also refer to the *PKI Operations Guide* regarding importing of digital certificates and installation of the required Java Runtime Environments.

Deleted: *Market Manual 6,*

Deleted: *IMO*

Deleted:

Deleted: theimo

Deleted: om

- End of Section -

4. Displays

This section describes the displays provided by the *Market Participant* GUI subsystem. For each display, it explains how the display is accessed and describes fields and buttons presented in the display.

4.1 Login Displays

4.1.1 Initial Login to MOSWEB

Use and Presentation of Browser Certificate

The *Market Participant* Interface secure web server requires strong authentication for access. Essentially this means the user must first present an *IESO* issued, browser based, digital certificate for authentication when the *IESO* secure MOS web-site is visited and the web server requires for a client side certificate to be chosen and presented back to the server.

Deleted: IMO

Deleted: *IMO*

Deleted:

Formatted: Bullets and Numbering

Netscape Communicator

If the Netscape browser digital certificate use has been configured to present the user's certificate with the *"Certificate to identify you to a web site: Ask Every Time"* setting (configuration set within the Communicator/Tools/ Security Info / Navigator menu selection), presentation of the certificate must be manually completed by the user. This is first manifested via the automatic appearance of a pop-up window similar to that shown in Figure 4-1: Sample Select a Certificate Browser Window after the URL for the *IESO* MOS Web server MPI has been typed into the browser:

Deleted: IMO

Formatted

Figure 4-1: Sample Select a Certificate, Netscape Browser Window

The user or *market participant* must then select (i.e. highlight with mouse cursor) the certificate desired for presentation to the MOS Web server for authentication from the list of Signing Key certificates that have been imported into the browser from P12 files created with the *IESO* CLS (Certificate Lifecycle) application.

Only certificates issued by the *IESO* for the particular environment (Production or Sandbox) will be available for use since the *IESO* issued client certificates must have a matching CA parent chain to the CA issued *IESO* certificate residing on the MOSWEB server. Thus *IESO* issued test certificates will not work on the production environment but will on the Sandbox system and vice versa. Once the desired certificate has been selected with the mouse cursor and highlighted, clicking on the 'Continue' button shall enable it to be presented to the MOS Web server for authentication. There may of course be only one certificate available within the user's profile and if this is true, automatic certificate selection covered below is a more appropriate method of use.

It has been strongly recommended by the *IESO* in the *Participant Technical Reference Manual, Section 2, Participant Workstation Network and Security* that the browser be configured such that each user's certificate is in a separate Netscape Communicator user profile. This is so that only one certificate is available for presentation and use during a session. Under such conditions the *"Certificate to identify you to a web site: Select Automatically"* can be used and no browser 'Select a Certificate' popup window will display and the user shall never have to go through the manual presentation step. For most users automatic certificate selection will be the preferred method and should be more user-friendly and efficient. To configure the browser for automatic certificate selection the user should select the Communicator menu then the Tools/ Security Info selection in the popup menus (or alternatively click on the padlock symbol / 'Security' button in the toolbar). The Navigator link on the left-hand side of the Security Window should be clicked on to activate the required window and field access. The user can then choose the 'Select Automatically' option (or the actual user certificate selection) for the "Certificate to identify you to a web site:" setting.

The presented certificate must be valid and officially represent that user as per the Certificate Subscriber Agreement signed by the *Market Participant.* If it is not valid (i.e. has been revoked or has expired), then access will be denied when the corresponding EPF file is presented via the MPI applet for login as described further down in this section. Successful presentation of the browser-based certificate shall result in establishment of the required SSL session and security context enabling continuity of encrypted session communications.

Deleted: *IMO*

Deleted: IMO

Formatted

Deleted: IMO

Formatted

Deleted: IMO

Deleted: *IMO*

Formatted

Formatted

Deleted: *IMO*

Deleted: *Market Manual 6,*

Deleted:

Microsoft Internet Explorer

If the IE browser digital certificate use has been configured to present the user's certificate with the *Don't prompt for client certificate selection when no certificates or only one certificate exists -Disable* (i.e. manual certificate presentation)" security setting (configuration set within the Tools/ Internet Options/Security/ Internet or Trusted Sites zone/Custom selections), presentation of the certificate must be manually completed by the user. This is first manifested via the automatic appearance of a pop-up window similar to that shown in Figure 4-2: Sample Client Authentication, IE Browser Window after the URL for the *IESO* MOS Web server MPI has been typed/selected into the browser address field. The certificate can be viewed (see Figure 4-3, IE / Windows 2000 shown, IE with Windows XP similar) with the View Certificate button to confirm the correct one is being used.

Formatted

Figure 4-2: Sample Client Authentication, IE Browser Window

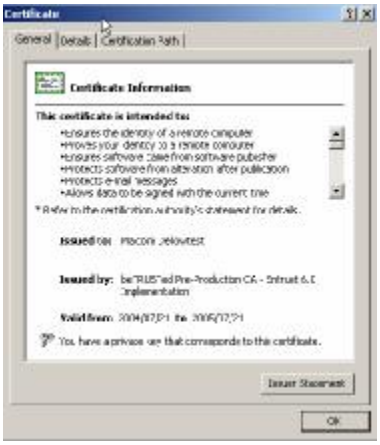

Figure 4-3: IE Browser Client Certificate Information

The user must then select (i.e. highlight with mouse cursor) the certificate desired for presentation to the MOS Web server for authentication from the list of certificates that have been imported into the browser from P12 files created with the *IESO* CLS (Certificate Lifecycle) application.

As with the Netscape browser, only certificates issued by the *IESO* for the particular environment (Production or Sandbox) will be available for use since the *IESO* issued client certificates must have a matching CA parent chain to the CA issued *IESO* certificate residing on the MOSWEB server. Thus *IESO* issued test certificates will not work on the production environment but will on the Sandbox system and vice versa. Once the desired certificate has been selected with the mouse cursor and highlighted, clicking on the 'OK button shall enable it to be presented to the MOS Web server for authentication. There may, of course, be only one certificate available within the user's profile and if this is true, automatic certificate selection covered below may be more appropriate method of use.

Since the IE browser by default has implicitly separate user profiles on a workstation, if only one *IESO* production and one *IESO* test certificate has been imported into the browser the *Don't prompt for client certificate selection when no certificates or only one certificate exists -Enable* (i.e. manual certificate presentation)" security setting may be used. See the configuration settings within the Tools/ Internet Options/Security/ Internet or Trusted Sites zone/Custom selections as defined in the *Participant Technical Reference Manual.* Since only one matching certificate for either the Production or Sandbox environment is available for presentation and use during a session, the browser 'Client Authentication' popup window will not display and the user shall never have to go through the manual presentation step.

The presented certificate must be valid and officially represent that user as per the Certificate Subscriber Agreement signed by the *Market Participant.* If it is not valid (i.e. has been revoked or has expired keys), then access will be denied when the corresponding EPF file is presented via the MPI applet for login as described further down in this section. Successful presentation of the browser-based certificate shall result in establishment of the required SSL session and security context enabling continuity of encrypted session communications.

Complete expiration of the certificate will result in failure to load the MPI applet altogether and a typical *"The page cannot be displayed error"* as shown in Figure 4-4. The reason that this occurs is that a valid SSL session cannot be established between the MOSWEB server and the client during the IE client certificate (imported p12 file) presentation and identity handshaking process. A valid SSL session must be established first in order to enable the download the MPI applet. The client certificates validity dates can be viewed upon initial presentation before hand as discussed above and shown in Figure 4-2 and Figure 4-3.

Formatted
Formatted
Formatted
Formatted
Formatted
Formatted
Formatted

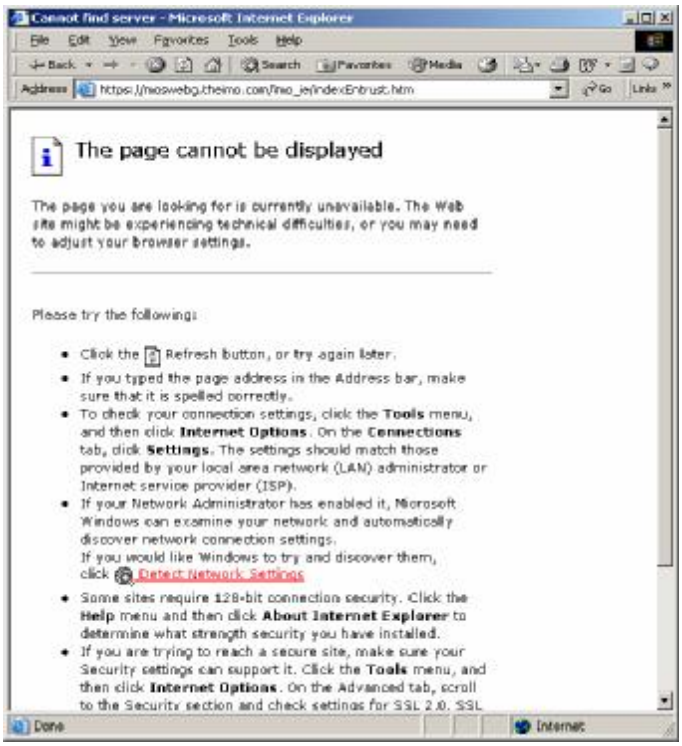

Figure 4-4 SSL Session & Login Failure due to Expired Certificate in IE

Presentation of EPF Format Certificate Within the MPI Applet

After successful presentation of the certificate (manually or automatically) from the browser database, the following page as shown in Figure 4-5: MPI Login Display will be rendered in the upper portion of the browser display upon complete download of the MOS MPI.

Deleted: Netscape

Deleted: 2

Deleted: Navigator

Deleted: D

Figure 4-5: MPI Login Display

Note: *The Participant Technical Reference Manual* describes the browser settings required and other aspects around digital certificates and network *security* for and should be referenced as a supplement to this manual.

Deleted: *Market Manual 6:*

Deleted: *Part 6.1: Participant Computer, Network & Security*

The user or *market participant* will be prompted to enter the directory path and name of the EPF file in the Profile field which must correspond to the certificate just submitted from the browser database. To present the EPF File, the directory path and EPF file name can be typed into the field directly or the file can be located by clicking on the Browse button and navigating using normal Windows methods to the directory where the EPF file is stored and selecting it. Then the correct EPF file password (chosen by the user at time of EPF creation using the IESO Certificate Lifecycle System and known only to the user) must be entered in the Password field. This password is used locally on the workstation between the applet and EPF file and is not transmitted over the Internet or network. Figure 4-6: Login Display with Selected EPF File and Password shows an example screen.

Deleted: Netscape

Deleted: *IMO*

Formatted

Deleted: 3

Figure 4-6: Login Display with Selected EPF File and Password

Once the correct password has been used and the EPF file has been validated by the MPI applet against the IESO and Certificate Authority system's current certificate revocation list (CRL) and list of active IESO system users, a number of privilege request pop-up windows will be displayed. The requested privileges in the pop-up windows must be granted in order for full MPI access to be acquired. It is advised however, that the 'Remember this decision' check box in each window should be left unchecked for security reasons so that the user is prompted to provide permissions on a current session basis.

Deleted: *IMO*

Deleted: *IMO*

Note: If the IESO systems have not yet been configured to provide system access for the user, login will fail (with a message like 'Not Found' displayed) in spite of presenting a valid certificate. Under such circumstances the user should contact the IESO's Help Centre and/or market representative to resolve the lack of system access.

Deleted: *IMO*

Deleted: *IMO*

The permissions required to be granted by the user are as illustrated in the example browser popup windows shown in Figure 4-7: File Modification Permission Grant Box through Figure 4-10: Access Other Threads Permission Grant Box: Similar purpose windows within the Internet Explorer browser may or may not display depending on the security settings chosen as described in the *Participant Technical Reference Manual.*

Deleted: 4

Deleted: 7

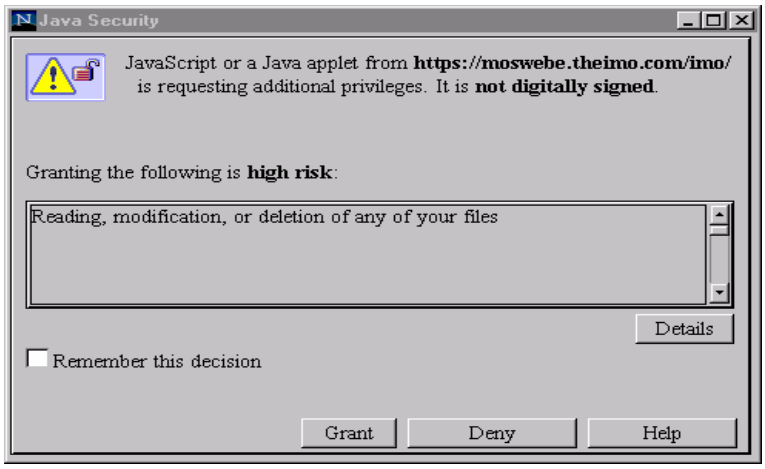

Figure 4-7: File Modification Permission Grant Box

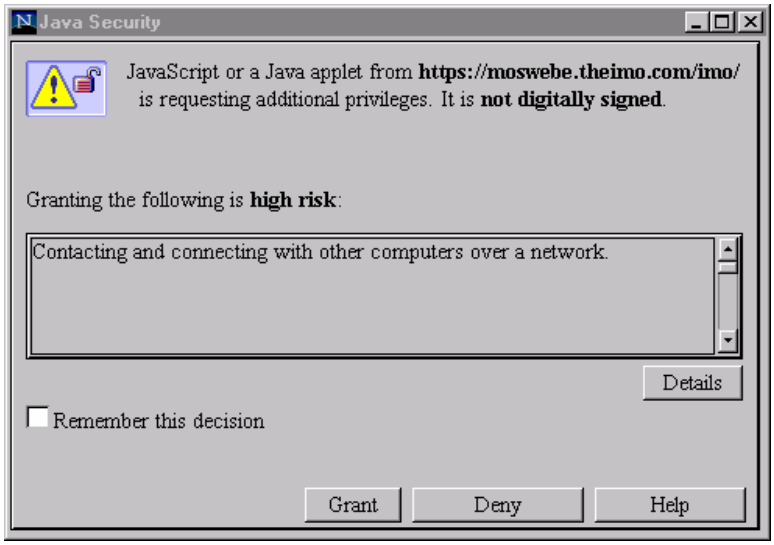

Figure 4-8: External Host Contact Permission Grant Box

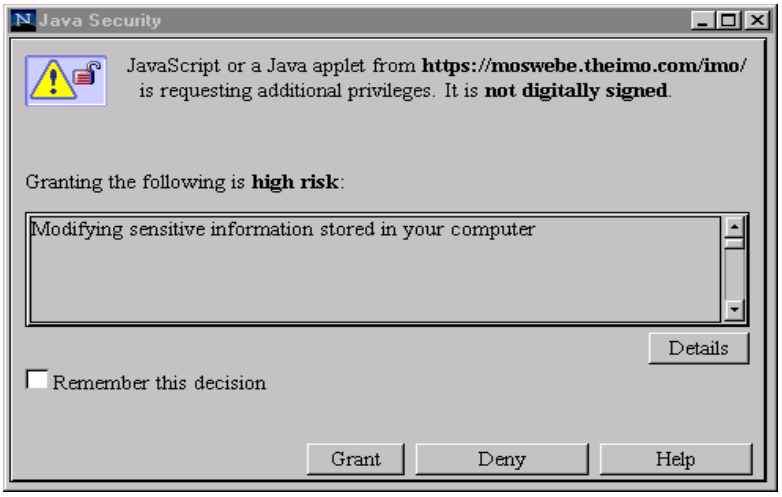

Figure 4-9: Alter Local Data Grant Box

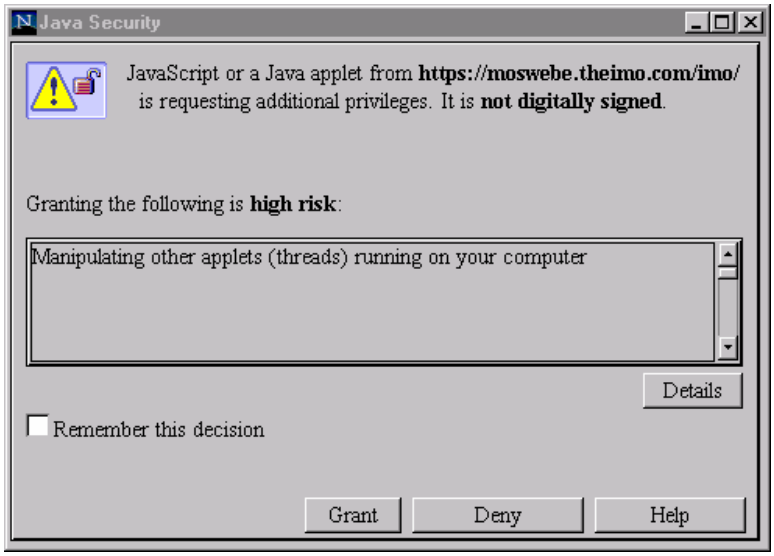

Figure 4-10: Access Other Threads Permission Grant Box

Once the *LOGIN* button is selected, this button will be relabelled 'Login In Progress' and a busy reciprocating bar icon will be displayed above it similar to Figure 4-11: Sample Login in Progress Login Display.

Deleted: 8

Figure 4-11: Sample Login in Progress Login Display

When successful login has occurred, then the *market participant* user will be given access to the MPI Home Page Display.

4.1.2 Automatic Update of Digital Certificates

Deleted: *IMO*
Formatted
Deleted: 16

The IESO issued digital certificates and associated encryption and signing keys have finite lifetimes (12 months for encryption certificates and 9 months for signing certificates). This means that certificates and keys will expire and will need updating before expiration occurs in order to keep them usable, much the same as a credit card needs replacing with an updated one. Individual subscriber certificates contained in the EPF and P12 will always be updated automatically by the MPI PKI code files when they are used on a regular basis for login to the IESO MOS web server MPI applet via the Netscape Communicator or Microsoft Internet Explorer browser. Under such circumstances, use of the Certificate Lifecycle System (CLS) is not required for update, only for initial certificate creation and recovery purposes. As a prerequisite, read write access to the user's certificate files in the directory on local workstation or server is absolutely required only by the user, who the certificates belong to. This does not provide outside parties to the *Market Participant* access to the Market Participants workstation or server. At no time will the IESO or the IESO's Certification Authority be able to gain access to the *Market Participant's* servers or workstations through the users' read/write access permissions to the directories and storage media that the certificate files exist in (or any other).

Deleted: *IMO*
Formatted
Deleted: *IMO*
Formatted
Deleted: *IMO*
Formatted

The expiry date of the private signing/ public verification keys and certificate within the current EPF and P12 files can be viewed within the Certificate Lifecycle System (CLS) as documented within the *PKI Operations Guide - section 10.7.5 Display of Certificate Content.* Unfortunately the encryption certificate lifetime information is not currently available for viewing within the IESO applications at this time. The expiry date of the signing/ public, verification key imported from the current or previous P12 file into the Netscape browser can be viewed as detailed in the following procedure.

Deleted: *IMO*
Formatted

1. Within the Netscape browser, select the Communicator menu then the Tools/ Security Info selection in the popup menus (or alternatively click on the padlock symbol / 'Security' button in the toolbar).
2. Click on the Certificates 'Yours' link on the left-hand side of the Security Window to activate the required window and field access.
3. Click on the certificate that represents the user to highlight it and then click on the View button located to the right or the certificate listing area. One may have to use a horizontal scroll bar at the bottom of the Netscape Communicator window to bring this button into view. Another window – 'View A Personal Certificate - Netscape' with the certificate info and valid dates will be activated. Figure 4-12: Viewing a Personal Certificate, Netscape Browser illustrates an example. If it is expired it will be stated in this window.

Deleted: Figure 4-9: Viewing a Personal Certificate

4. Click on the window's OK button afterwards and then the cancel button at the bottom of the Netscape browser Security window to resume normal browser use.
5. The same information can be seen in Internet Explorer as shown in Figure 4-3 and as detailed in section 4.1.1 for Internet Explorer.

Formatted: Bullets and Numbering

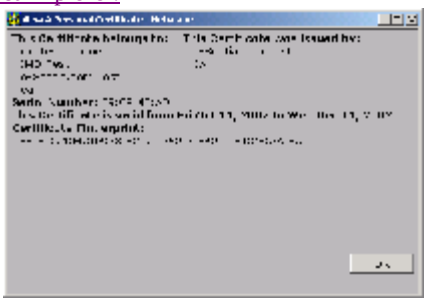

Figure 4-12: Viewing a Personal Certificate, Netscape Browser

The Market Participant Interface will handle automatic updating of an IESO issued digital certificate and its associated keys. This shall be triggered normally upon reaching 100 days before expiry of the keys and certificates. The update capability, storage and technical requirements for such at the Market participant is detailed in the *Participant Technical Reference Manual*" (PTRM), Network Security section. When a certificate is updated, an appropriate dialogue box will inform the user that their PKI certificates have indeed been updated and that they should re-import the P12 file into the browser at the earliest opportunity. This notification is illustrated in Figure 4-13: Notification of Digital Certificate Update.

Deleted: *IMO*

Formatted

Deleted: f

Deleted: Netscape

Deleted: Figure 4-10: Notification of Digital Certificate Update

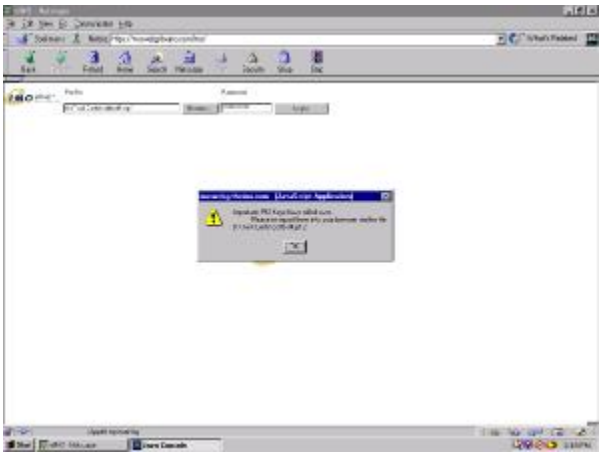

Figure 4-13: Notification of Digital Certificate Update

4.1.3 Browser SSL State and User Identity Changes

Loss of SSL Session & Re-login

On occasion it is possible for the user's browser SSL session security context to be interrupted and lost for various reasons. Under such circumstances the user will be required to represent their browser based (imported p12) certificate for re-establishment of the SSL session and security context. If the Netscape Communicator *"Certificate to identify you to a web site: Ask Every Time"* " or the Internet Explorer *"Don't prompt for client certificate selection when no certificates or only one certificate exists -Disable" security* setting as discussed in section 4.1.1 has been utilized for certificate use this will be manifested via the automatic appearance of the Netscape Communicator 'Select a Certificate' or Internet Explorer "Client Authentication" pop-up window again. Depending on the reliability of the communications over the Internet this could happen frequently or not. Multiple Client Authentication window presentation instances may also occur in IE for establishment of SSL security context for the multiple MPI windows or frames and the user will have no control over this for initial establishment of SSL security contexts. It is important under such circumstances that the same certificate be selected if multiple certificates exist within the browser. If multiple certificates have been imported into one Netscape Communicator or Internet Explorer user profile, it is entirely possible for the user to inadvertently select a different one than what was originally presented during initial login. Selecting a different browser based certificate from Netscape Communicator or Internet Explorer, as compared to the EPF file that was presented to the MPI applet and is still active in that applet session can lead to problems with a mismatched user identity for the session and the digital signatures created for uploaded transactions. The digital signature is created from the transaction data and the EPF file content while the user's ID and *Market Participant* name shown in the Workspace header frame comes from the Netscape browser certificate used to login with. Since no prompt will be presented under these circumstances for re-presenting an EPF file again it is imperative that either:

a. The user logout completely and then re-login to MOSWEB so that identity is kept consistent between the browser and MPI sessions

Or

b. The user present the same browser certificate that was presented during initial login so that the authentication and identity to MIM is kept consistent between the browser certificate and EPF file.

For most users, the whole issue of manual, repeated, re-presentation of the user's browser-based certificate and potentially incorrect choice of the wrong certificate can be completely avoided. This can be done by having only one certificate in a user profile **and** using the Netscape Communicator, *"Certificate to identify you to a web site: Select Automatically"* or the Internet Explorer *"Don't prompt for client certificate selection when no certificates or only one certificate exists -Enable" security* setting as recommended in section 4.1.1. With such a configuration the browser will use the certificate in the profile automatically to re-establish an SSL session and the user will never know it is occurring. This will also help meet the requirements of the IESO PKI trust model to a greater degree. IESO MOS Web server MPI security is still maintained (given supporting PKI identity and other PKI procedures) since the user must always present the EPF file (matching the one used browser certificate) and its' password for every initial login. The nuisance of having to represent the browser certificate repeatedly due to the problem of lost SSL session security context is completely averted.

Formatted: Bullets and Numbering
Deleted: Netscape
Deleted: Netscape
Deleted: Netscape
Deleted: Netscape
Deleted: T
Deleted: *IMO*
Formatted
Deleted: *IMO*
Formatted
Deleted: Netscape
Deleted: Netscape

Changing User Identity and SSL State with MPI Re-login

For those users who must have multiple certificates imported into the browser to represent multiple Market Participants, there are a number of potential scenarios and possibilities for controlling the use of certificates within the browser.

Netscape Users

As documented in the *PKI Operations Guide* and above it is recommended to create and use multiple Netscape user profiles, each with its own certificate. However if this is not done, it is the user's responsibility to select the correct client certificate for presentation and use with the MPI. Once the user's certificate has been selected and presented to the MOSWEB server an SSL session is established and the security context is set for that session. If the user desires to logout from the MPI and then re-login with another certificate, the browser must be shut down and restarted. Choosing to login to the MPI again even when logout from the MPI has previously returned the user to the IESO public web-site will simply and automatically re-use the browser certificate presented before. There is no mechanism available in Netscape 4.7X to manually break the SSL session security context so that the user can select and present another certificate from within the browser user profile to the MOSWEB server.

IE Users using Windows 2000 or Earlier OS

It is the user's responsibility to select the correct client certificate for presentation and use with the MPI. Once the user's certificate has been selected and presented to the MOSWEB server an SSL session is established and the security context is set for that session. If the user desires to logout from the MPI and then re-login with another certificate, the browser must be shut down and restarted. Choosing to login to the MPI again even when logout from the MPI has previously returned the user to the IMP public web-site will simply and automatically re-use the browser certificate presented before. There is no mechanism available to manually break the SSL session security context so that the user can select and present another certificate from within the browser user profile to the MOSWEB server.

IE Users using Windows XP-SP1

While it is the user's responsibility to select the correct client certificate for presentation and use with the MPI there is a mechanism in IE when used on Windows XP to clear the SSL session state and be able to use another browser certificate. Once the user's certificate has been selected and presented to the MOSWEB server an SSL session is established and the security context is set for that session. If the user desires to logout from the MPI and then re-login with another certificate, the user can clear the SSL session state and re-login to the MPI with another certificate. This is done by:

1) First logging out from the MPI but leave the browser session running. The user will be connected the IESO public web-site.
2) Choose the Tools/ Internet Options menu selections.
3) Select the Content tab.
4) Use the "Clear SSL State" button in the Certificate section of the window and use the OK button
5) Choose the MPI URL as normal.
6) Select the required certificate from the list presented for login the MPI.

Formatted: Bullets and Numbering

Formatted: Bullets and Numbering

Formatted

Formatted: Bullets and Numbering

Formatted: Bullets and Numbering

7) Complete login the to MPI as another user.

This enables the user to control use of their certificate identity credentials with the MPI.

4.1.4 Certificate Mode of Use in the MPI

There may be circumstances where communications to the Certification Authority (CA) directory server may not be possible by any *market participant* using the MPI GUI. This may occur to due planned or unplanned outages of the Certification Authority systems or outages of Internet communication infrastructure systems elsewhere that the *market participant* or the IESO has no control over that affects all users. Under these conditions the normal certificate online login mode for revocation checking against the current Certificate Revocation List located on the CA directory server will not be possible and login to the MIM system with the MPI GUI will fail with a 'directory not available' type error message. To counteract these situations, the IESO shall in addition to dealing with planned CA outage situations, continually monitor the availability of the CA directory server and under such circumstances when feasible and appropriate, centrally enable offline mode certificate use within the MPI GUI for *market participants* when the need arises. This shall enable general continuity of market systems access via the MPI GUI. At no time shall the *market participant* need to make any changes in the browser or login procedures on the client platforms and the mode of use will in general be transparent to end users. Only the Java console log in the browser will indicate that this is occurring to the *market participant.*

Deleted: *IMO*

Formatted

Deleted: *IMO*

Formatted

Deleted:

4.2 Home Page Display

The MPI Home page is displayed when the login to the secure MOS Web server is successful. This is the 'main' browser window from which you will access other parts of the MOS web-site.

During logon, in addition to the Home page window, two other windows are displayed: the Market Status Display and System Message Display. These two screens should not be closed or you will not be notified of critical system messages that you must respond to so that you can continue to work in the MPI. You may minimize these windows or click the *IESO* logo on the Home page to bring it in front of these two windows.

Deleted: Netscape

Deleted: W

Deleted:

Deleted: *IMO*

Deleted: If PKI is not being used, usually for internal testing or training, access to the MOS Web will be through HTTP access rather than HTTPS access. (Consult your systems administrator is you are unsure whether PKI is used for the designated MOS Environment you are using). Under production and Sandbox environment conditions PKI is always used. In the case of non-secure HTTP access, a Netscape security dialog box titled, Java Security, will be displayed.

Deleted: This application request MUST be granted by clicking the *Grant* button or the user will not be able to upload or download any files to or from the MPI. Not granting this request is one of the main causes of support calls concerning the MPI not functioning correctly.

4.3 Home Page Description

A sample MPI Home page is shown below. (To conserve space in this guide, screen images may be adjusted to fit and the browser controls will not be shown.)

Deleted: Netscape

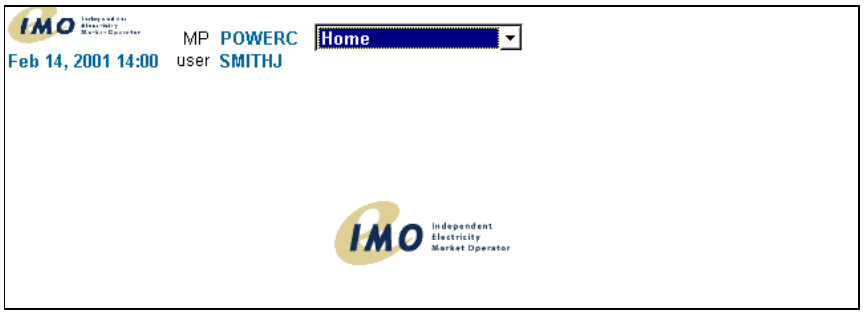

Figure 4-14: Sample Home Page Display

MP – is the identifier for the current *market participant.*

User – is the identifier for the currently logged on user.

Date/Time – is the date and time provided by the web server. It is updated every minute.

The Home page also has several controls listed in a drop down menu. Which controls you see will depend on your access authority.

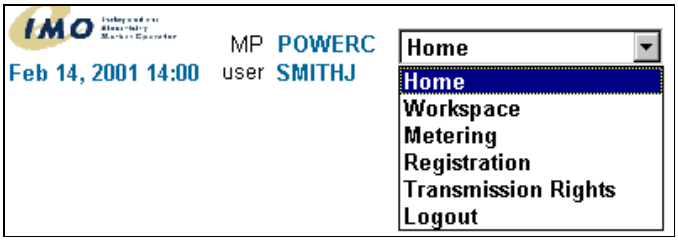

Figure 4-15: Typical Home Page Drop Down Menu

Home – returns the user to the Home page.

Workspace – takes the user to the Bid workspace where *bids* and *offers* may be entered, cancelled, updated and reports downloaded.

Logout – logs the current user off the system.

Metering, Registration, Transmission Rights – are only available to those users with access to these systems.

4.4 Market Status Display

The Market Status Display shows the user the status of both the Financial and Physical Markets. It is updated whenever there is a change in any of the market statuses.

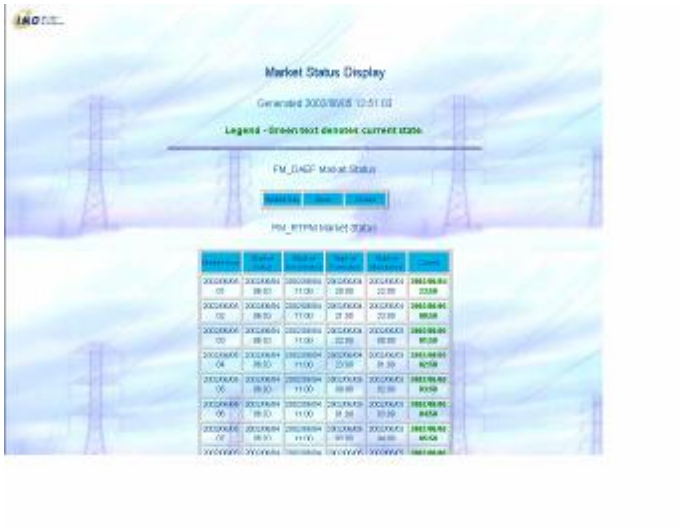

Figure 4-16: Typical Market Status Display

FM_DAEF Market Status

- Market Date (d, d+1 and d+2)
- Market Open Date/Time
- Market Close Date/Time

PM_RTPM Market Status

- Market Date/Hour (YYYY/MM/DD HH)
- Initial Window Open Date/Time
- Unrestricted Window Open Date/Time
- Restricted Window Open Date/Time
- Mandatory Window Open Date/Time

- Market Close Open Date/Time

Note: Green text denotes current market window state.

4.5 System Messages Display

The System Messages Display is the primary link between the *Market Participant* and the *IESO*.

Deleted: *IMO*

From this screen, the *Market Participant* will be notified of all system events. Some of these events are generated automatically such as report publication and availability; others are manually sent by the *IESO* such as Market Suspension, re-activation, or bid approval/rejection.

Deleted: *IMO*

There are three kinds of system messages:

1. *Normal*: These are messages displayed in **Green**.
2. *Urgent*: These messages are displayed in **Blue**.
3. *Emergency*: These messages are displayed in **Red**.

Users MUST acknowledge receipt of both the Urgent and Emergency system messages. Not doing so will prevent the user from accessing any controls on the main web page. If the web page 'freezes up', the user experiencing this must first check the System Message Display for any outstanding messages before attempting to determine if it is another issue.

The acknowledgement of an Emergency message by a user is logged. It is the responsibility of the appropriate *Market Participant* user of the MPI GUI to acknowledge an Emergency Message as quickly as possible.

4.5.1 Re-activation of Market Status and System Messages Windows

The System Messages Display may be minimized, but should never be closed. If either of the two windows are inadvertently closed, *or if the System Messages windows stops updating automatically*, they can be re-activated through the following method.

Navigate the Home page and place the mouse cursor directly to the right of the controls list drop down menu in the white screen area. Then use the right mouse-button and chose the Reload Frame selection and then choose the 'Ok' Option to the Repost form data prompt. This will cause the Market Status Display and System Message Display windows to re-initialize and actively start showing information again.

Figure 4-17: Typical System Messages Display

4.6 Market Participant Work Space Display

The *Market Participant* Work Space is the screen used to either:

- submit Physical or Financial Bids or Offers using either file templates, or HTML Web submission

or

- to retrieve Physical or Financial Bids or Offers into the web as HTML pages or to raw files downloaded to the client.

The term ***download*** is used when any information is retrieved from the Market Information Management (MIM) database.

The term ***upload*** is used when any information is submitted to the MIM database.

Only a single bid or offer can only be downloaded in HTML format at any one time. Multiple ***bids*** and ***offers*** or summaries can only be downloaded to files. This is due to the MPI only being able to render one HTML page at a time.

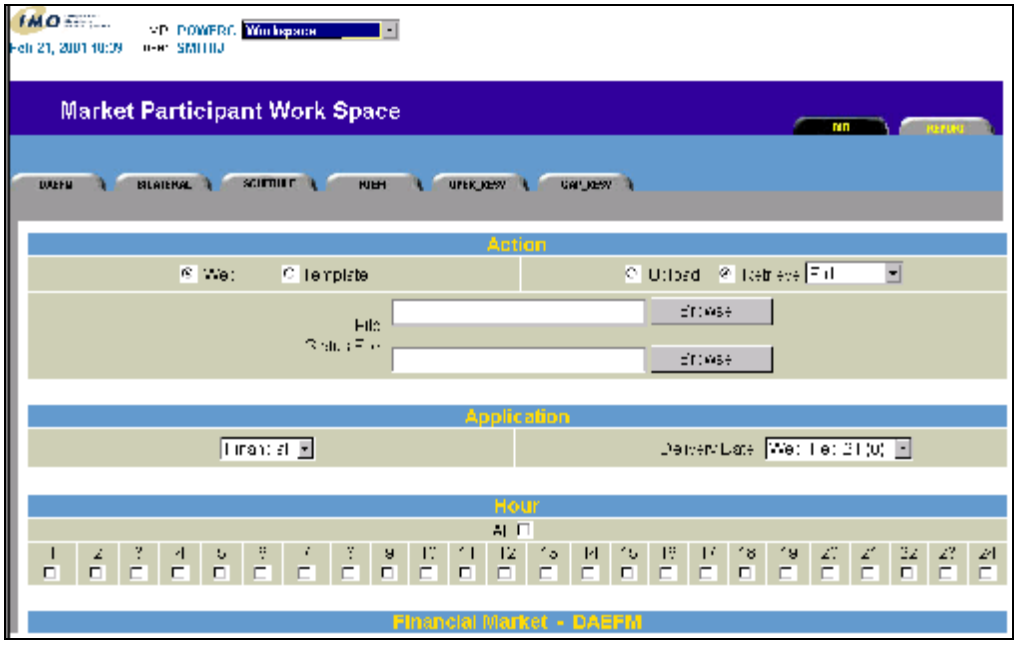

Figure 4-18: Market Participant Work Space Display

4.6.1 MPI Main Screen Access

The MPI is split into several sections that enable easy navigation.

There are two main screens that can be accessed using tabs. These tabs are

BID – that displays the *Market Participant* Work Space

REPORT – that displays the Report Work Space. The Report Work Space is covered later in this document.

Figure 4-19: Work Space Display Main Tabs

4.6.2 MPI Market Access

The market access tabs on the *Market Participant* Work Space display screens where HTML *bids* and *offers* can be submitted. Tabs are displayed depending on the your access authority. The function of each of the possible tabs is described below.

Figure 4-20: Work Space Market Access Tabs

DAEFM – provides access to the Day Ahead Energy Financial Market (DAEFM) data submission form.

BILATERAL – provides access to the Bilateral Contract Data submission form.

SCHEDULE – provides access to the Schedule Market data submission form.

RTEM – provides access to the *Real Time Energy Market* data submission form.

OPER_RESV – provides access to the *Operating Reserve Market* data submission form.

CAP_RESV – provides access to the *Capacity Reserve Market* data submission form.

4.6.3 Market Participant Work Space Sections

The *Market Participant* Work Space screen has several sections. They are:

- Action
- Application
- Hours
- Financial Market – DAEFM
- Physical Market

4.6.4 Action Section

The *Action* section is used to upload or retrieve data in HTML or file template format.

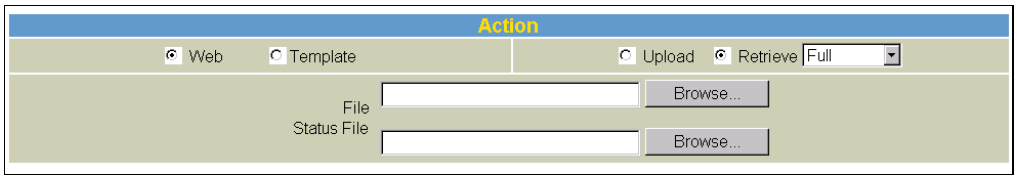

Figure 4-21: Market Participant Work Space Action Section

The controls are radio buttons, which means that the selection can either be:

- *Web* or *Template*
- *Upload* or *Retrieve*

The *Summary* drop down box to the right of the *Retrieve* radio button is used for download only.

Web – data will be uploaded from or retrieved to the web (HTML format)

Template – data will be uploaded from or retrieved to a file.

Upload – data will be uploaded to the MIM database.

Retrieve – data will be retrieved from the MIM database.

Summary – has two options in the drop down list:

- *Summary* – is used for *Retrieve* only. When selected, only summary information will be retrieved. Summary data can be downloaded to either *Web* or *Template*.

- *Full* – is used for *Retrieve* only. When selected, full information will be retrieved. A *Full Retrieve* for more than one Bid or Offer can only be to a *Template*.

File – is used to select a destination for a file when Template is selected for either Upload or Retrieve.

Browse – displays a standard windows file dialog that allows you to easily locate the required file.

Status File – is used for *Template Upload* only. It is the location of the status file for the data submission action. If no file is specified, the *Path* and *Filename* of the destination file is used with an additional extension of *.err*.

4.6.5 Application Section

The Application section determines which Market bid/offer data will be retrieved from and for the date specified in *Delivery Date*.

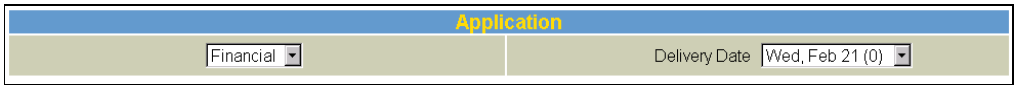

Figure 4-22: Market Participant Work Space Application Section

Market Type – There are three options to select from:

- *Financial* - only Financial Market data will be retrieved.
- *Physical* - only Physical Market data will be retrieved.
- *Both* – is used only in conjunction with the *Summary Action* type. When selected, data from both Financial and Physical Markets will be retrieved.

Delivery Date – is used to specify which delivery date is to be used to retrieve data.

4.6.6 Hour Section

The Hour section allows the user to select the hours that they wish to retrieve.

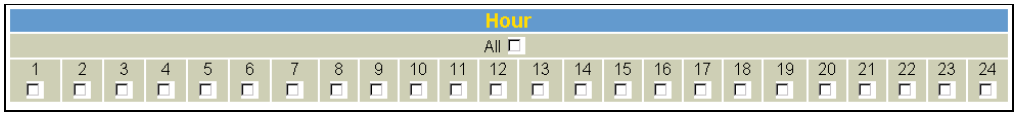

Figure 4-23: Market Participant Work Space Hour Section

All – When checked, automatically checks all 24 individual hourly checkboxes. When unchecked, automatically unchecks all 24 individual hourly checkboxes.

Hour 1-24 – When checked, only data for that hour is retrieved. Multiple boxes may be checked to retrieve data for multiple hours.

4.6.7 Financial Market Section

The Financial Market (FM) section is used to specify what FM data is to be retrieved.

Note: This section is currently not used.

Figure 4-24: Market Participant Work Space Financial Market Section

4.6.8 Physical Market Section

The Physical Market (PM) section is used to specify what PM data is to be retrieved. (To submit a bid in a particular market, use the appropriate tab.) The window is split into the five Physical Market sub types. These will be covered individually in detail.

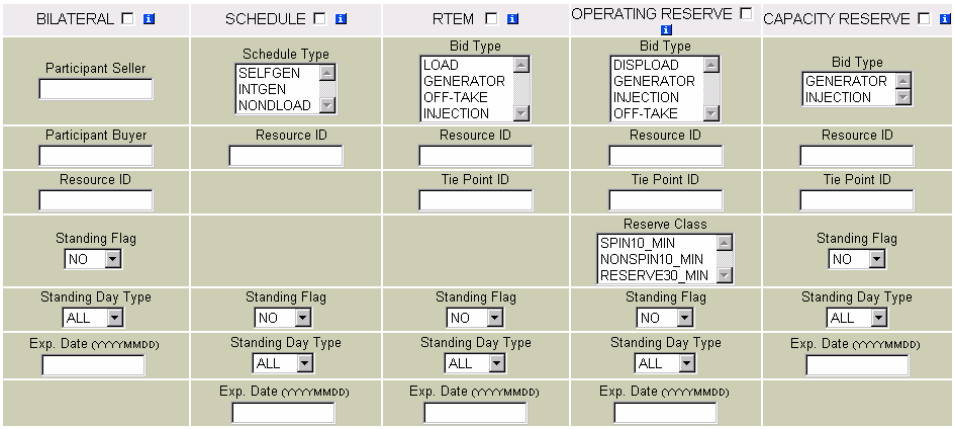

Figure 4-25: Market Participant Work Space Physical Market Section

Common Buttons and Fields

For all sub types, several buttons or fields perform the same function in each type.

Information Button

Information (i) - When selected, a separate browser window is displayed that shows the available resources that belong to the Selling *Market Participant* and can be used (if applicable) in the *Resource* field.

Deleted: Netscape

SPBCD Standing Flag

Standing Flag - indicates whether the user is choosing to download a Standing *Physical Bilateral Contract Data* (SPBCD) or a *Physical Bilateral Contract Data* (PBCD). Valid values are:

- *NO* - Only PBCD's will be retrieved.
- *YES* - Only Standing SPBCD's will be retrieved.

SPBCD Standing Day Type

Standing Day Type - This field is used only when the *Standing SPBCD Flag* is *YES*. A SPBCD must have a day type. It is used to determine which bilateral contract should be used for the specified day. Day types can be as follows:

- *ALL* SPBCD is used every day
- *MON* SPBCD is used only on Mondays
- *TUE* SPBCD is used only on Tuesdays
- *WED* SPBCD is used only on Wednesdays
- *THU* SPBCD is used only on Thursdays
- *FRI* SPBCD is used only on Fridays
- *SAT* SPBCD is used only on Saturdays
- *SUN* SPBCD is used only on Sundays

SPBCD Expiry Date

Expiry Date - is used only when the *Standing SPBCD Flag* is *YES*. If known, SPBCD with a common expiry date can be retrieved.

Standing Bid/Offer Flag

Standing Flag - indicates whether the user is choosing to download a Standing Bid or a Current Bid. Valid values are:

- *NO* - Only current *bids* and/or *offers* will be retrieved.
- *YES* - Only standing *bids* and/or *offers* will be retrieved.

Standing Bid/Offer Day Type

Standing Day Type - This field is used only when the *Standing Flag* entry is *YES*. A Standing Bid must have a day type. It is used to determine which bid should be used for the specified day. Day types can be as follows:

- *ALL* Bid/Offer is used every day
- *MON* Bid/Offer is used only on Mondays
- *TUE* Bid/Offer is used only on Tuesdays
- *WED* Bid/Offer is used only on Wednesdays
- *THU* Bid/Offer is used only on Thursdays
- *FRI* Bid/Offer is used only on Fridays
- *SAT* Bid/Offer is used only on Saturdays
- *SUN* Bid/Offer is used only on Sundays

Standing Bid/Offer Expiry Date

Expiry Date - is used only when the *Standing Flag* entry is *YES*. If known, Standing Bids with a common expiry date can be retrieved.

Bilateral Market Subtype

The Bilateral Contract Market subtype allows *Market Participants* to trade among one another for the sale and purchase of power. Specific settlement charges can be assigned to either the buyer or seller depending on the individual contracts that have been drawn up.

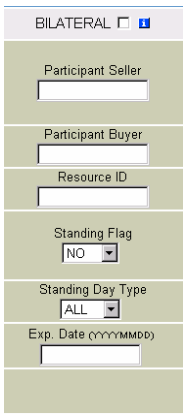

Figure 4-26: Bilateral Market Subtype Section

BILATERAL - is used to retrieve Bilateral Contract Market Data.

Participant Seller - is completed with the short name of the *Participant Seller*.

Participant Buyer – is completed with the short name of the *Participant Buyer*.

Resource – is completed with the name of the resource used as the point of settlement (it is a *TEXT* field).

Not all the above information is required to yield a result. Depending on how much information is supplied, more than one Bilateral Contract may be retrieved. For example, if only the BILATERAL check box is selected, all Bilateral Contracts for the logged in *participant* and user will be retrieved. Multiple Bilateral Contracts can only be retrieved to file (*template).*

Schedule Market Subtype

Schedules are used by *Participants* who own/operate non-dispatchable units. The schedule is submitted to the market to declare a specific MW value and *Market Clearing Price* that that unit will reduce it's power generation/consumption by if the *Market Clearing Price* reaches that specified value.

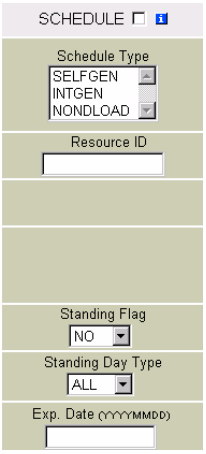

Figure 4-27: Schedule Market Subtype Section

SCHEDULE – Schedule market data will be retrieved.

Schedule Type – The user can select one of the following resource types:

- *SELFGEN* Self Scheduling Generator
- *INTGEN* *Intermittent Generator*
- *NONDLOAD* *Non-Dispatchable Load*

When any of these schedule type items are selected, resources of that specific resource type will be retrieved. Multiple selections are possible.

However if multiple schedule types are selected, download is only possible to a file.

Resource ID – is completed with a resource name for the resource type selected in the *Schedule Type* field.

Not all the above information is required to yield a result. Depending on how much information is supplied, more than one Schedule may be retrieved. For example, if only the *SCHEDULE* check box is selected, all schedules for the logged in *participant* and user shall be retrieved. Multiple Schedules may only be retrieved to file.

RTEM Market Subtype

In the *Real-Time Energy Market*, *offers* for electricity are submitted by generators for each hour of the day. Every five minutes, the *IESO* balances the *demand* for electricity with *offers* from generators and calculates a *Market Clearing Price* (or spot *market price*). This price will be uniform across Ontario, and it determines what generators are paid for wholesale electricity. *Consumers* are charged the weighted hourly average of the five-minute prices.

Deleted: *IMO*

Beginning one day ahead, the *IESO* receives *offers* to supply electric power from generators. The generators specify an amount of power and its price for each hour of the day. Offers can be revised without limit up to four hours ahead of the market hour and then by a maximum of ten percent or an absolute value as determined by the *IESO* up to two hours ahead of the market hour.

Deleted: *IMO*

Deleted: *IMO*

Consumers of electricity, or loads, can submit *bids* for electric power. These *bids* specify maximum prices that the loads are willing to pay for amounts of electricity for each hour of the day. When the cost of electricity exceeds the price in their *bids*, the customers agree that parts of their loads will be curtailed, or dispatched off, by the amounts specified in their *bids*.

On market day, conceptually, the *IESO* stacks these *offers* and *bids* in order of rising price, and then begins accepting them until the *demand* for electric power has been met across the province. This process determines the *Market Clearing Price*.

Deleted: *IMO*

The *IESO* continuously monitors Ontario's total *demand* for electricity and every five minutes, it determines a new *Market Clearing Price* to be paid to generators. The weighted hourly average of these five-minute prices is charged to wholesale *consumers* and *distributors*.

Deleted: *IMO*

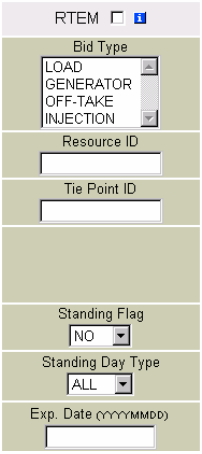

Figure 4-28: RTEM Market Subtype Section

RTEM – is used to retrieve RTEM Market data.

Bid Type – is used to select one of the following resource types:

- *GENERATOR* Generation Resources
- *LOAD* Dispatchable Load Resources
- *INJECTION* Injection Resources
- *OFF-TAKE* Off-take Resource

When any of these items are selected, resources of that specific resource type will be retrieved. Multiple selections are possible using standard Windows' controls. However that if multiple types are selected, download is then only possible to a file.

Resource ID – is completed with a resource name for the entry in the *Bid Type* field.

Tie Point ID – can be used in conjunction with resource types that are either Injection or Offtake.

NERC Tag ID – can be used in conjunction with resource types that are either Injection or Offtake. (Remove this statement) *NERC Tag* is used on bid submission only not as a choice in retrieval.)

Not all the above information is required to yield a result. Depending on how much information is supplied, more than one Energy Bid or Offer may be retrieved. For example, if only the RTEM check box is selected, all Energy Bids and Offers for the logged in *participant* and user will be retrieved. Multiple Energy Bids and Offers may only be retrieved to file.

Operating Reserve (OR) Market Subtype

The *IESO* needs a reserve of electric power that it can call upon on short notice for short periods to ensure *reliability* in the event of equipment failures. Wholesale sellers, *generators*, and *consumers* (called dispatchable loads) can contribute electricity for this purpose in the *Operating Reserve Market*. Generators offer to supply extra power at short notice when needed, and dispatchable loads agree to cut back part of their *demand*.

Deleted: *IMO*

The *IESO* will have three separate *operating reserve markets*: 10-minute synchronized reserve, 10-minute non-synchronized reserve, and 30-minute non-synchronized reserve. *Bids* and *offers* in these markets must be able to be dispatched within the indicated times. Generators participate in these *operating reserve markets* by submitting *offers* that specify amounts of power they can supply for at least one hour and the price for standing by. Loads participate by making *bids* that specify amounts of power and prices at which they are willing to cut their consumption for at least one hour.

Deleted: *IMO*

For each of the three *operating reserve markets*, the *IESO* stacks the *bids* and *offers* in order of increasing price and then selects resources based on an optimization process. It also forecasts the level of *operating reserve* required, and accepts *bids* and *offers* in the *Operating Reserve Market* to achieve the desired level. This level determines a *market clearing price* for *operating reserve** that all accepted *offers* and *bids* are paid, regardless of whether the reserve is actually used. The accepted *offers* and *bids* are essentially stand-by payments.

Deleted: *IMO*

If an event occurs that requires power from the *Operating Reserve Market*, the *IESO* dispatches the least cost *operating reserve* based on the *energy* prices offered and bid into the *Energy* Market. The dispatched generators and loads are paid according to that lowest *energy* cost.

Deleted: *IMO*

Note: In practice, the *market-clearing price* for *operating reserve* will be determined jointly with the *real-time energy market* clearing process.

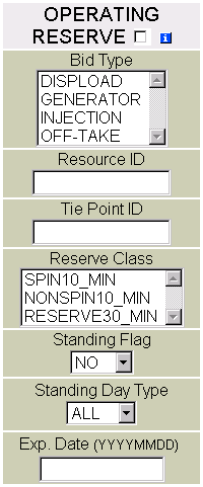

Figure 4-29: Operating Reserve (OR) Market Subtype Section

Operating Reserve – retrieves the OR Market Data..

Bid Type - The user can select one of the following resource types:

- *GENERATOR* Generation Resources
- *DISPLOAD* Dispatchable Load Resources
- *INJECTION* Injection Resources
- *OFF-TAKE* Offtake Resource

When any of these items are selected, resources of that specific resource type will be retrieved. Multiple selections are possible using standard Windows' controls. If multiple types are selected, download is only possible to a file.

Resource ID – is completed with a resource name for the resource types entered in the *Bid Type* field.

Tie Point ID - The Tie Point ID may be used in conjunction with resource types that are either Injection or Offtake.

Reserve Class - The user can select one of the following reserve classes:

- *SPIN10_MIN* 10 Minute Spinning OR
- *NONSPIN10_MIN* 10 Minute Non Spinning OR
- *RESERVE30_MIN* 30 Minute OR

When any of these items are selected, resources of that specific resource type will be retrieved. Multiple selections are possible using standard windows controls.

If multiple types are selected, download is only possible to a file.

All the above information is not required to yield a result. Depending on how much information is supplied, more than one OR Bid or Offer may be retrieved.

For example, if only the *OPERATING RESERVE* check box is selected, all *Operating Reserve Bids* and *Offers* for the logged in *participant* and user will be retrieved. Multiple OR *Bids* and *Offers* can only be retrieved to file.

Capacity Reserve (CR) Market Subtype

Note: This subtype is currently not used.

4.7 HTML Bid Submission Forms

4.7.1 Introduction

Users can access the HTML Bid Submission forms by using the tabs at the top of the *Market Participant* Work Space. These HTML forms allow the user to submit individual *bids* and *offers* for each market type to MIM (Market Information Management).

HTML results from queries submitted from the *Market Participant* Work Space are also displayed in these HTML Bid Submission forms.

Each Bid Submission form is broken into 3 sections:

- *Bid Information*
- *Formulae*
- *Bid Data*

Bid Information – This section is the equivalent of the Bid Header and contains text fields pertaining to each of the Bid Header fields for that specific market type.

Formulae – This section enables the user to quickly enter multiple hours using the same information. The *Capacity Reserve* Bid Submission Form does not contain a Formulae section.

Bid Data – This section is the equivalent of the Bid Body and contains fields pertaining to each of the Bid Body fields for that specific market type.

There is one Bid Submission form for each of the six Market types:

- *DAEFM*
- *Bilateral*
- *Schedule*
- *RTEM*
- *Operating Reserve*
- *Capacity Reserve*

Standard Buttons and Fields

For all or some of these forms several fields or buttons perform the same function:

Information (i) - When selected, a separate browser window is displayed that shows the available resources that can be used in the Resource field (for Bilateral Contracts, only resources belonging to Selling *Market Participant* will be displayed).

Deleted: Netscape

Though Standing Bilateral Contract information is not shown here separately, it can also be applied from Section 4.6.8 Physical Market.

Standing Flag - indicates whether the user is choosing to download a Standing Bid / SPBCD or a Current Bid / PBCD. Valid values are:

- *NO* - Only current / *offers* / / *PBCDs* will be retrieved.
- *YES* - Only standing *bids* / *offers/ SPBCDs* will be retrieved.

Standing Day Type - This field is used only when the *Standing Flag* entry is *YES*. A Standing Bid must have a day type. It is used to determine which bid should be used for the specified day. Day types can be as follows:

- *ALL* Bid/Offer/SPBCD is used every day
- *MON* Bid/Offer/SPBCD is used only on Mondays
- *TUE* Bid/Offer/SPBCD is used only on Tuesdays
- *WED* Bid/Offer/SPBCD is used only on Wednesdays
- *THU* Bid/Offer/SPBCD is used only on Thursdays
- *FRI* Bid/Offer/SPBCD is used only on Fridays
- *SAT* Bid/Offer/SPBCD is used only on Saturdays
- *SUN* Bid/Offer/SPBCD is used only on Sundays

Expiry Date - is used only when the *Standing Flag* entry is *YES*. Please note that the user should allow one day for the conversion of the expiry day. Thus, if the user wants the bid/SPBCD to be in effect until the day X, he must enter the expiry date = X – 1 (X minus one.)*Action* - can be one of the following values:

- *SUBMIT* Data is to be submitted to MIM as a new Bid/PBCD or as an Update to an existing bid/PBCD,

OR

- *CANCEL* Data is to be cancelled in the MIM database.

Resource ID – is completed with a Resource Name for the resource types entered. This field is not on all screens.

Hour - indicates hours for which data will either be submitted or cancelled. The *All* check box allows you to check, or uncheck all hours.

4.7.2 DAEFM Bid Submission Form

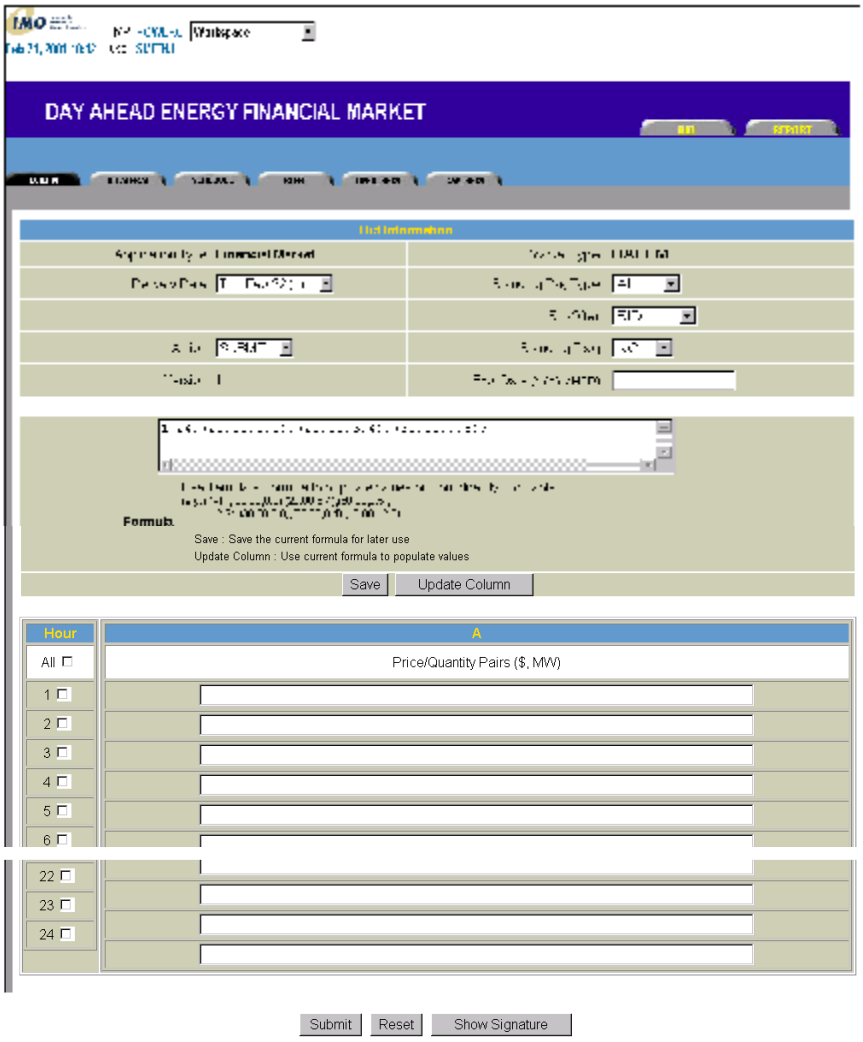

Figure 4-30: Sample DAEFM Bid Submission Form

Note: The Day Ahead Energy Forward Market is currently not available.

4.7.3 Bilateral Contract Data Submission Form

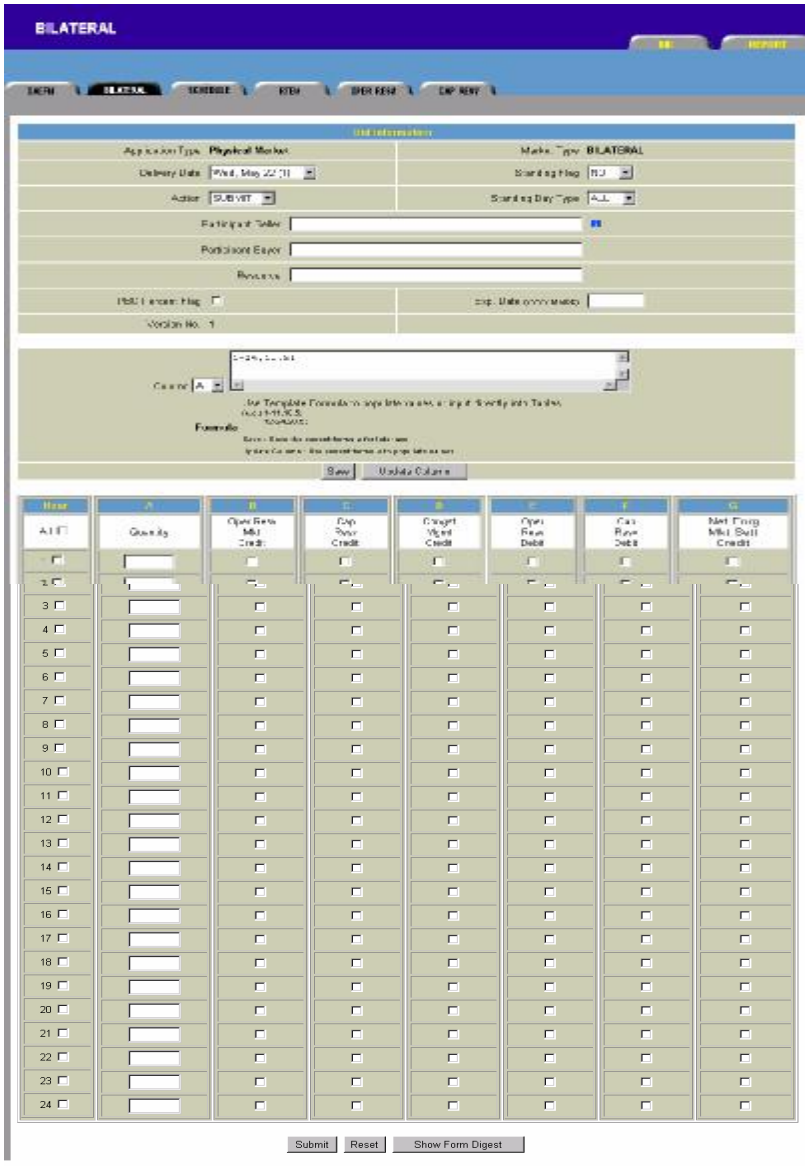

Figure 4-31: Sample Bilateral Contract Data Submission Form

(See section 4.7 for the definition of common fields not covered in this section.)

Participant Seller – is the Short Name of the Participant Seller.

Participant Buyer – is the Short Name of the Participant Buyer.

Resource - is the name of the Resource used as the Point of Settlement.

PBC Percent Flag - when this flag is checked, The Commercial Reconciliation System (CRS) will ignore all absolute PBCD quantities and will use 100% of the allocated metering quantities at the location identified by the *Delivery Point* ID. However, the user must still check the applicable hours and enter non-zero, positive values in the Quantity column. These values are strictly a placeholder and will be overwritten by the allocated metering quantities.

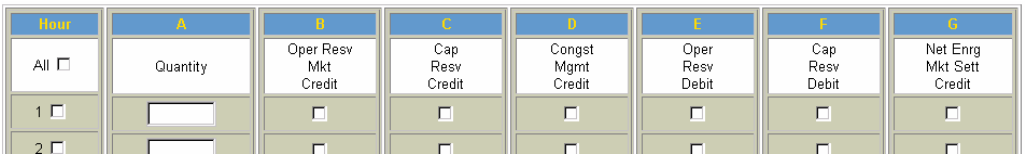

Figure 4-32: Bilateral Contract Data Submission Form Fields

(A) - Quantity indicates the amount of *energy* in MW allocated as a Bilateral Contract for that hour.

(B) - Operating Reserve Settlement Credit indicates that ORSC Uplift charges will be allocated to the *Participant Seller*. This is *optional*.

(C) - Capacity Reserve Settlement Credit indicates that CAPRSC Uplift charges will be allocated to the *Participant Seller*. This is *optional*.

(D) - Congestion Management Settlement Credit indicates that CMSC Uplift charges will be allocated to the *Participant Seller*. This is *optional*.

(E) - Operating Reserve Shortfall Settlement Debit indicates that ORSSD Uplift charges will be allocated to the *Participant Seller*. This is *optional*.

(F) - Capacity Reserve Shortfall Settlement Credit indicates that CRSSD charges will be allocated to the Participant Seller. This is optional.

(G) - Net Energy Market Settlement Credit indicates that NEMSC charges will be allocated to the *Participant Seller*. This is *optional*.

4.7.4 Schedule Bid Submission Form

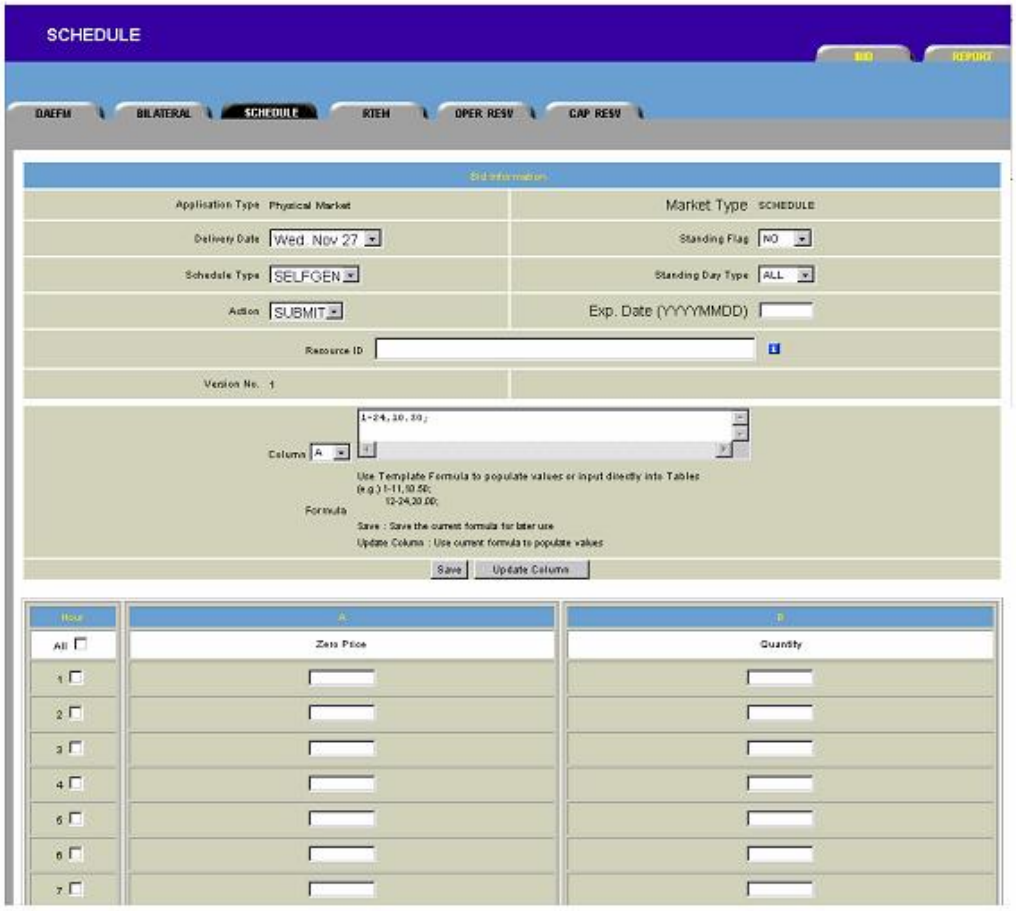

Figure 4-33: Sample Schedule Bid Submission Form

(See section 4.7 for the definition of common fields not covered in this section.)

Schedule Type – is used to select one of the following resource types:

- *SELFGEN* Self Scheduling Generator
- *INTGEN* *Intermittent Generator*
- *NONDLOAD* *Non-Dispatchable Load*

When any of these items are selected, resources of that specific resource type will be retrieved. Multiple selections are possible using standard windows controls. If multiple types are selected, download is only possible to a file.

(A) – Zero Price indicates the Price in $ that the Unit will reduce its *Energy* usage to zero.

(B) – Quantity indicates the Quantity in MW by which the Unit will reduce its energy.

4.7.5 RTEM Bid Submission Form

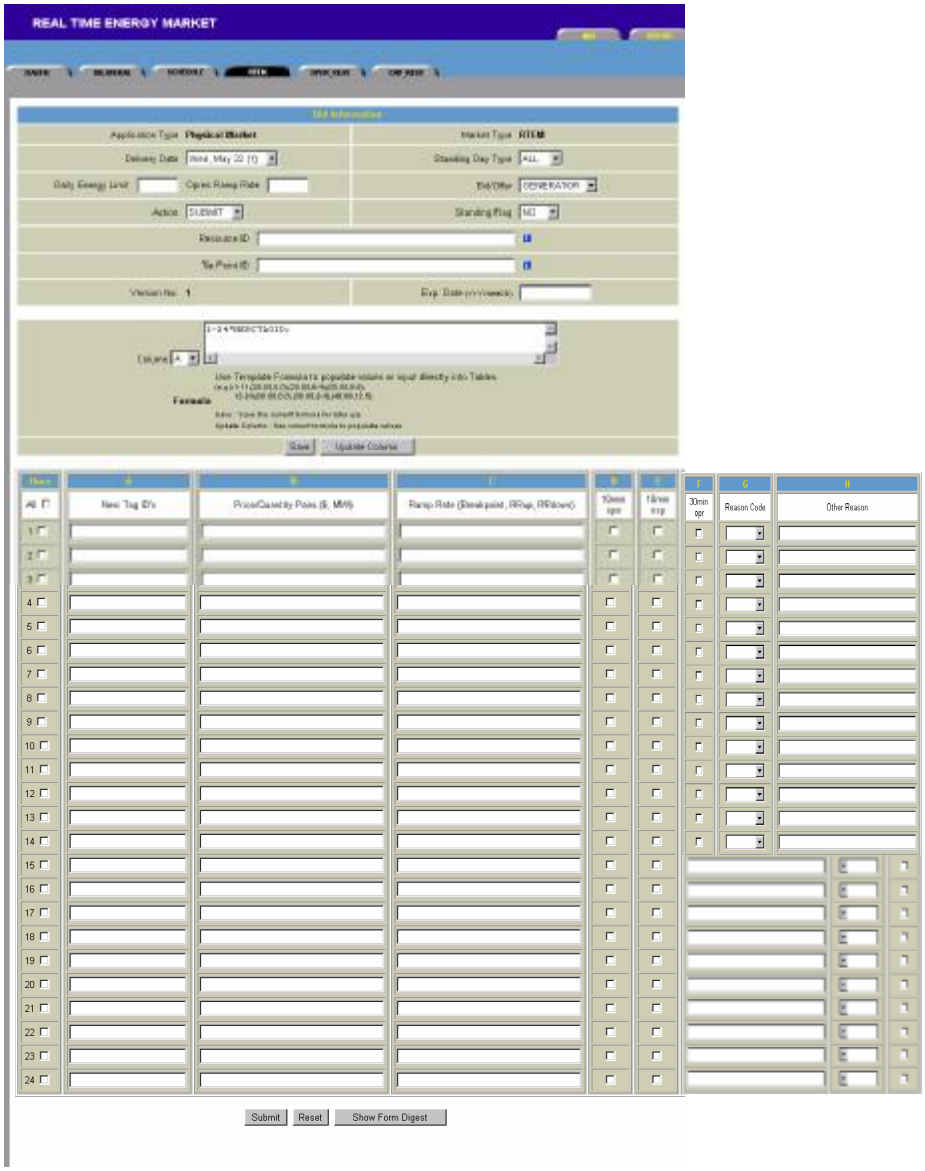

Figure 4-34: Sample RTEM Bid Submission Form

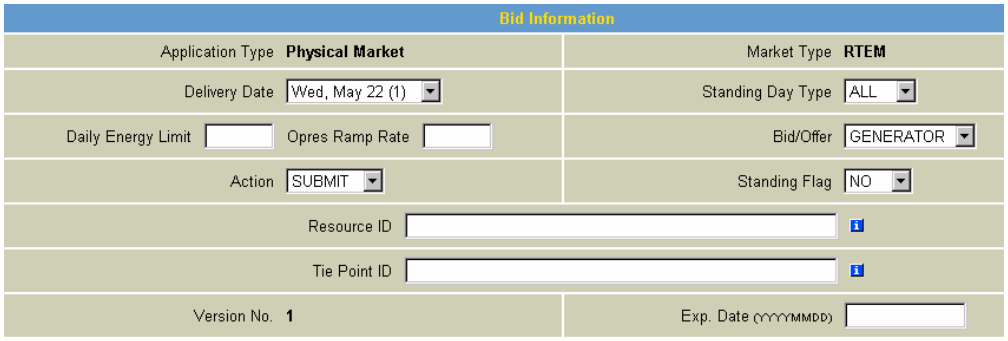

Figure 4-35: RTEM Bid Submission Form Header Details

(See section 4.7 for the definition of common fields not covered in this section.)

Daily Energy Limit – indicates the maximum *energy* limit for the *bid* or *offer*.

Operating Reserve Ramp Rate - indicates the ramp rate to be used if a corresponding *Operating Reserve Bid* is to be submitted.

Bid/Offer – is used to select one of the following resource types:

- *GENERATOR* Generation Resources
- *LOAD* Dispatchable Load Resources
- *INJECTION* Injection Resources
- *OFF-TAKE* Offtake Resource

Figure 4-36: RTEM Bid Submission Form Fields

Tie Point ID - can be used in conjunction with resource types that are either Injection or Offtake.

(A) - NERC Tag ID - is used in conjunction with resource types that are either Injection or Offtake

(B) - Price-quantity Pairs ($, MW) is where *Energy Bids* and *Offers* are entered.

(C) - Ramp Rate (Breakpoint, RRup, RRdown) is where the *Energy* Ramp Rates are entered.

(D) - 10 Min Spin. – This field is redundant.

(E) - 10 Min Non Spin. – This field is redundant.

(F) - 30 Min OR. – This field is redundant.

(G) - Reason Code is used to supply a valid reason code if the *Bid*/*Offer* is submitted within the 4-2 hour mandatory and restricted window. These reason codes are as follows:

- FO
- FD
- ERPO
- LRPO
- OTHER

If the OTHER Reason Code is selected, a Free Text Reason must be entered in *Other Reasons*.

(G) - Other Reason is used to provide a valid reason if the *bid*/*offer* is submitted in the 4-2 hour restricted window and the *Reason Code* (*F*) is *OTHER*.

4.7.6 Operating Reserve Bid Submission Form

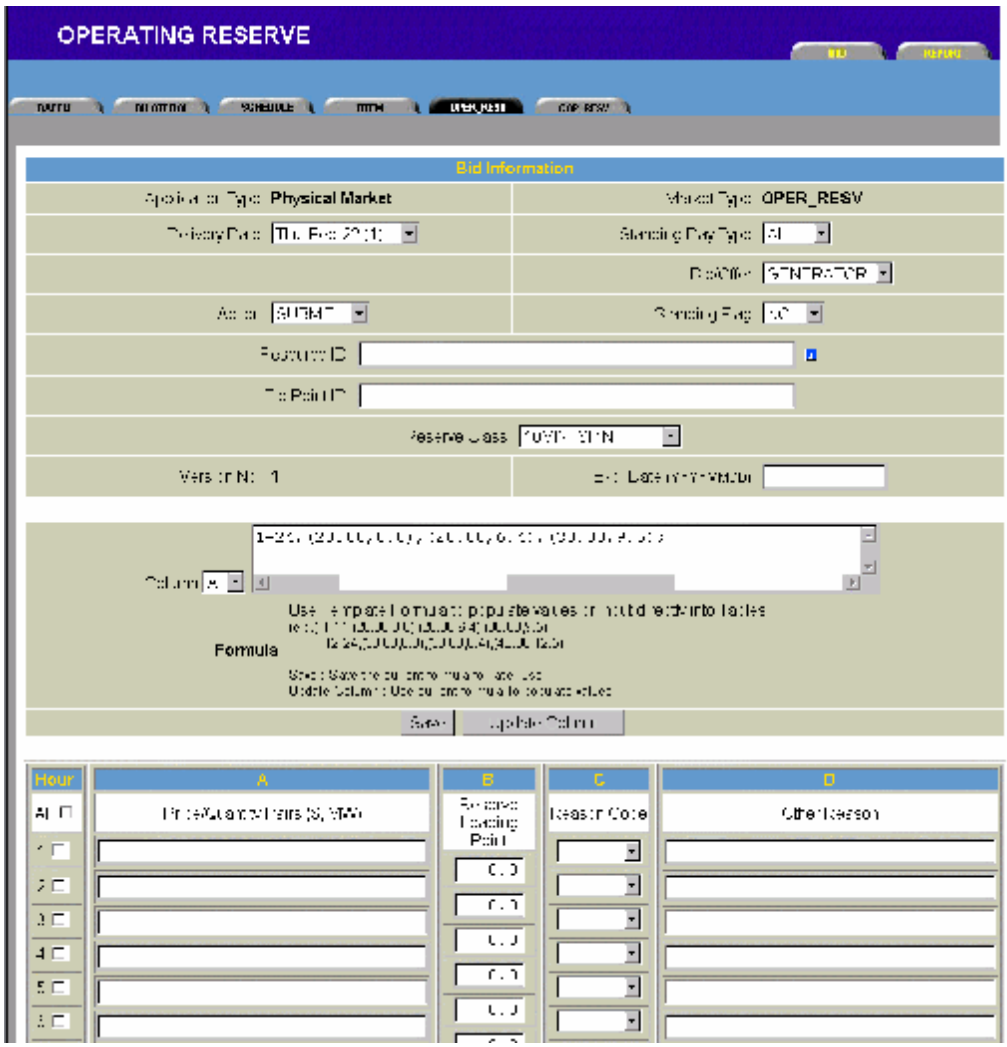

Figure 4-37: Sample Operating Reserve Bid Submission Form

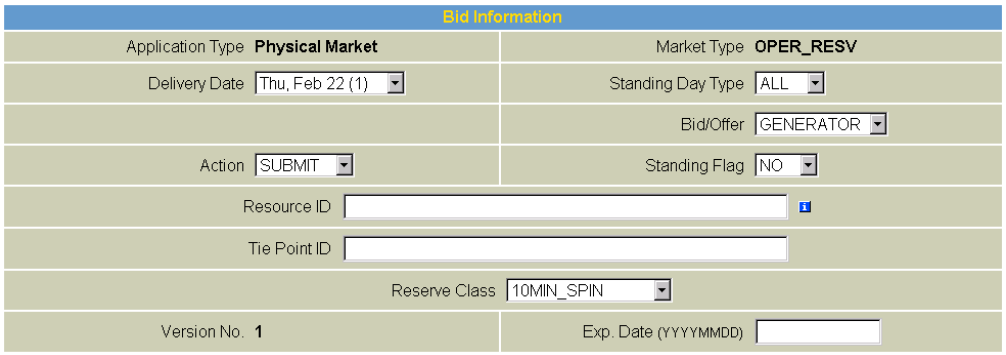

Figure 4-38: Operating Reserve Bid Submission Form Header Details

(See section 4.7 for the definition of common fields not covered in this section.)

Bid/Offer - The user can submit/cancel one of the following resource types:

- *GENERATOR* Generation Resources
- *DISPLOAD* Dispatchable Load Resources
- *INJECTION* Injection Resources
- *OFF-TAKE* Offtake Resource

Tie Point ID – can be used in conjunction with resource types that are either Injection or Offtake.

Reserve Class - The user can submit/cancel one of the following reserve classes:

- *SPIN10_MIN* 10 Minute Spinning OR
- *NONSPIN10_MIN* 10 Minute Non Spinning OR
- *RESERVE30_MIN* 30 Minute OR

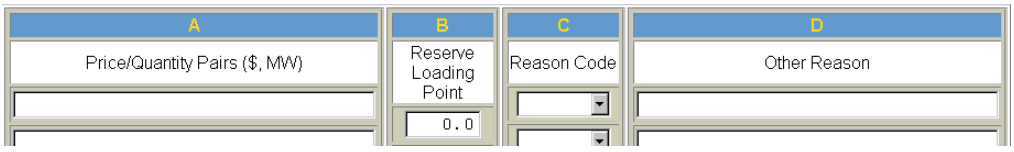

Figure 4-39: Operating Reserve Bid Submission Fields

(A) - Price-quantity Pairs ($, MW) is where *Energy Bids* and *Offers* are entered.

(B) - Reserve Loading Point indicates the Reserve Loading Point for that particular hour of the *Operating Reserve Bid* or *Offer*.

(C) - Reason Code is used to supply a valid reason code if the *Bid*/*Offer* is submitted within the 4-2 hour restricted window.

The reason codes are:

- FO
- FD
- ERPO
- LRPO
- OTHER

If OTHER Reason Code is selected, a free text reason must be entered in *Other Reasons*.

(D) - Other Reason is used to provide a valid reason if the bid/offer is submitted in the 4-2 hour restricted window and the *Reason Code* (*F*) is *OTHER*.

4.7.7 Capacity Reserve Bid Submission Form

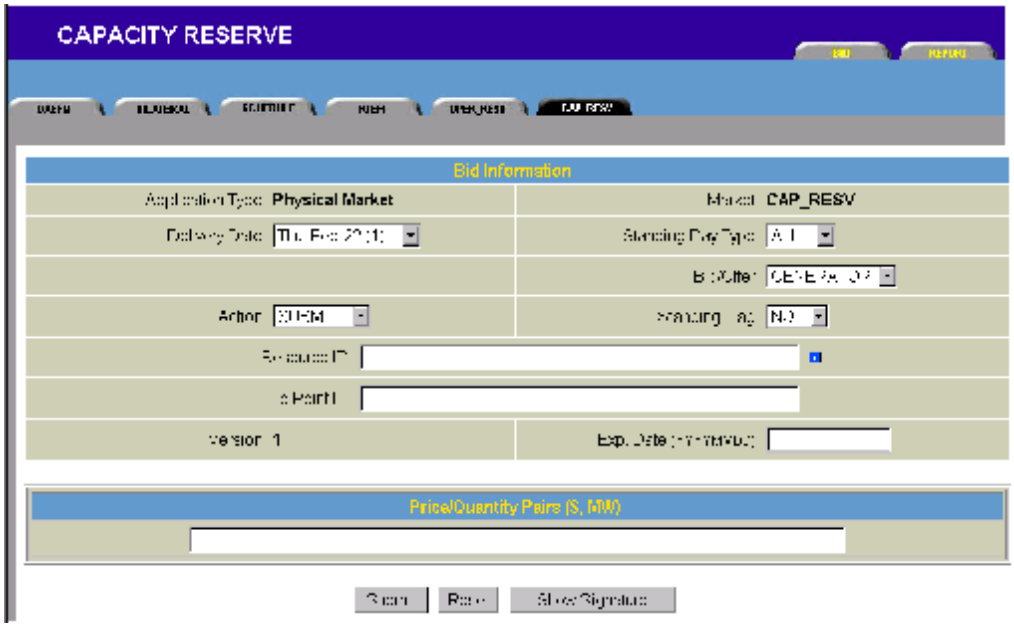

Figure 4-40: Sample Capacity Reserve Bid Submission Form

Note: The *Capacity Reserve Market* is currently not available.

4.8 Report Pages

The report pages are accessible by clicking the *Report* tab on the *Market Participant* Work Space. Each report has its own tab. Details of each report are contained in the "*Participant Technical Reference Manual*" (PTRM) located on the *IESO* web site (www.ieso.ca).

Deleted: *IMO*
Deleted: theimo
Deleted: om

Figure 4-41: Market Participant Work Space Report Tab

Available reports are split into individual market and application types. These market and application types are:

AMP – (All *Market Participants*) Any Report that is NOT classed as public, but should be available to all *Market Participants.*

FM – (Financial Market) MP specific Financial Market Reports.

PM – (Physical Market) MP specific Physical Market Reports.

SETTLEMENT – Commercial Reconciliation Settlement Reports. MP specific CRS Statements.

INVOICE – Financial and Physical Invoices. MP specific Market Invoices.

ACTIVITY – Financial and Physical Statements of Activity. MP specific Statements of Activity.

TR – (Transmission Rights Auction). MP specific Transmission Rights Auction results.

ADHOC – AMP/MP specific ADHOC reports.

Most of the reports in the MPI can either be downloaded as a Text File or displayed in the web in HTML format. In most cases, all that is required from the user is the date of the report.

The *File Name* field is used to download a template to a file.

4.8.1 AMP Report Tab

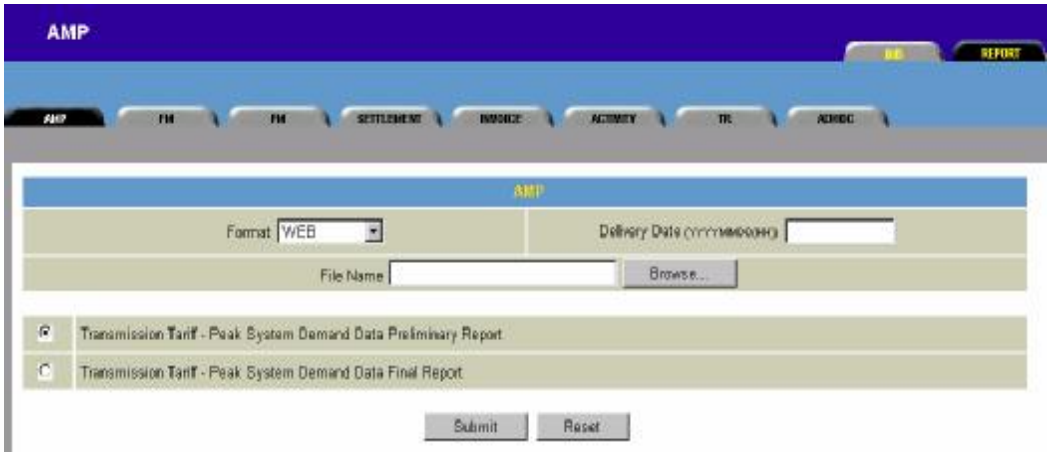

Figure 4-42: AMP Report Tab Display

AMP reports can either be downloaded to a file in ASCII text format or displayed on the web in HTML format.

To request a report, enter the date of the report in the format YYYYMMDD in the *Delivery Date* field.

Select a report by clicking the appropriate radio button to the left of the report name and click *Submit*.

4.8.2 FM Report Tab

Figure 4-43: FM Report Tab

Financial Market reports can either be downloaded to a file in ASCII text format or displayed on the web in HTML format.

To request a report, enter the date of the report in the format YYYYMMDD in the *Delivery Date* field. The date of the report corresponds to the Financial Market Auction date in question.

4.8.3 PM Report Tab

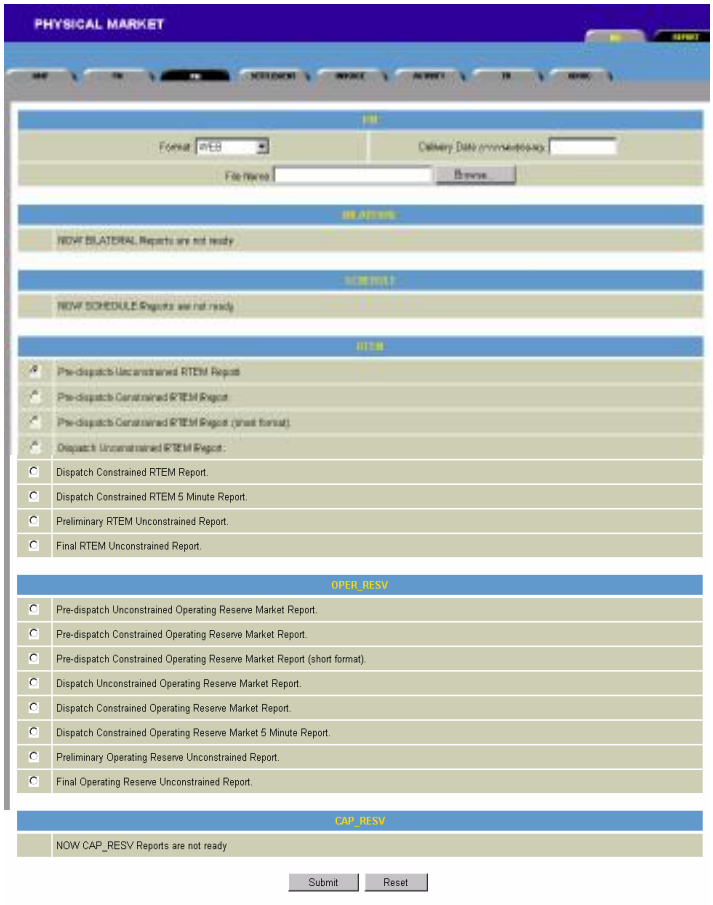

Figure 4-44: PM Report Tab

The PM Report tab contains all the *Market Participant* specific reports generated from the *Real Time Energy Market*. There are two basic types of reports available:

- Dispatch Reports for *Energy* and OR. The date format required is YYYYMMDDHH.
- Pre-Dispatch Reports for Energy and OR. The date format required is YYYYMMDD.

4.8.4 Settlement Report Tab

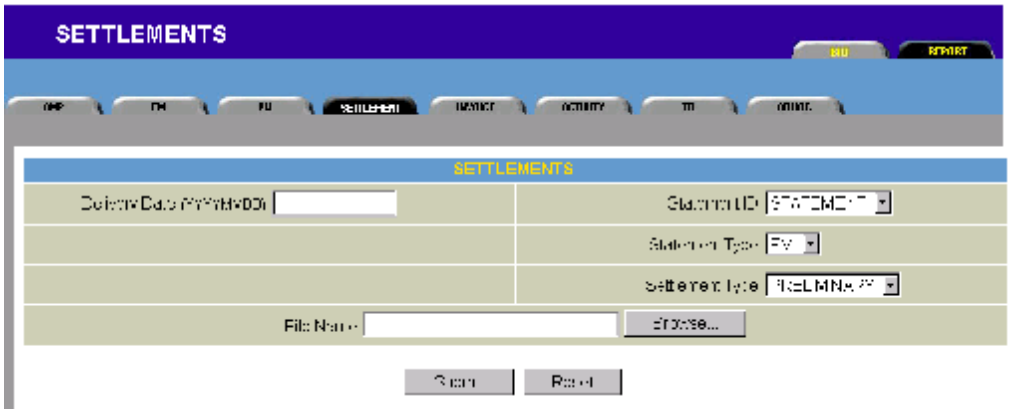

Figure 4-45: Settlement Report Tab

Participants are able to download their Settlement Statements by using the *Settlements* tab. These statements are generated by the CRS system and pushed to MIM every *business day*.

Both Financial and Physical Statements are available.

4.8.5 Invoice Report Tab

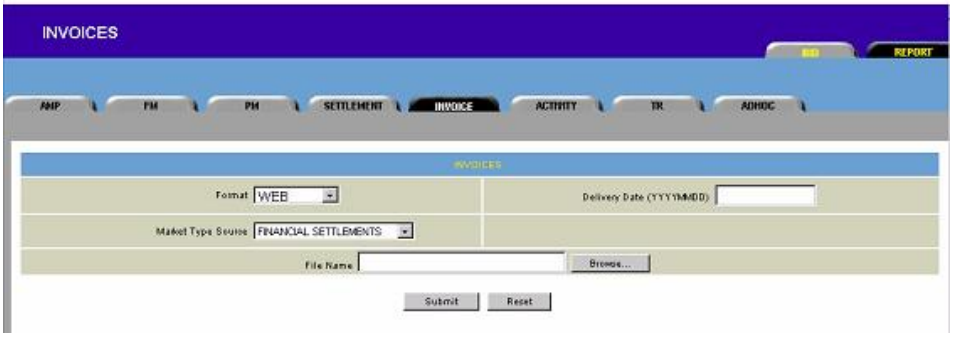

Figure 4-46: Invoice Report Tab

Both Financial and Physical Invoices are available by using the *Invoice* tab. These *invoices* are generated by the Oracle Financials system and pushed to MIM once a month.

4.8.6 Activity Report Tab

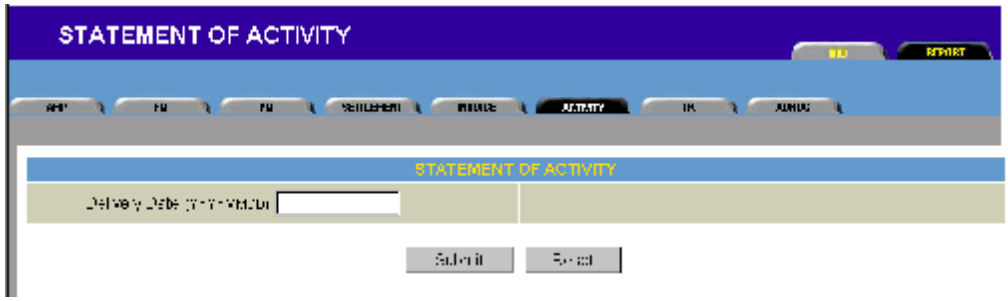

Figure 4-47: Activity Report Tab

Statements of Activity are available by using the *Statement of Activity* tab. These statements are generated by the Oracle Financials System and pushed to MIM at the end of each month.

4.8.7 TR Report Tab

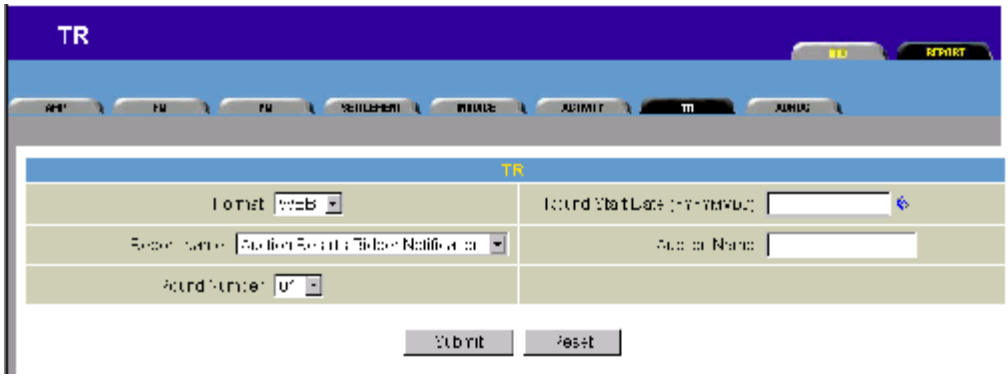

Figure 4-48: TR Report Tab

Transmission Rights Auction reports are selected from the *TR* tab. These TR reports are generated by the Transmission Rights Auction system and pushed to MIM.

4.8.8 ADHOC Report Tab

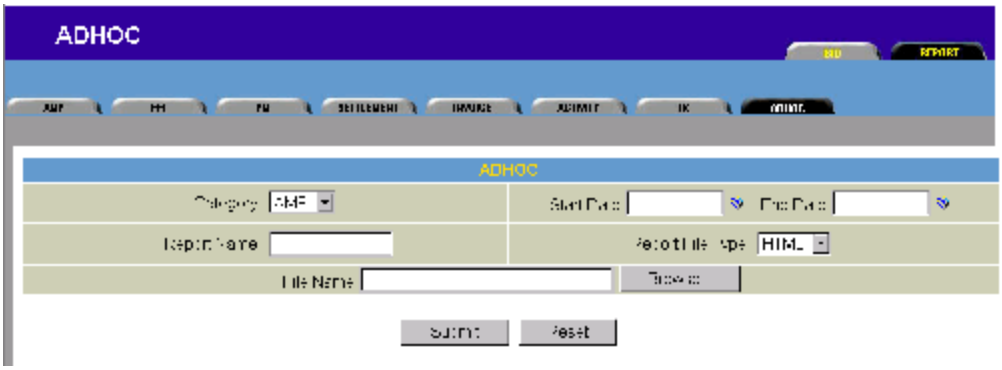

Figure 4-49: ADHOC Report Tab

Reports created by *IESO* internal systems may be made available to *Market Participants* through the *ADHOC* tab.

Deleted: *IMO*

4.9 Log Out Screen

The following screen is displayed if the user chooses the *Logout* option from the drop down box on the Home page. The 'Continue' button must be used. The user will then be redirected to the *IESO* public web-site.

Deleted: *IMO*

Deleted:

If the defined period of inactivity is reached, the user will be logged out automatically.

Note: Choosing 'Cancel' will still break the SSL session security context created between the browser and the MOSWEB or other server and require re-presentation of the user's browser based digital certificate for re-establishing an SSL encrypted session. Depending on mode of presentation of the browser client side certificate as detailed in sections 4.1.1 and 4.1.2, this will happen transparently or not.

Deleted: Netscape

Deleted: Netscape

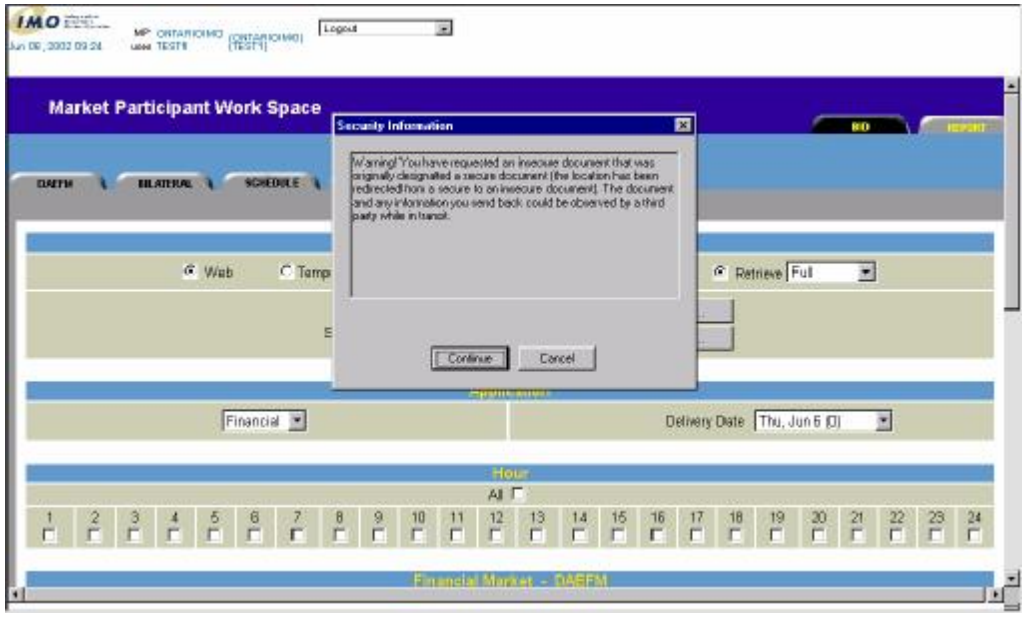

Figure 4-50: MPI Log-out Screen

- End of Section -

5. Tutorials

This section provides a more detailed tutorial as well as a systematic walk through the usage of the *Market Participant* Interface. There are two main sections:

- the Financial Market and,
- the Physical Market.

The tutorial guides the user through all the necessary actions required to be able to confidently use this tool.

All tutorials assume that the user can successfully connect and log into that MPI and that all configuration steps have been completed.

5.1 Day Ahead Energy Forward Market (DAEFM) Tutorials

This market is currently not available.

5.2 Real Time Energy Market (RTEM) Tutorials

5.2.1 Market Overview

The real time markets are the primary markets in which electricity will be bought and sold. Businesses, industries, and generators embedded in *distribution systems* in Ontario must decide whether to become active *participants* in these markets. *Participants* will have the opportunity to save money by managing their supply or use of electricity according to changes between peak and off-peak times, changes between seasons, or changes caused by other conditions in the market. In addition, new revenue opportunities may arise for companies that wish to buy electricity and sell it to other

companies, or to provide *operating reserve* to the *IESO*. However, participation in these markets will require an investment of time and money and new risks - so the decision to participate must be considered carefully.

Deleted: *IMO*

At market opening, there will be two real time markets, taking *bids* and *offers*:

- *Real Time Energy Market* (also called the *spot market*)
- *Real Time Operating Reserve Market*

Additional to these real time markets, *participants* will also be able to submit Bilateral Contracts and Schedules.

5.2.2 Functions available to Users

The various functions available to *participants* through the MPI are as follows:

- Submission of *bids* and *offers*,
- Update of *bids* and *offers*,
- Cancellation of *bids* and *offers*,
- Query current or future data that has been entered into the database.

The *Participant* will also have the ability to view the results of the market via reports or to download the results into an ASCII file.

5.2.3 Bid/Offer/Schedule Submission Windows

The various submission windows will be controlled automatically, with manual override capability. *Participants* can submit *bids* and *offers* during multiple bid submission windows. Bids received outside the submission window will be rejected with notification to the *participant*.

In the RTEM, bidding is done per logical “resource” (for example, generator, load, injection point, etc.) and *participants* are allowed one bid per logical resource. The logical resource may be an aggregation of individual physical resources or be an individual physical resource by itself.

The “current bid” is defined as the most recent valid submission for the delivery date. Each bid can consist of a subset, or complete set, of the 24-hours of data and each of the 24-hours can have different bid data. Each bid must indicate whether it is for *Generated Power, Load, Injection* or *Offtake*. Bids can consist of as few as two *price-quantity* bands or as many as twenty *price-quantity* bands, depending on the market type (see below for more details).

Standing *bids* can also be submitted. These are standard bid profiles for a given day of the week, or for all days, that stay in effect until superseded or until a defined “expiration date”. *Participants* have the ability to revise and/or cancel “current” or standing *bids* as many times as necessary within any submission window and subject to market-specific window revision rules. *Participants* will need the

ability to query their "current" bid for a certain number of days in the past as well as for today independent of market window status.

Bids may be submitted into four windows. These windows are explained below:

- Initial Market Window

The *Initial Market Window* opens at 06:00 for the *Real Time Physical Market* one day ahead. At this point, 24 one-hour market is created in MIM. The status of each of these markets is set to *Initial*. *Bids* and *offers* may be submitted and revised multiple times during the *Initial Window* without any system constraints.

- Unrestricted Market Window

The *Unrestricted Market Window* opens at 11:00 for the day ahead. At this point, the status of each of the 24 hourly markets is set to *Unrestricted*. *Bids* and *Offers* may be submitted and revised multiple times during the Unrestricted Window without any system constraints.

- Restricted Market Window

The *Restricted Market Window* opens 4 hours before the *Dispatch Hour*. The status of that hourly market is set to *Restricted*. *Bids* and *Offers* may be submitted as long as they are within the short notice constraints as laid down in the *market rules*. *Bids* and *offers* outside of these constraints must be accompanied by a defined *Reason Code* or a valid textual free text reason as to why these constraints have been exceeded.

- Mandatory Market Window

The Mandatory Market Window opens 2 hours before the *Dispatch Hour*. The status of that hourly market is set to *Mandatory*. Bids and offers that are submitted within this window would always require *IESO Operator Approval*. Again, a valid *Reason Code* or textual reason must accompany the bid or offer.

Deleted: *IMO*

After the *Initial Submission Window* is closed, the data will be used as the basis for the day ahead pre-dispatch. The results of this will be logged into the MIM database and *published*. After the close of the *Initial Submission Window*, the pre-dispatch will be run and *published* every hour.

5.2.4 Submission of Bids in the RTEM Market

The *participant* may submit *bids* for multiple hours at one time. Each of these hourly *bids* may fall into a different market window. The *Physical Markets System* will accept the bid into the appropriate open window and perform the necessary validation.

Note: A bid is referenced to be either a Bilateral/Schedule/Energy/Operating Reserve

Dispatch data submitted during the dispatch day to which it applies need refer only to the remaining dispatch hours of that dispatch day.

Whenever a bid fails validation in the Physical Market, the system will attempt to diagnose the problem and alert the *participant* to the source of the error. A bid will be processed until further processing is impossible or meaningless. All validation errors found in the bid as part of this processing, will be reported back to the *participant*, not just the first error found. All valid hours of a bid will be accepted for each resource, with error messages returned for each invalid hour.

Syntax errors within a bid or offer will result in a complete rejection of that bid or offer.

5.2.5 Physical Bilateral Contracts (PBC's) Tutorials

Please refer to the Subsection 4.7.2 (Bilateral Contract Data Submission Form) for detailed description of the Form Controls.

The following tutorials demonstrate to the user how to submit, retrieve, and cancel *Bilateral Contracts.*

Please refer to the subsection on PBC Cancellation below for an example of cancellation of an existing PBCD.

Any resource, as long as it is defined in the *Master File* (*Participant Lifecycle System*), may be used as the (*Resource ID*). A list of Bilateral *Delivery Points* is available on the *IESO* web-site. For this tutorial however, a *Dispatchable Generator* resource will be used.

Deleted: *IMO*

Deleted: Web

PBC Submission (HTML)

PBC's may be submitted during a defined time submission window. This window is defined as 7 calendar days before and 6 *business days* after the trading date. This tutorial will only concentrate on the submission of a PBCD for an absolute quantity, hours 1-12, with the trading date February 5 = d_{+1}.

1. Select the *BILATERAL Market Tab*.
2. Ensure that the *Delivery Date* is tomorrow.
3. Select *SUBMIT* from the *Action* pull-down box.
4. Select *NO* from the *Standing Flag* pull-down box.
5. Enter the *Participants* short name in the *Participant Seller* text box.
6. Enter the short name for the Buyer in the *Participant Buyer* text box.
7. Enter the name of the *Resource* agreed to in the contract to be used as the settlement point. If unknown, press the "+"flag and choose from the list of resources available. A list of dispatchable and non-dispatchable *delivery points* is available on the *IESO* web-site.
8. For hours 1 through 12 inclusive, check the *Hour* checkbox.
9. For each of the checked hours,

Deleted: *IMO*

Deleted: W

Deleted:

a. Enter a quantity up to the maximum quantity of the designated resource,

b. Select the appropriate credit/debit uplift allocation check boxes.

10. Click the ***SUBMIT*** button at the bottom of the page.

11. A unique Transaction ID will be generated for the PBC submitted.

Note: Do not check the PBC Percentage Flag. The PBC percentage flag is only used for the settling 100% of the allocated metering quantities at the location identified by the *Delivery Point.* The Expiry Date is used only for Standing PBCD Submission's.

Expiry Date is used only for Standing PBCD Submissions. The user should allow one day for the conversion of the expiry day. Thus, if the user wants the contract to be in effect until the day X, he must enter the expiry date = X – 1 (X minus one.)

Note 2: The Submission of a Standing PBC (SPBCD) becomes effective on Day 2 after the submission day (Day 0.), so the Delivery Date is ignored.

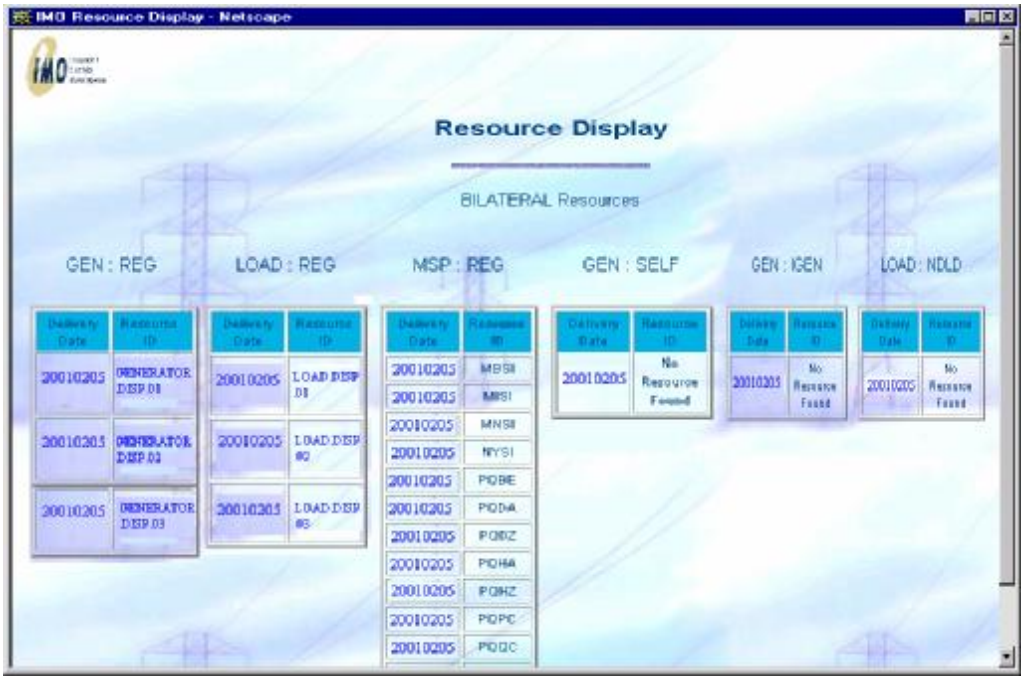

Figure 5-1: Resource Display (Bilateral Contracts)

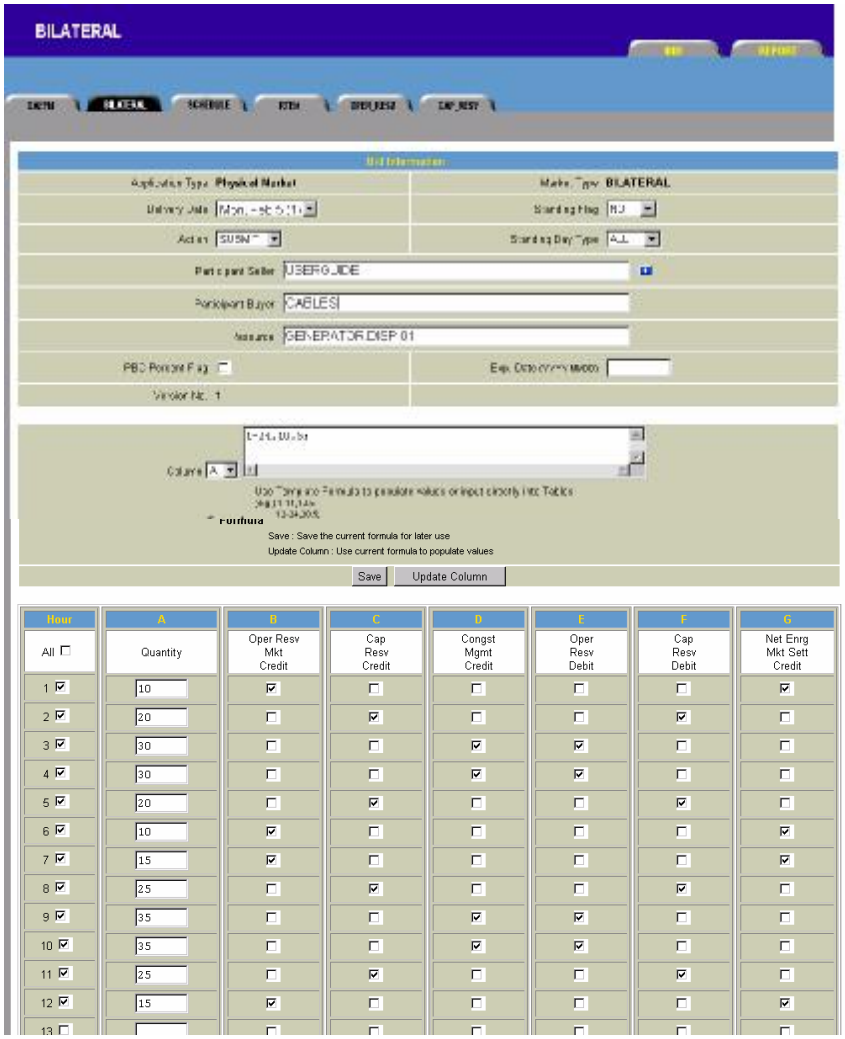

Figure 5-2: PBC Submission (HTML)

Figure 5-3: PBC Submission (HTML) Status Page

PBC Retrieval/Submission (ASCII)

PBC Retrieval (ASCII)

Please refer to the Template Format on the *IESO* Technical Interface Page.

Deleted: *IMO*

The following tutorial demonstrates the retrieval of a PBCD to a text file and then the re-submission of that text file.

1. Select the *Main BID Tab* to display the *Market Participant Workspace*.
2. In the *Action* window,
   a. Select the *Template* radio button.
   b. Select the *Retrieve* radio button.
   c. Select *Full* in the pull-down box.
3. Click the ***BROWSE…*** button and enter a filename and location for the download file.
4. In the *Application* window,

a. Select *Physical* in the *Market Type* pull-down box.

b. Select the *Delivery Date*.

5. For hours 1 through 12 inclusive, select the *Hour* checkbox.

6. In the *Physical Market Window* (Bilateral Section),

a) Select the *BILATERAL* checkbox.

b) Enter the *Participant Seller* short name.

c) Enter the *Participant Buyer* short name.

d) Enter the *Resource Name*.

Note: It is possible to just provide some of the details. For example, if only the *BILATERAL* checkbox was selected, *ALL* Bilateral Contracts for that participant will be retrieved. Remember that this is only possible when retrieving to a file unless the query only yields a single result.

7. Click the ***SUBMIT*** button at the bottom of the page.

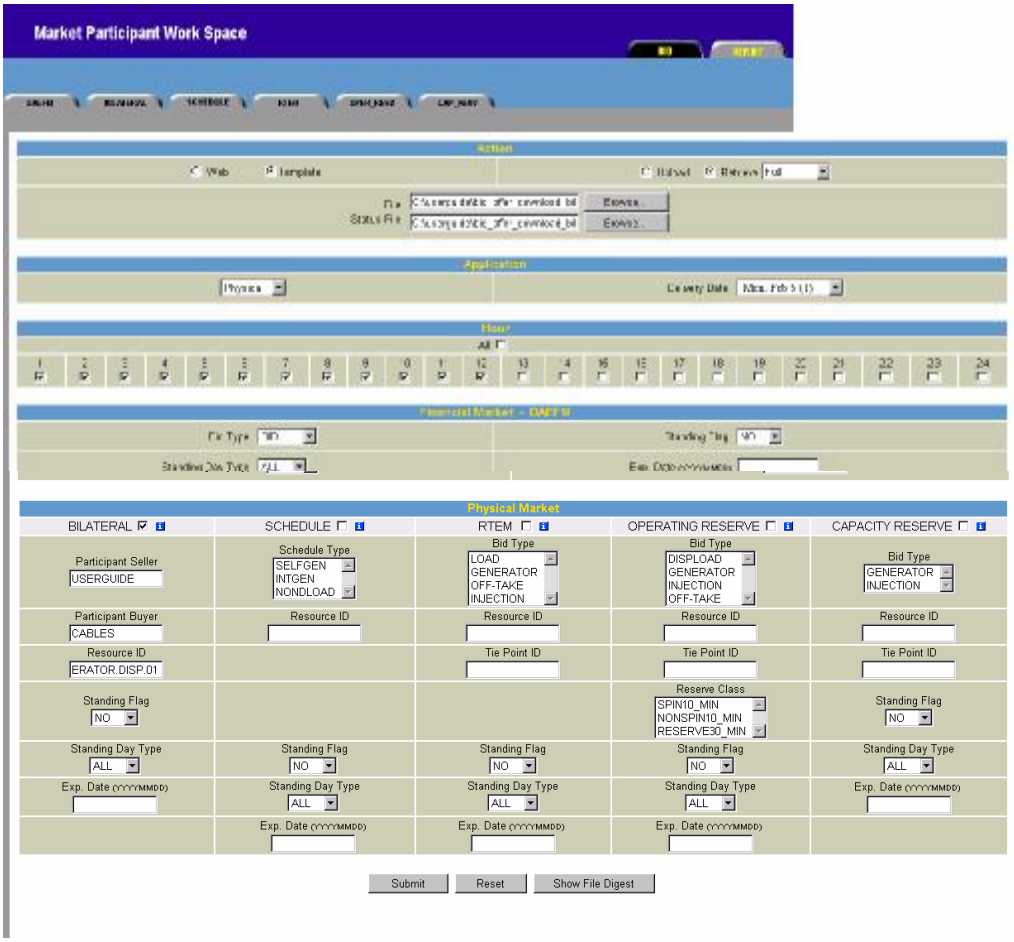

Figure 5-4: PBC Retrieval/Submission (ASCII)

Figure 5-5: Download Request Successful Dialog

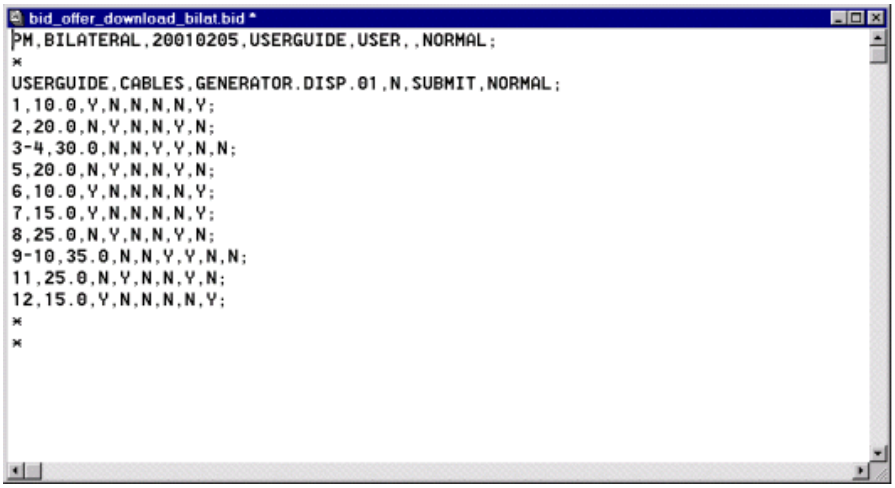

Figure 5-6: Downloaded PBC File

PBC Submission (ASCII)

The following tutorial demonstrates to the user how to upload an ASCII Text File.

1. In a suitable text editor, PFE for example, modify the previously downloaded file so that the hours 13-24 are covered.
2. Save the file as a different filename.
3. In the MPI, select the *Main BID Tab* to display the *Market Participant Workspace*.
4. In the *Action* window,
    a. Select the *Template* radio button.
    b. Select the *Upload* radio button.
    c. Click the ***BROWSE…*** button and select the modified file.
    d. Note the location of the *Status File*. By default it is in the same location and has the same filename with an additional *.err* extension.
5. Click the ***SUBMIT*** button at the bottom of the page.

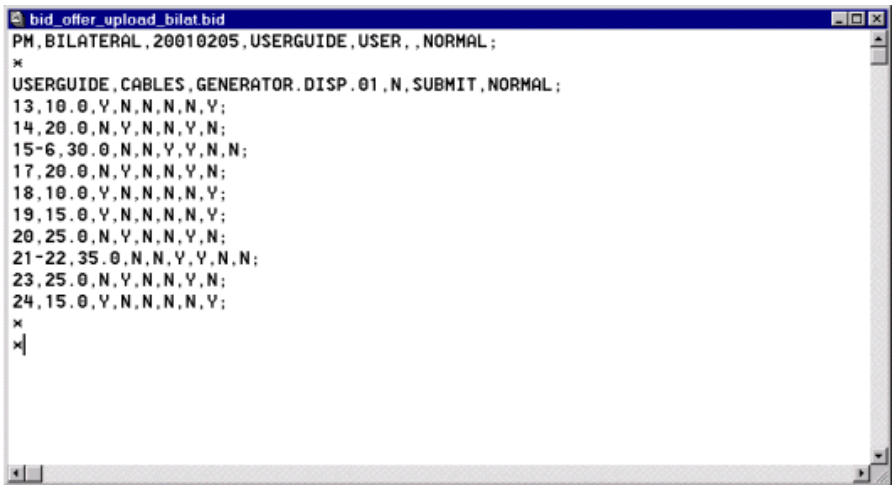

Figure 5-7: PBC Upload File

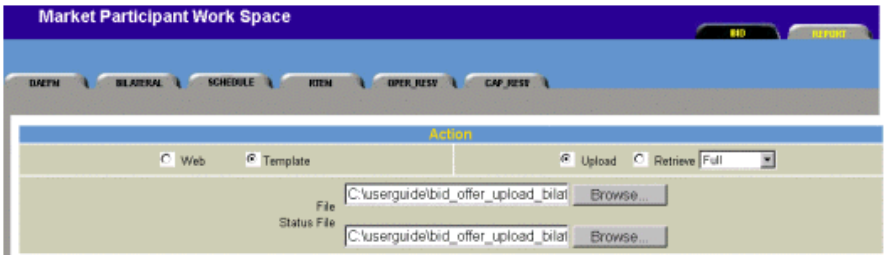

Figure 5-8: PBC Submission (ASCII)

Figure 5-9: Upload Request Successful Dialog

```
Submission Date : 20010204  13:56:50

Parsing Status for Bid # 1 <PM, BILATERAL, 20010205, USERGUIDE, USER, >  : Success
Inserting PM bid into database <USERGUIDE, USER>         : Permission granted

PM_SUCCESS: Hour 13 successfully inserted/updated with all validations
PM_SUCCESS: Hour 14 successfully inserted/updated with all validations
PM_SUCCESS: Hour 15 successfully inserted/updated with all validations
PM_SUCCESS: Hour 16 successfully inserted/updated with all validations
PM_SUCCESS: Hour 17 successfully inserted/updated with all validations
PM_SUCCESS: Hour 18 successfully inserted/updated with all validations
PM_SUCCESS: Hour 19 successfully inserted/updated with all validations
PM_SUCCESS: Hour 20 successfully inserted/updated with all validations
PM_SUCCESS: Hour 21 successfully inserted/updated with all validations
PM_SUCCESS: Hour 22 successfully inserted/updated with all validations
PM_SUCCESS: Hour 23 successfully inserted/updated with all validations
PM_SUCCESS: Hour 24 successfully inserted/updated with all validations



     Transaction ID : 24Duo0

     1 bids received
     1 bids accepted in full
     0 bids rejected in full because of syntax errors
     0 bids partially or fully rejected with bid errors
```

Figure 5-10: PBC Status File

PBC Retrieval (HTML)

The following tutorial demonstrates to the user how to retrieve a PBCD into the WEB in HTML format.

1. Select the *Main BID Tab* to display the *Market Participant Workspace*.
2. In the *Action* window,
    a) Select the *Web* radio button.
    b) Select the *Retrieve* radio button.
    c) Select *Full* in the pull-down box.
3. In the Application window:
    a) Select Physical in the Market Type pull-down box.
    b) Select the Delivery Date (For the Standing PBC, the Delivery Date is ignored.)
4. In the *Hour* window, select the *All* checkbox so that the hours 1 through 24 are selected.
5. In the *Physical Market Window* (Bilateral Section),
    a) Select the *BILATERAL* checkbox.
    b) Enter the *Participant Seller* short name.
    c) Enter the *Participant Buyer* short name.
    d) Enter the *ResourceName*.

Note: It should be noted that enough information must be supplied to yield a single result. If multiple results are required, the user must download the data to a text file.

6. Click the ***SUBMIT*** button at the bottom of the page.

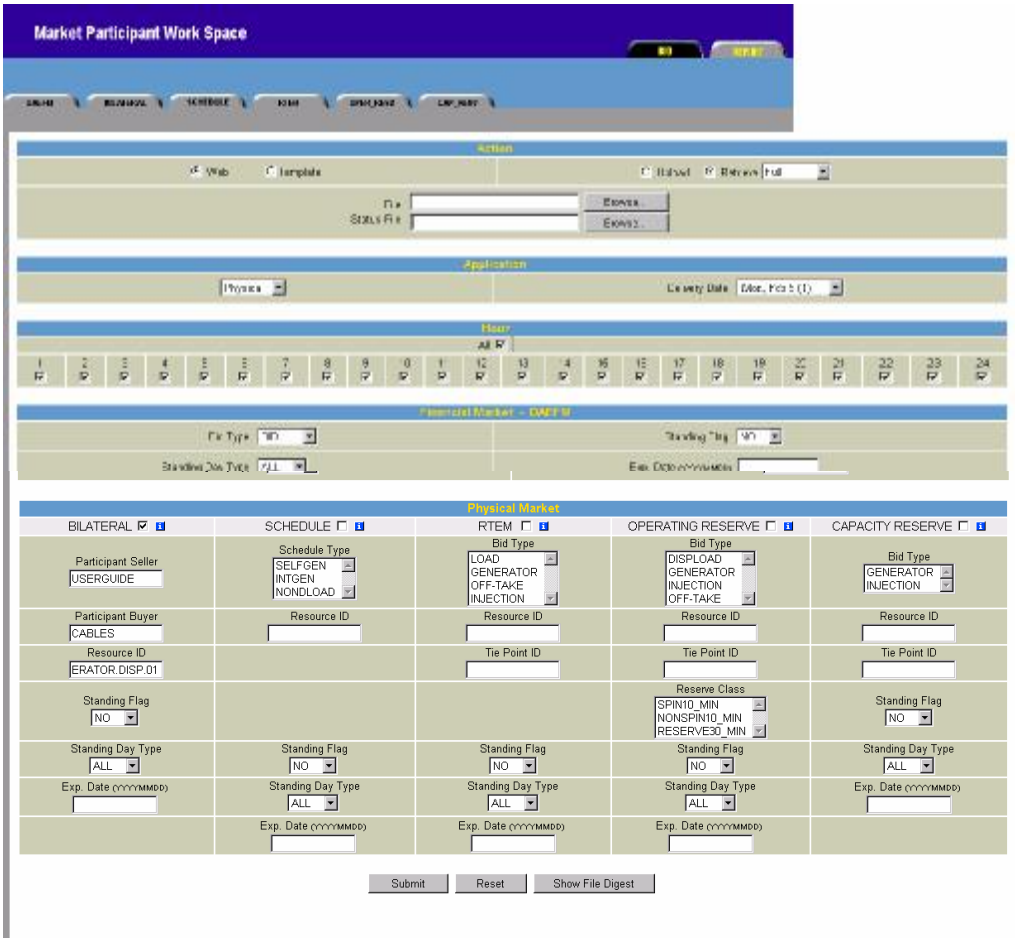

Figure 5-11: PBC Retrieval (HTML)

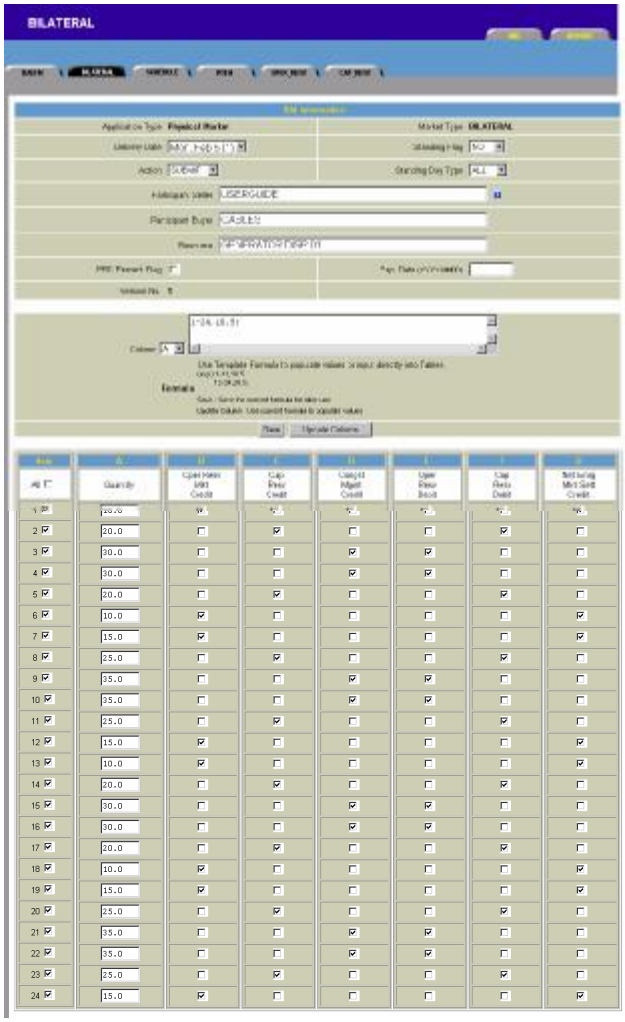

Figure 5-12: Retrieved PBC (HTML)

PBC Cancellation (HTML)

The following steps show the user how to cancel a PBCD for all or specific hours.

Note: If a participant wishes to change quantities, change the type of the contract to 100% PBC, or change to a Standing PBCD, then the Seller *Market Participant* must cancel all hours of the day for the contract already submitted; then enter a new Bilateral Contract, as desired (go to the Submission Section for a new entry.)

In cases where the user is dealing with vast amounts of information, it is better to plan in advance to ensure that the correct PBC is cancelled.

1. Repeat the steps detailed in the *PBC Retrieval* (HTML) tutorial. This will bring up the PBC Submission Form. Select only 2 hours instead of 24. For example, hour 1 and 2 will be retrieved.

2. In the *Bid Information Window* in the *PBC Submission form*, change the *Action* to *CANCEL*. For whole day cancellation, all the hours should be selected.

Note: If a participant wishes to cancel only a few hours instead of all hours, he should deselect the hours to be retained in the new PBC (i.e. only selected – checked – hours will be cancelled.) In the Bilateral submission form below , only Hour 1 and Hour 2 are checked for cancellation.

3. Click the ***SUBMIT*** button at the bottom of the page.

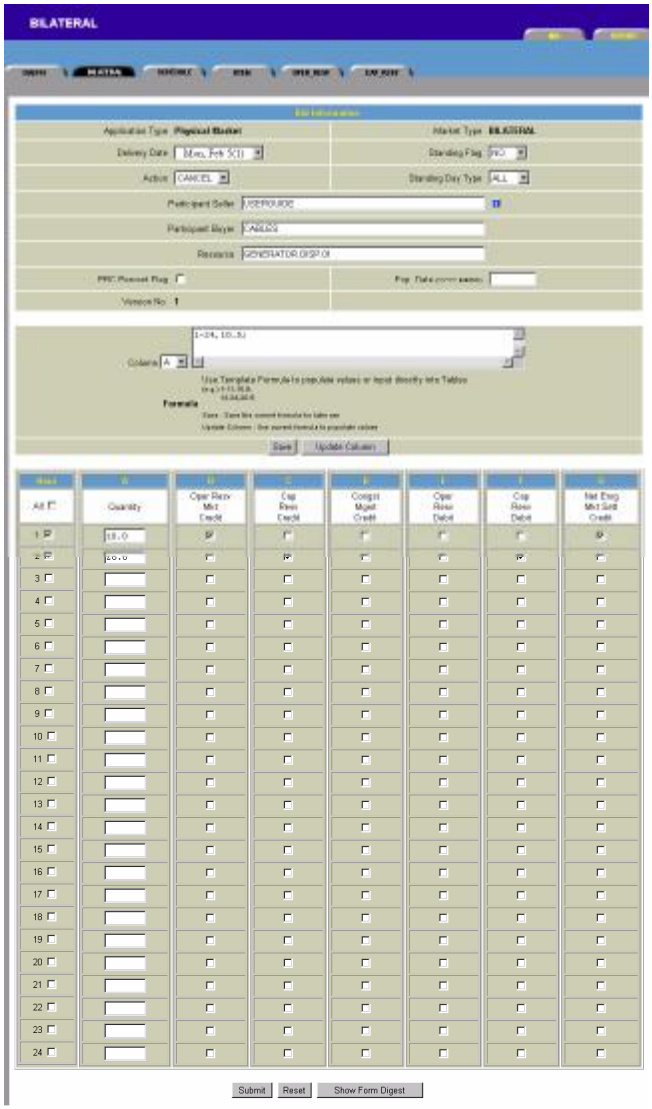

Figure 5-13: Canceling a PBC (HTML)

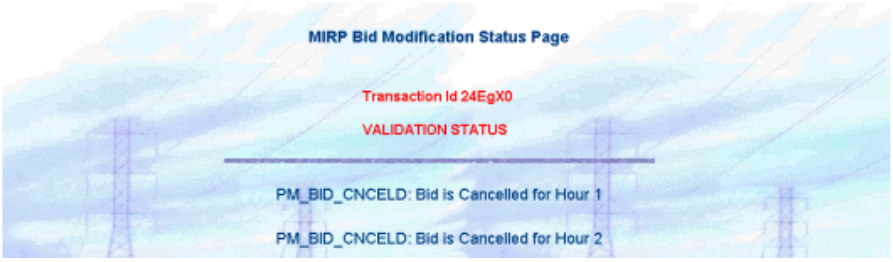

Figure 5-14: PBC Cancellation (HTML) Status Page

If the user wishes, the whole PBCD can then be retrieved again by following the steps in the *PBC Bid Retrieval* (HTML) tutorial. The user should notice that the hours that were cancelled in this tutorial are no longer part of the PBCD.

Note: The Cancellation of a Standing PBC (SPBCD) becomes effective on Day 2 after cancellation day (Day 0.) The Delivery Date is ignored. The other days, remained in the system, cannot be cancelled as "SPBCD", but may be cancelled in the "PBCD" mode.

PBC Cancellation (ASCII)

1. To retrieve the PBC to file, follow the steps in the *PBC Retrieval (ASCII)* tutorial.
2. In an appropriate Text Editor, for example PFE, delete the bid body from the PBC. These are the lines starting with the market hour.
3. Replace the deleted lines with the individual hours that are to be cancelled. For example:

   1-4; Hours 1 to 4 will be cancelled

   5; Hours 5 and 7 will be cancelled

   7;
4. In the *Bid Header*, the part that reads, **SUBMIT, NORMAL**, change the text *SUBMIT* to *CANCEL*.
5. Save the file as a different filename.
6. To submit the Bid and Offer cancellation, follow the steps in the *PBC Submission (ASCII)* tutorial.

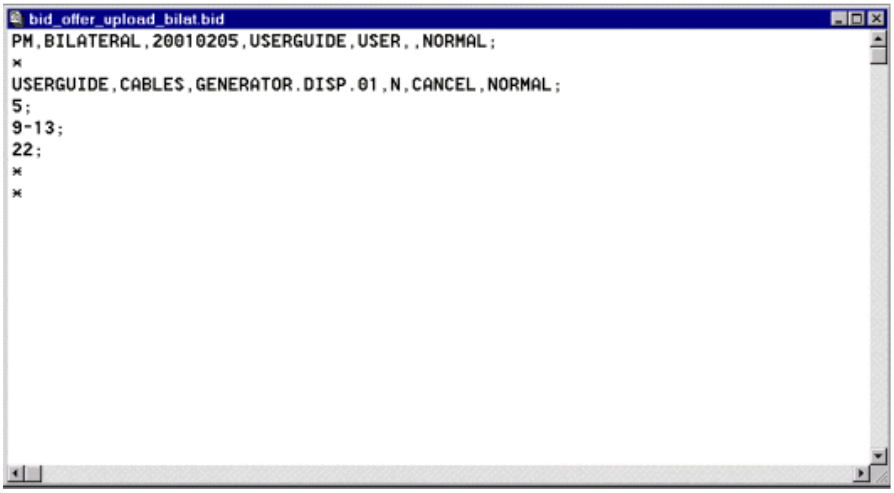

Figure 5-15: PBC Cancellation File

5.2.6 Schedules Tutorials

The following tutorials demonstrate to the user how to submit, retrieve, and cancel Scheduled Bids. Different types of resources can be submitted for schedules. In this tutorial however, only *Self-Scheduled Generators* will be used. Other resource types namely *Intermittent Generators* and *Non-Dispatchable Loads* can be treated in the same way.

Schedule Submission (HTML)

Schedules may be submitted during the *Real Time Physical Market Window*. This tutorial will only concentrate on the submission of a Schedule for d_{+1}.

1. Select the *SCHEDULE Market Tab*.
2. Ensure that the *Delivery Date* is tomorrow.
3. Select *SUBMIT* from the *Action* pull-down box.
4. Select ***NO*** from the *Standing Flag* pull-down box.
5. If known, enter the name of the *Resource*. If unknown, press the '+'flag and choose from the list of resources available.
6. For hours 1 through 12 inclusive, select the *Hour* checkbox.
7. For each of the checked hours,
    a) Enter a price, +- *Maximum Market Clearing Price*.
    b) Enter a quantity not exceeding that of the *Resources* capability.

6. Click the ***SUBMIT*** button at the bottom of the page.

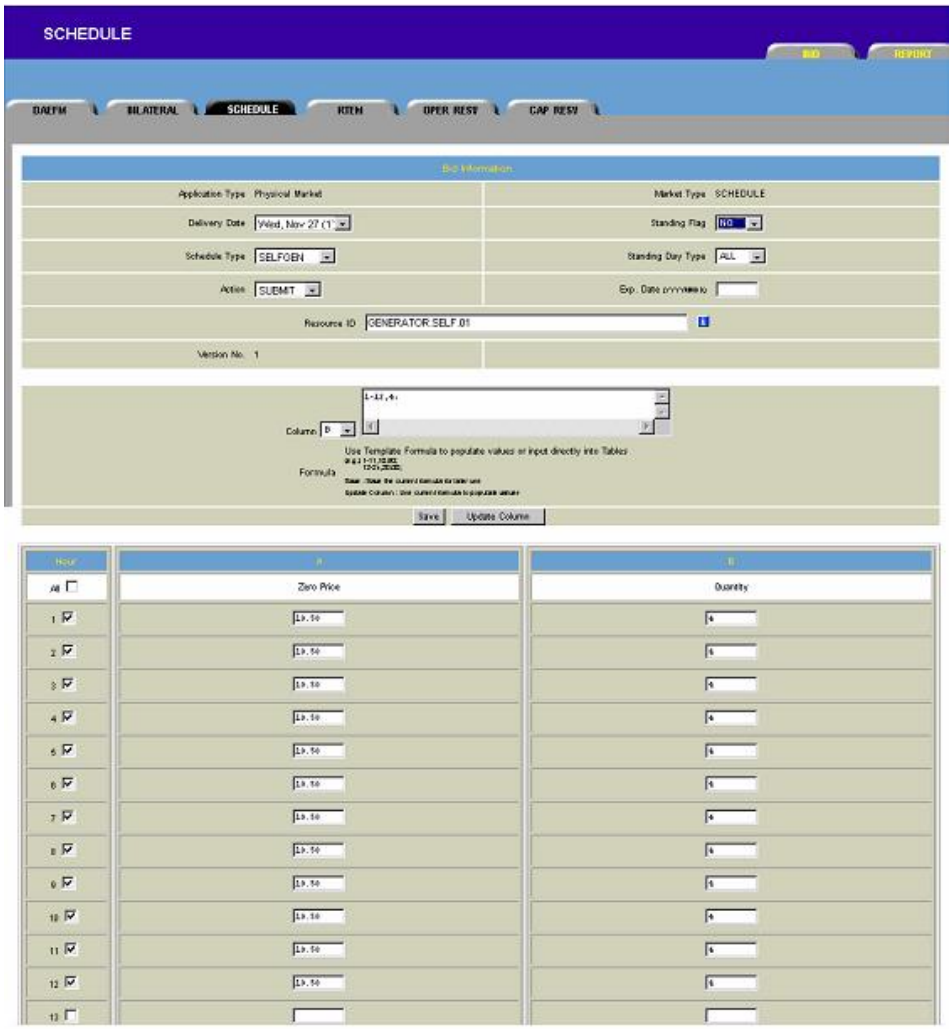

Figure 5-16: Schedule Submission (HTML)

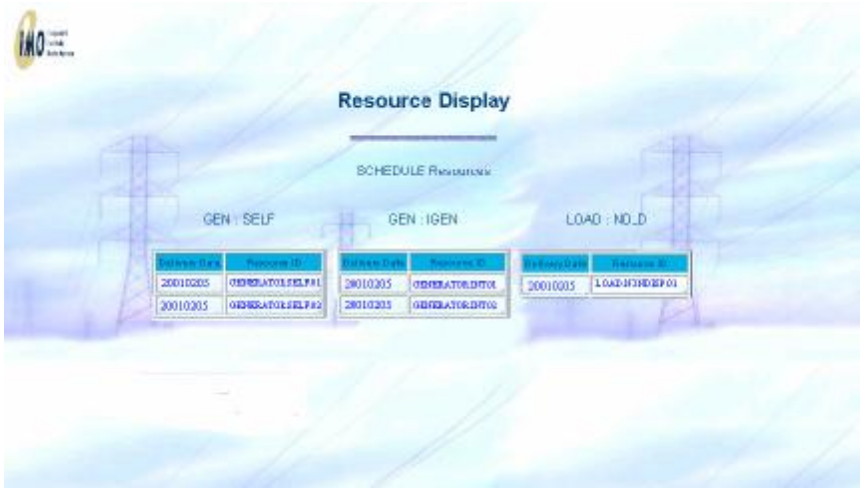

Figure 5-17: Resource Display (Schedules)

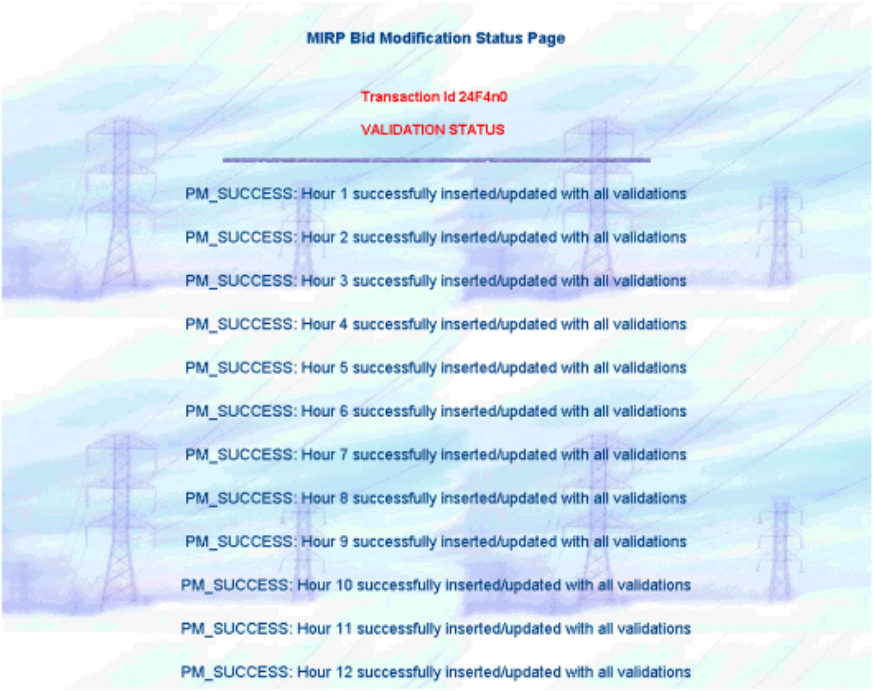

Figure 5-18: Schedule Submission (HTML) Status Page

Schedule Retrieval/Submission (ASCII)

Schedule Retrieval (ASCII)

The following tutorial demonstrates the retrieval of a *Schedule* to a text file and then the resubmission of that text file.

1. Select the *Main BID Tab* to display the *Market Participant Workspace*.
2. In the *Action* window,
    a) Select the *Template* radio button.
    b) Select the *Retrieve* radio button.
    c) Select *Full* in the pull-down box.
3. Click the ***BROWSE…*** button and enter a filename and location for the download file.
4. In the *Application* window,
    a) Select *Physical* in the *Market Type* pull-down box.

b) Select the *Delivery Date* as tomorrow.

5. For hours 1 through 12 inclusive, select the *Hour* checkbox.

6. In the *Physical Market Window* (*Schedule Section*),

   a) Select the *SCHEDULE* checkbox.

   b) Select the Schedule Type.

   c) Enter the *Resource ID* for the schedule that is to be retrieved.

Note: It is possible to just provide some of the details. For example, if only the *SCHEDULE* checkbox was selected, schedules for that participant will be retrieved. Remember that this is only possible when retrieving to a file unless the query only yields a single result.

7. Click the ***SUBMIT*** button at the bottom of the page.

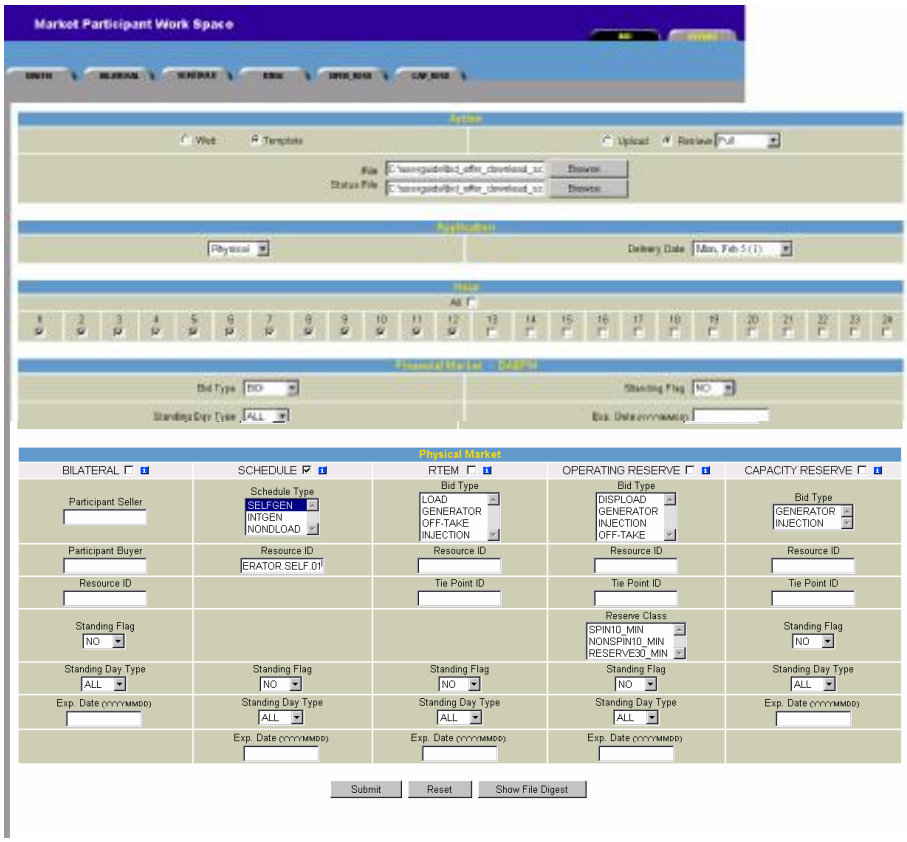

Figure 5-19: Schedule Retrieval/Submission (ASCII)

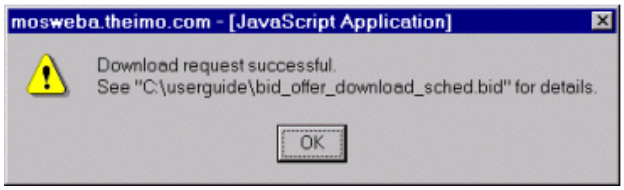

Figure 5-20: Download Request Successful Dialog

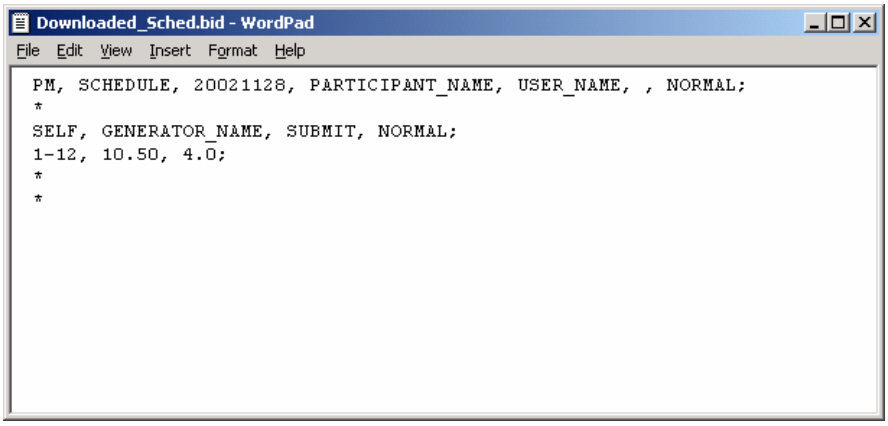

Figure 5-21: Downloaded Schedule File

Schedule Submission (ASCII)

The following tutorial demonstrates to the user how to upload an ASCII Text File.

1. In a suitable text editor, PFE for example, modify the previously downloaded file so that the hours 13-24 are submitted.
2. Save the file as a different filename.
3. In the MPI, select the Main BID Tab to display the *Market Participant* Workspace.
4. In the Action window,
   a) Select the *Template* radio button.
   b) Select the *Upload* radio button.
   c) Click the ***BROWSE...*** button and select the modified file.

Note: Notice the location of the *Status File*. By default it is in the same location and has the same filename with an additional *.err* extension.

5. Click the Submit button at the bottom of the page.

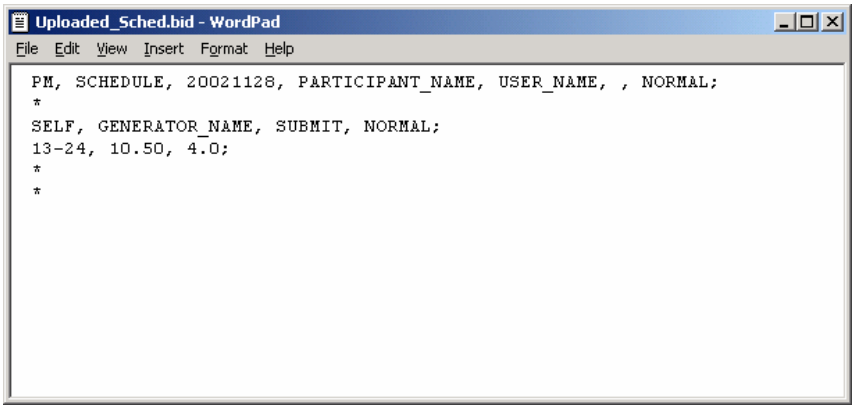

Figure 5-22: Schedule Upload File

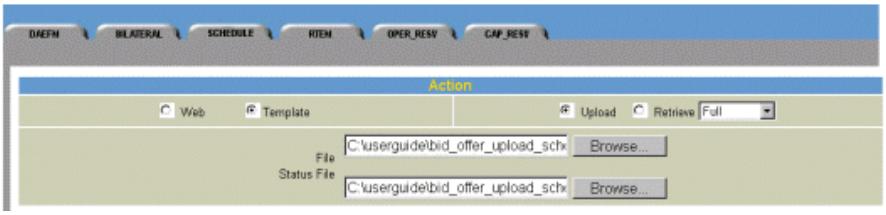

Figure 5-23: PBC Submission (ASCII)

Figure 5-24: Upload Request Successful Dialog

```
Submission Date : 20010204  15:25:49

Parsing Status for Bid # 1 <PM, SCHEDULE, 20010205, USERGUIDE, USER, GENERATOR.SELF.01>  : Success
Inserting PM bid into database <USERGUIDE, USER>         : Permission granted

PM_SUCCESS: Hour 13 successfully inserted/updated with all validations
PM_SUCCESS: Hour 14 successfully inserted/updated with all validations
PM_SUCCESS: Hour 15 successfully inserted/updated with all validations
PM_SUCCESS: Hour 16 successfully inserted/updated with all validations
PM_SUCCESS: Hour 17 successfully inserted/updated with all validations
PM_SUCCESS: Hour 18 successfully inserted/updated with all validations
PM_SUCCESS: Hour 19 successfully inserted/updated with all validations
PM_SUCCESS: Hour 20 successfully inserted/updated with all validations
PM_SUCCESS: Hour 21 successfully inserted/updated with all validations
PM_SUCCESS: Hour 22 successfully inserted/updated with all validations
PM_SUCCESS: Hour 23 successfully inserted/updated with all validations
PM_SUCCESS: Hour 24 successfully inserted/updated with all validations



     Transaction ID : 24FPn0

     1 bids received
     1 bids accepted in full
     0 bids rejected in full because of syntax errors
     0 bids partially or fully rejected with bid errors
```

Figure 5-25: Schedule Status File

Schedule Retrieval (HTML)

The following tutorial demonstrates to the user how to retrieve a Schedule into the WEB in HTML format.

1. Select the *Main BID Tab* to display the *Market Participant Workspace*.

2. In the *Action* window,

a. Select the Web radio button.

b. Select the Retrieve radio button.

c. Select Full in the pull-down box.

3. In the *Application* window,

a. Select Physical in the Market Type pull-down box.

b. Select the Delivery Date as tomorrow.

1. In the *Hour* window, select the *All* checkbox so that the hours 1 through 24 are selected.

2. In the *Physical Market Window (Schedule Section),*

a. Select the SCHEDULE checkbox.

b. Select the Schedule Type.

c. Enter the Resource ID.

Note: Enough information must be supplied to yield a single result. If multiple results are required, the user must download the data to a text file.

3. Click the ***SUBMIT*** button at the bottom of the page.

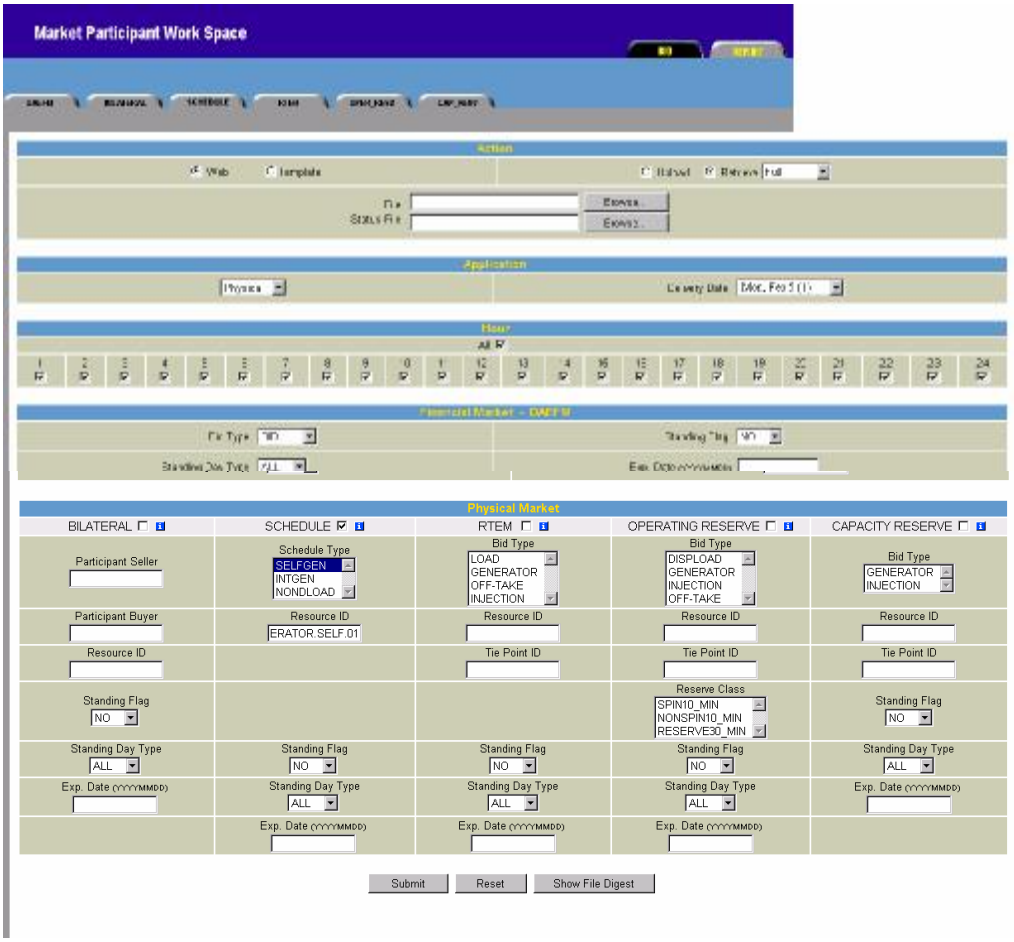

Figure 5-26: Schedule Retrieval (HTML)

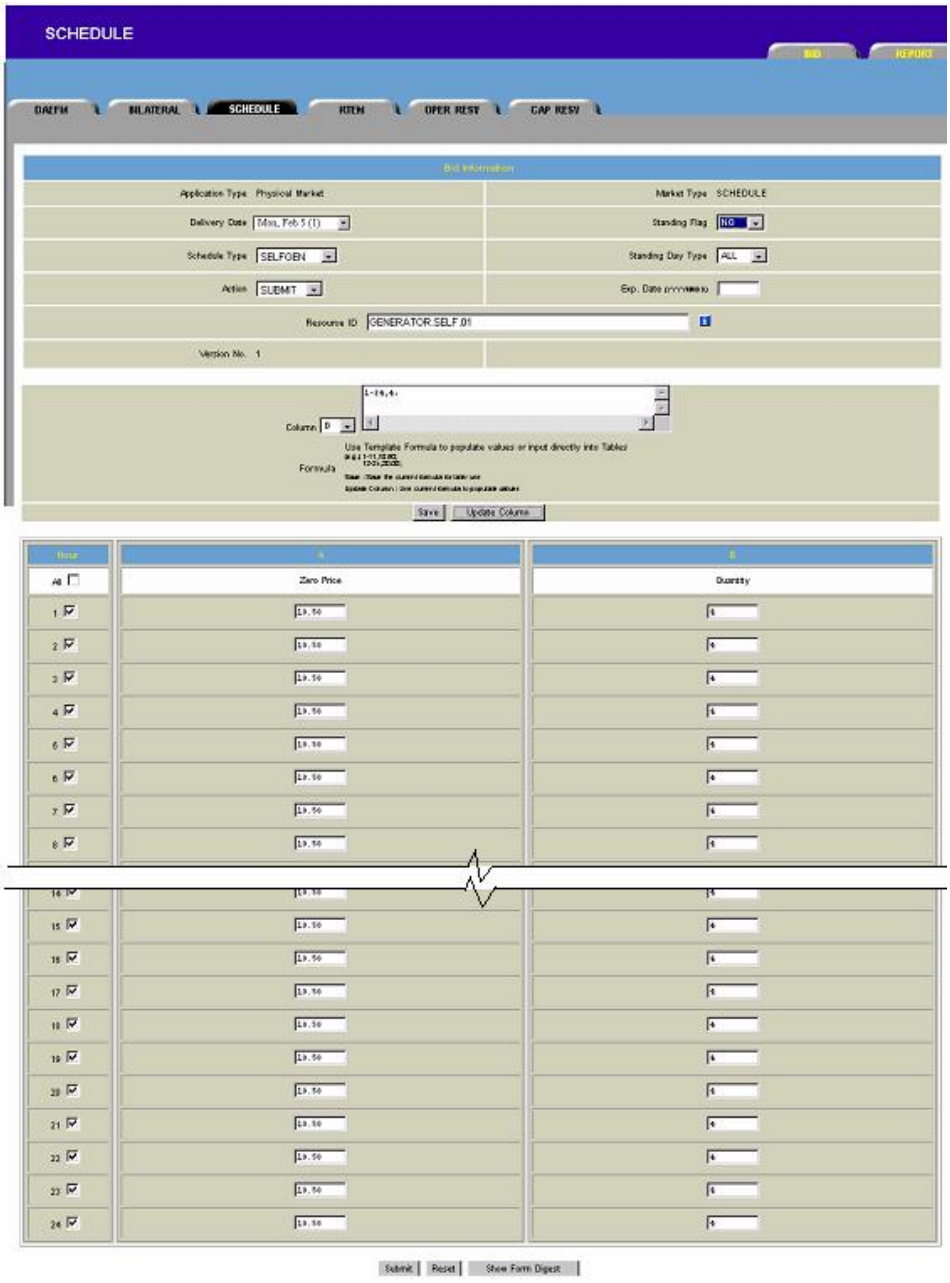

Figure 5-27: Sample Retrieved Schedule (HTML)

Schedule Cancellation (HTML)

The following steps show the user how to cancel a Schedule by first retrieving the Schedule into the web and then submitting those hours as cancelled. The first step is in fact unnecessary as the bid can be cancelled straight from the *Schedule Submission Form*. In cases where the user is dealing with vast amounts of information, it is sometimes better to 'eyeball' the data first to ensure that the correct Schedule is being cancelled.

1. Repeat the steps detailed in the Schedule Retrieval (HTML) tutorial but only select 2 hours instead of 24. For example, hour 1 and 2 will be retrieved.

2. In the *Bid Information Window* in the *Bid Submission Form*, change the *Action* to *CANCEL*.

3. Click the ***SUBMIT*** button at the bottom of the page.

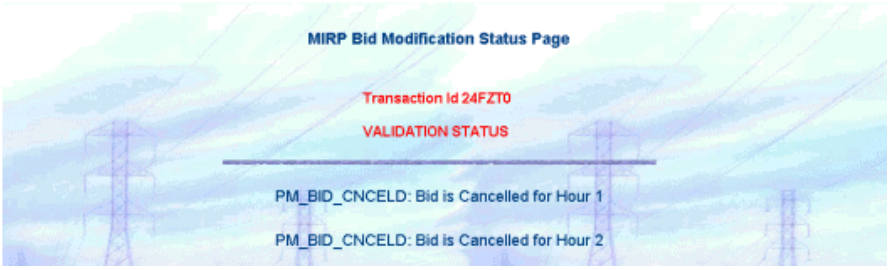

Figure 5-28: Schedule Cancellation (HTML) Status Page

If the user wishes, the whole schedule can then be retrieved again by following the steps in the *Schedule Bid Retrieval (HTML)* tutorial. The user should notice that the hours that were cancelled in this tutorial are no longer part of the bid.

Schedule Cancellation (ASCII)

1. To retrieve the Schedule to file, follow the steps in the *Schedule Retrieval (ASCII)* tutorial.

2. In an appropriate Text Editor, for example PFE, delete the bid body from the Schedule. These are the lines starting with the market hour.

3. Replace the deleted lines with the individual hours that are to be cancelled. For example:

   1-4; Hours 1 to 4 will be cancelled

   5; Hours 5 and 6 will be cancelled

   6;

4. In the *Bid Header*, the part that reads, **SUBMIT, NORMAL**, change the text *SUBMIT* to *CANCEL*.

5. Save the file as a different filename.

6. To submit the Bid and Offer cancellation, follow the steps in the Schedule *Submission (ASCII)* tutorial.

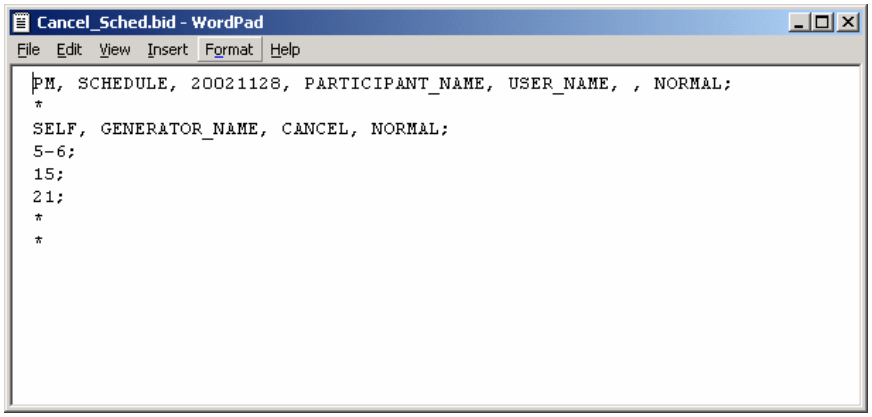

Figure 5-29: Schedule Cancellation File

5.2.7 Energy Tutorials

The following tutorials demonstrate to the user how to submit, retrieve, and cancel Energy Bids and Offers. The four types of resource that can be used when submitting *bids* and *offers* into the Energy Market are:

- *Dispatchable Generators*
- *Dispatchable Loads*
- Injections
- Offtakes

For this tutorial however, only *Dispatchable Generators* and *Dispatchable Loads* will be used.

Energy Bid/Offer Submission (HTML)

Energy Bids and Offers may be submitted during any open *Market Window*. For this tutorial however, only day ahead *bids* and *offers* will be submitted. Short Notice *bid*/*offer* submissions will be covered later in this document.

Energy Bid Submission (HTML)

Energy Bids are submitted for *Load Resources*. These can either be *Dispatchable Loads* within Ontario or Offtake *bids* that result in energy being dispatched outside of Ontario. If an Offtake bid is submitted, the resource type must be a CSP-SINK and a *Tie Point* must be defined (see Appendix A for a list of CSP's and MSP's). This tutorial does not cover the submission of Offtakes.

1. Select the *RTEM Market Tab*.
2. Ensure that the *Delivery Date* is tomorrow.
3. Select *SUBMIT* from the *Action* pull-down box.
4. Select *NO* from the *Standing Flag* pull-down box.
5. Enter the *Daily Energy Limit*.
6. Enter the *Operating Reserve Ramp Rate*.
7. Select *LOAD* in the *Bid/Offer* pull-down box.
8. If known, enter the name of the *Resource* to be used as the *Pricing Point*. If unknown, press the "F" flag and choose from the list of resources available.
9. If the bid were an *Injection* or *Offtake*, the *Tie Point ID* field would be populated with the appropriate *Tie Point ID* name.
10. If the Bid were an *Injection* or *Offtake*, the *NERC Tag ID* field would be populated with the allocated unique *NERC Tag ID*.
11. For hours 1 through 12 inclusive, select the *Hour* checkbox.
12. For each of the checked hours, enter a bid, for example:

    (40,0),(40,5),(30,10),(25,15),(20,20),(15,25),(10,30),(5,40)

Note: The following basic rules apply for a Bid:

a) The first price and second price must be the same. (**40**,0),(**40**,5)…

b) The first quantity must be zero. (40,**0**),(…

c) The Prices must always decrease. …),(**30**,10),(**25**,15),(…

d) The Quantities must always increase.),(30,**10**),(25,**15**),(…

e) There is a minimum of 2 *price-quantity pairs* for each hour.

f) There is a maximum of 20 *price-quantity pairs* for each hour.

For each of the checked hours, enter a ramp rate, for example,

(5,5,5),(20,5,4),(40,5,5)

Note: The following basic rules apply for *Ramp Rates*.

g) The *Maximum Ramp Rate Break Point* must be equal to or greater than the maximum energy quantity for that hour.

h) *Ramp Rate Break* quantities must always increase.

13. Click the ***SUBMIT*** button at the bottom of the page.

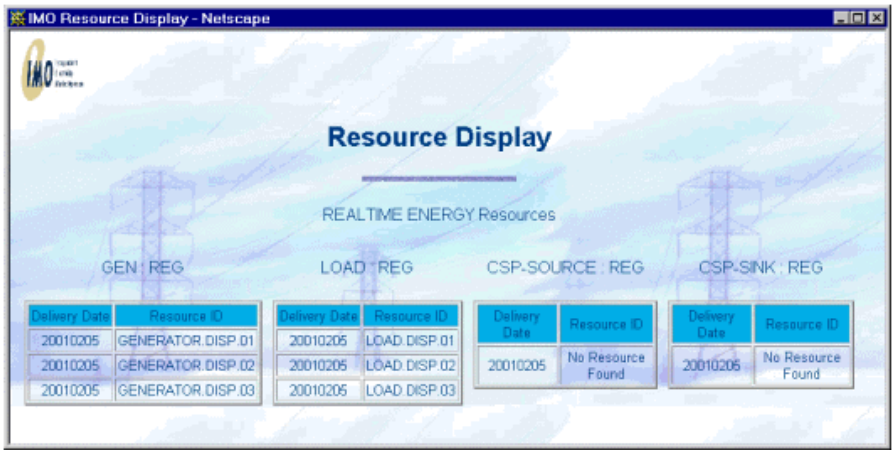

Figure 5-30: Resource Display (RTEM)

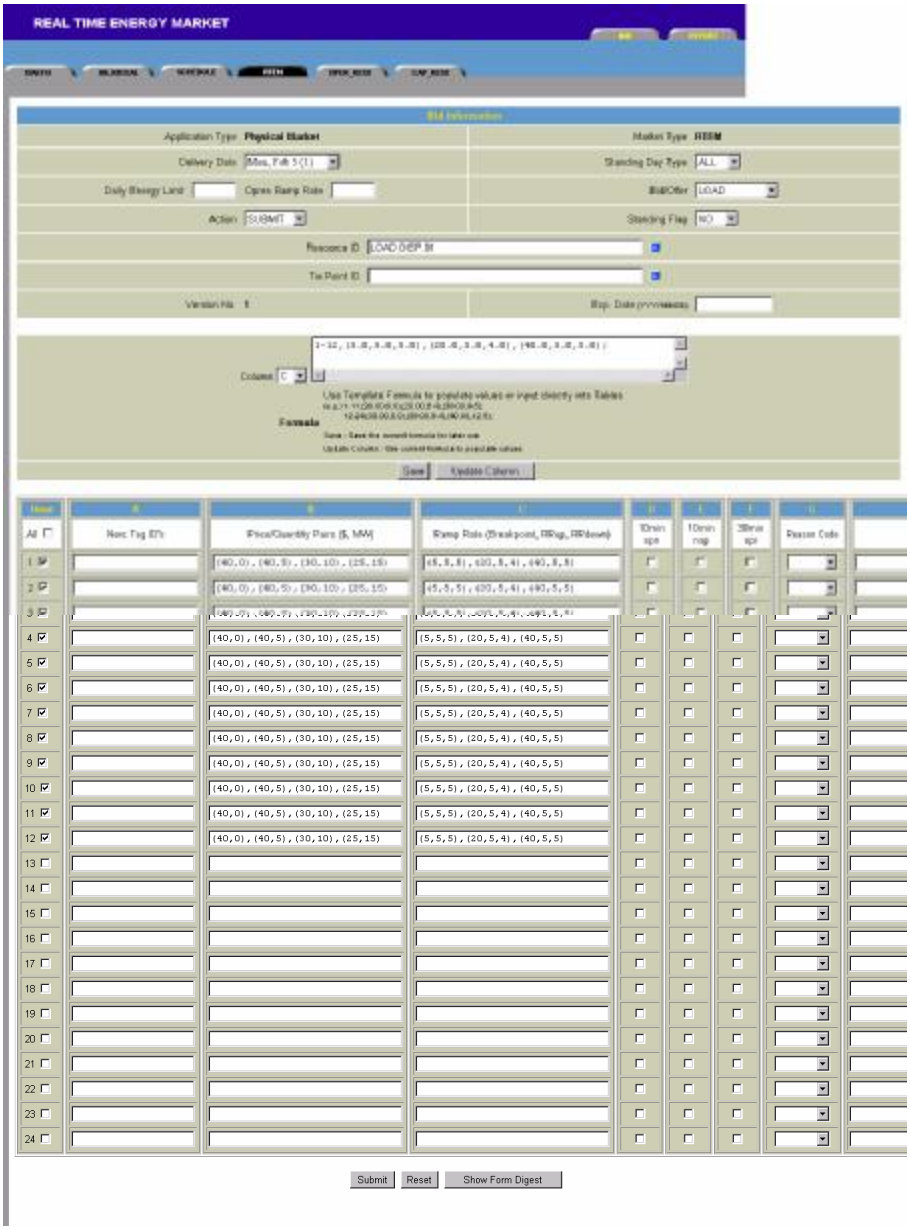

Figure 5-31: Energy Bid Submission (HTML)

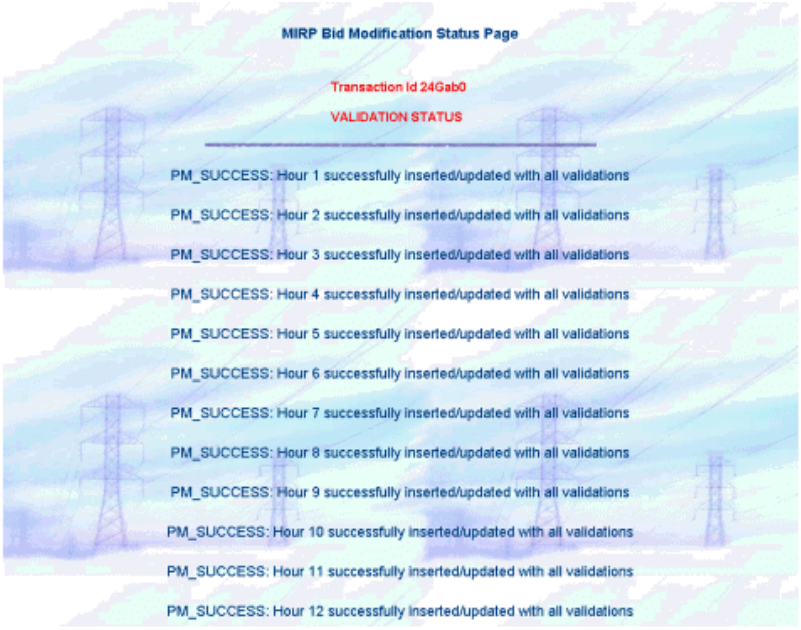

Figure 5-32: Energy Bid Submission (HTML) Status Page

Energy Offer Submission (HTML)

Energy Offers are submitted for *Generator Resources*. These can either be *Dispatchable Generators* within Ontario or Injection *bids* that result in Energy being dispatched into Ontario. If an *Injection* bid is submitted, the *Resource Type* must be a *CSP-SOURCE* and a *Tie Point* must be defined (see Appendix A1, CSP's and MSP's). This tutorial does not cover the submission of Injections.

1. Select the *RTEM Market Tab*.
2. Ensure that the *Delivery Date* is tomorrow.
3. Select *SUBMIT* from the *Action* pull-down box.
4. Select *NO* from the *Standing Flag* pull-down box.
5. Enter the *Daily Energy Limit*.
6. Enter the *Operating Reserve Ramp Rate*.
7. Select *GENERATOR* in the *Bid/Offer* pull-down box.
8. If known, enter the name of the *Resource* to be used as the *Pricing Point*. If unknown, press the "F" flag and choose from the list of resources available.
9. If the offer were an *Injection* or *Offtake*, the *Tie Point ID* field would be populated with the appropriate *Tie Point ID* name.

10. If the offer were an *Injection* or *Offtake*, the *NERC Tag ID* field would be populated with the allocated unique *NERC Tag ID*.

11. For hours 1 through 12 inclusive, select the *Hour* checkbox.

12. For each of the checked hours, enter a bid, for example

    (5,0),(5,5),(10,10),(15,15),(20,20),(25,25),(30,30),(40,40)

Note: The following basic rules apply for an OFFER:

a) The first price and second price must be the same. (**5**,0),(**5**,5)…

b) The first quantity must be zero. (5,**0**),(…

c) The Prices must always increase. …),(**15**,15),(**20**,20),(…

d) The Quantities must always increase.),(15,**15**),(20,**20**),(…

e) There is a minimum of 2 *price-quantity pairs* for each hour.

f) There is a maximum of 20 *price-quantity pairs* for each hour.

13. For each of the checked hours, enter a ramp rate, for example,

(5,5,5),(20,5,4),(40,5,5)

Note: The following basic rules apply for *Ramp Rates:*

a) The *Maximum Ramp Rate Break Point* must be equal to or greater than the maximum energy quantity for that hour.

b) *Ramp Rate Break* quantities must always increase.

14. Click the ***SUBMIT*** button at the bottom of the page.

Figure 5-33: Resource Display (RTEM)

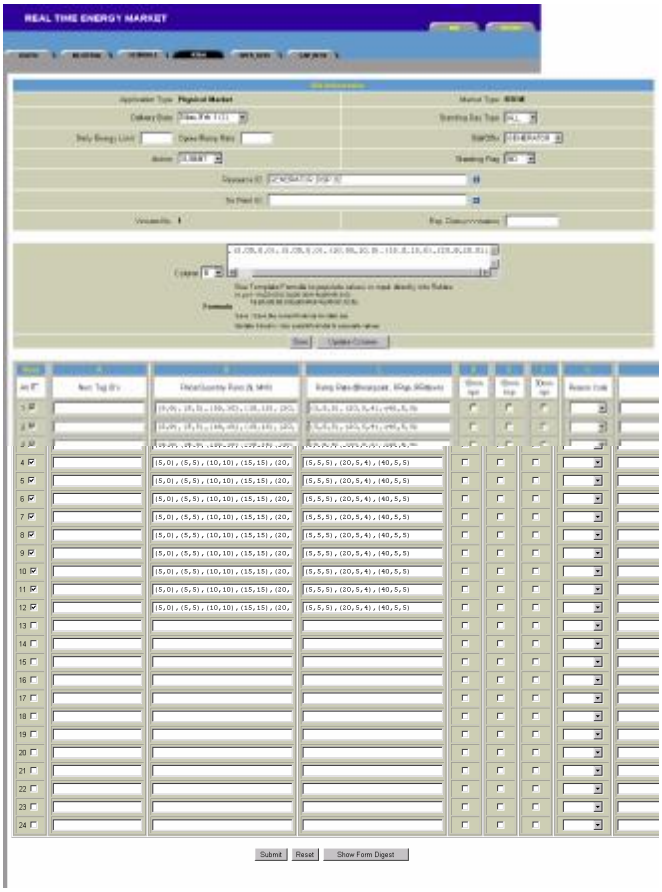

Figure 5-34: Energy Offer Submission (HTML)

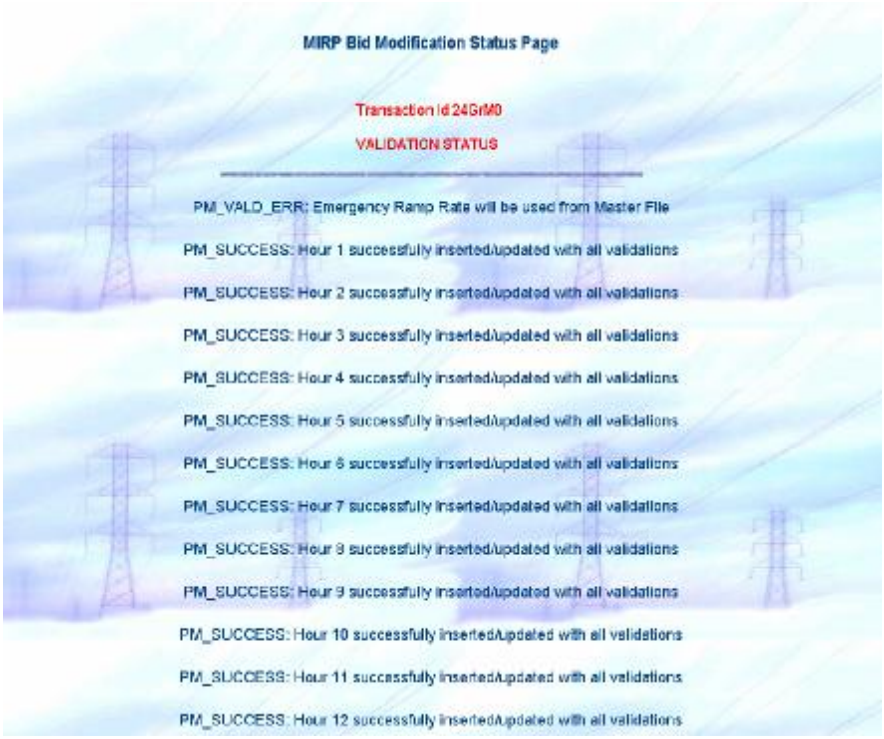

Figure 5-35. Energy Offer Submission (HTML) Status Page

Energy Bid/Offer Retrieval/Submission (ASCII)

Energy Bid/Offer Retrieval (ASCII)

The following tutorial demonstrates the retrieval of an Energy Bid and Offer to a text file and then the resubmission of that text file for different hours.

1. Select the *Main BID Tab* to display the *Market Participant Workspace*.
2. In the *Action* window,
    a) Select the *Template* radio button.
    b) Select the *Retrieve* radio button.
    c) Select *Full* in the pull-down box.
    d) Click the ***BROWSE…*** button and enter a filename and location for the download file.
3. In the *Application* window,
    a) Select *Physical* in the *Market Type* pull-down box.
    b) Select the *Delivery Date* as tomorrow.
4. For hours 1 through 12 inclusive, select the *Hour* checkbox.
5. In the *Physical Market Window (RTEM Section),*
    a) Select the *RTEM* checkbox.
    b) Select *GENERATOR* and *LOAD* in the *Bid Type* list box.

Note: Only some of the details are provided. This is because both a Bid and Offer are to be retrieved in this tutorial. Remember that this is only possible when retrieving to a file unless the query only yields a single result.

6. Click the ***SUBMIT*** button at the bottom of the page.

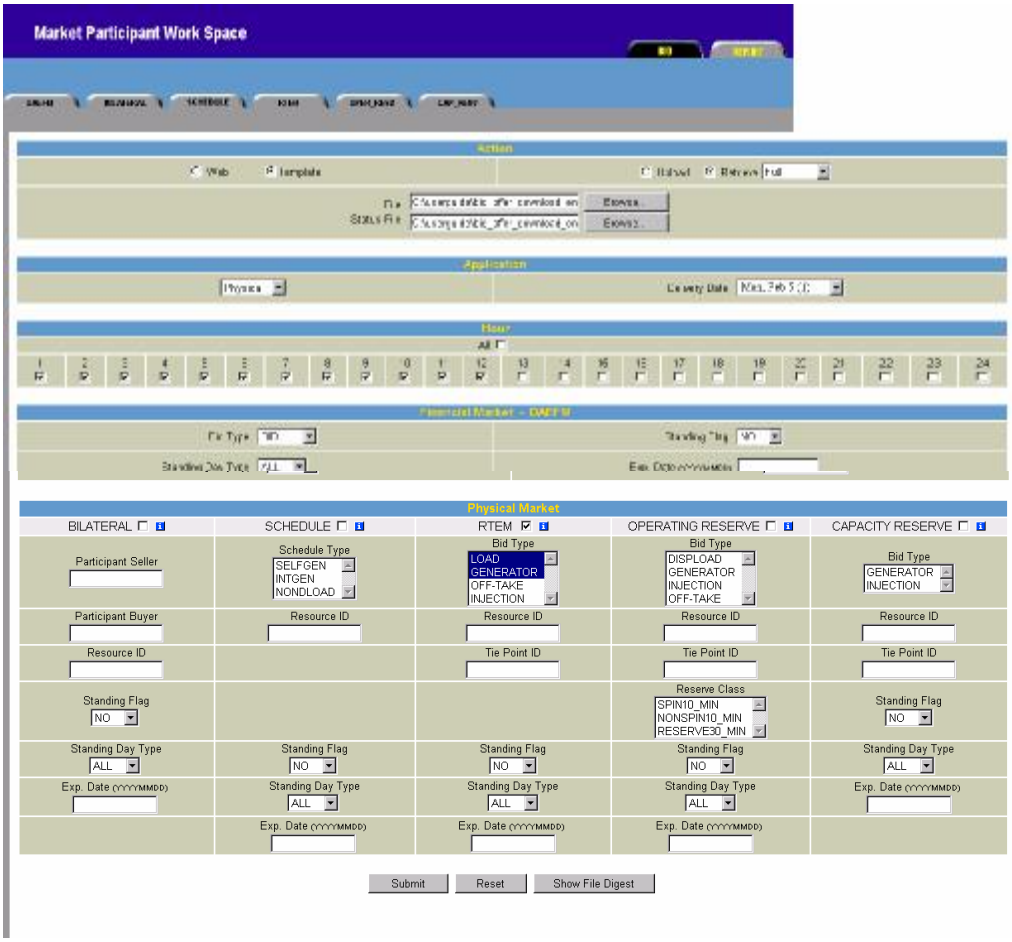

Figure 5-36: Energy Bid/Offer Retrieval/Submission (ASCII)

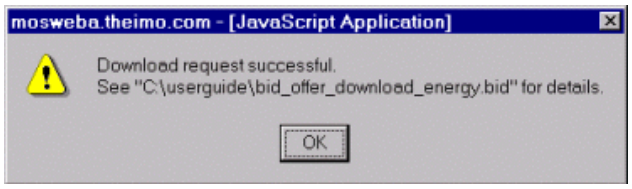

Figure 5-37: Download Request Successful Dialog

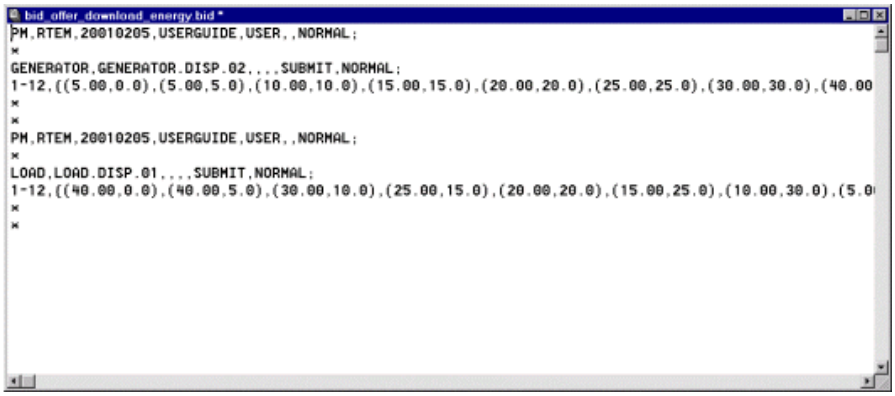

Figure 5-38: Downloaded Energy Bid/Offer File

Energy Bid/Offer Submission (ASCII)

The following tutorial demonstrates to the user how to upload an ASCII Text File.

1. In a suitable text editor, PFE for example, modify the previously downloaded file so that the hours 13-24 are submitted.

2. Save the file as a different filename.

3. In the MPI, select the *Main BID Tab* to display the *Market Participant Workspace*.

4. In the *Action* window,

   a) Select the *Template* radio button.

   b) Select the *Upload* radio button.

   c) Click the ***BROWSE…*** button and select the modified file.

Note: The location of the *Status File*. By default it is in the same location and has the same filename with an additional *.err* extension.

5. Click the ***SUBMIT*** button at the bottom of the page.

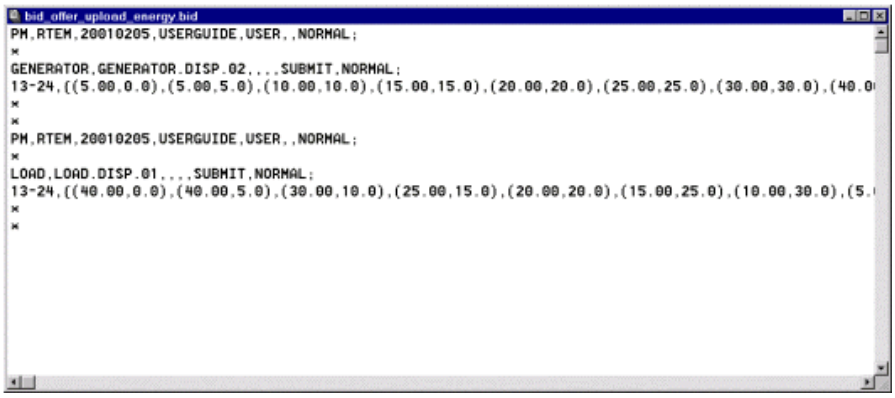

Figure 5-39: Energy Bid/Offer Upload File

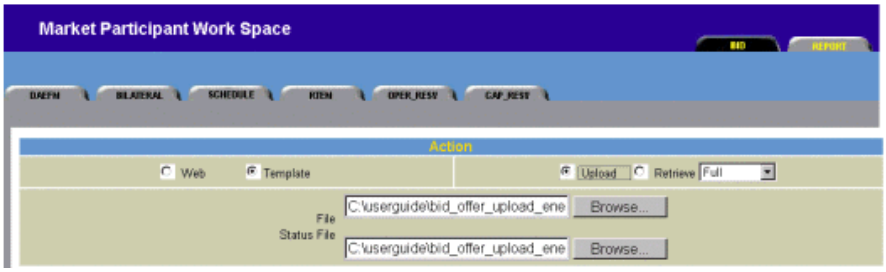

Figure 5-40: Energy Bid/Offer Submission (ASCII)

Figure 5-41: Upload Request Successful Dialog

```
Submission Date : 20010204  17:18:45

Parsing Status for Bid # 1 <PM, RTEM, 20010205, USERGUIDE, USER, GENERATOR.DISP.02>      : Success
Inserting PM bid into database <USERGUIDE, USER>          : Permission granted

PM_VALD_ERR: Emergency Ramp Rate will be used from Master File
PM_SUCCESS: Hour 13 successfully inserted/updated with all validations
PM_SUCCESS: Hour 14 successfully inserted/updated with all validations
PM_SUCCESS: Hour 15 successfully inserted/updated with all validations
PM_SUCCESS: Hour 16 successfully inserted/updated with all validations
PM_SUCCESS: Hour 17 successfully inserted/updated with all validations
PM_SUCCESS: Hour 18 successfully inserted/updated with all validations
PM_SUCCESS: Hour 19 successfully inserted/updated with all validations
PM_SUCCESS: Hour 20 successfully inserted/updated with all validations
PM_SUCCESS: Hour 21 successfully inserted/updated with all validations
PM_SUCCESS: Hour 22 successfully inserted/updated with all validations
PM_SUCCESS: Hour 23 successfully inserted/updated with all validations
PM_SUCCESS: Hour 24 successfully inserted/updated with all validations


Parsing Status for Bid # 2 <PM, RTEM, 20010205, USERGUIDE, USER, LOAD.DISP.01>    : Success
Inserting PM bid into database <USERGUIDE, USER>          : Permission granted

PM_SUCCESS: Hour 13 successfully inserted/updated with all validations
PM_SUCCESS: Hour 14 successfully inserted/updated with all validations
PM_SUCCESS: Hour 15 successfully inserted/updated with all validations
PM_SUCCESS: Hour 16 successfully inserted/updated with all validations
PM_SUCCESS: Hour 17 successfully inserted/updated with all validations
PM_SUCCESS: Hour 18 successfully inserted/updated with all validations
PM_SUCCESS: Hour 19 successfully inserted/updated with all validations
PM_SUCCESS: Hour 20 successfully inserted/updated with all validations
PM_SUCCESS: Hour 21 successfully inserted/updated with all validations
PM_SUCCESS: Hour 22 successfully inserted/updated with all validations
PM_SUCCESS: Hour 23 successfully inserted/updated with all validations
PM_SUCCESS: Hour 24 successfully inserted/updated with all validations



    Transaction ID : 24HIj0

    2 bids received
    2 bids accepted in full
    0 bids rejected in full because of syntax errors
    0 bids partially or fully rejected with bid errors
```

Figure 5-42: Energy Bid/Offer Submission (ASCII) Status File

Energy Bid Retrieval (HTML)

The following tutorial demonstrates to the user how to retrieve an Energy Offer into the WEB in HTML format. Note that this tutorial only covers the retrieval of an offer, as the actions required to retrieve a Bid are the same.

1. Select the *Main BID Tab* to display the *Market Participant Workspace*.

2. In the *Action* window,

    a) Select the *Web* radio button.

    b) Select the *Retrieve* radio button.

    c) Select *Full* in the pull-down box.

3. In the *Application* window,

    a) Select *Physical* in the *Market Type* pull-down box.

    b) Select the *Delivery Date* as tomorrow.

4. In the *Hour* window, select the *All* checkbox so that the hours 1 through 24 are selected.

5. In the *Physical Market Window (RTEM Section),*

   a) Select the *RTEM* checkbox.

   b) Select *GENERATOR* from the *Bid Type* list box.

   c) Enter the *Resource ID*.

Note: Enough information must be supplied to yield a single result. If multiple results are required, the user must download the data to a text file.

6. Click the ***SUBMIT*** button at the bottom of the page.

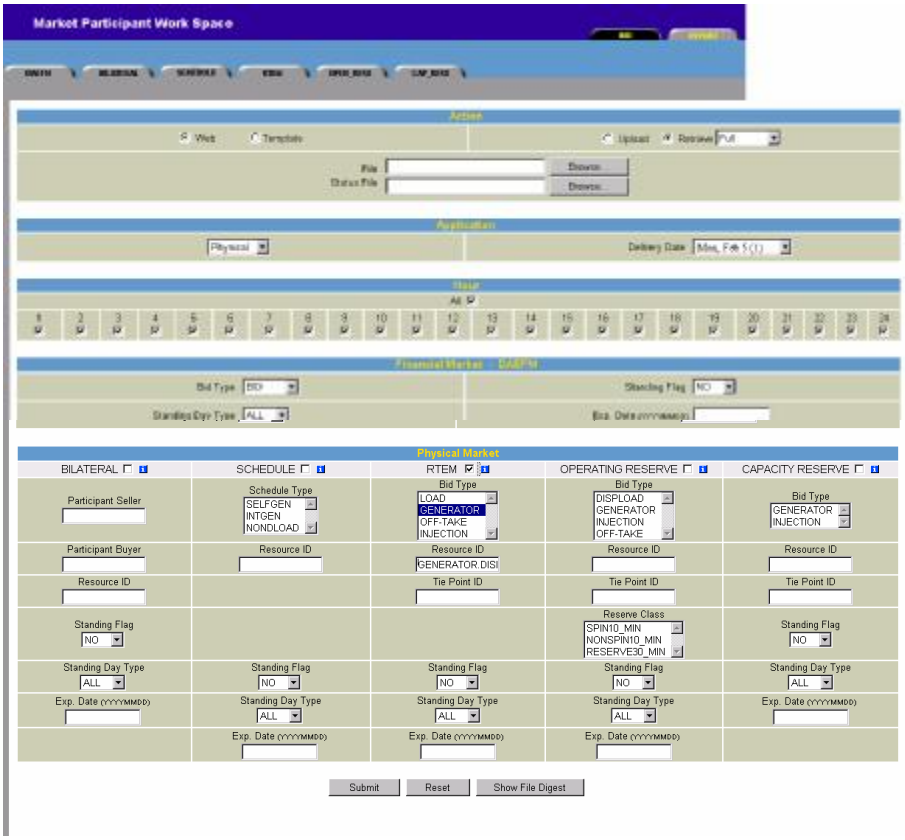

Figure 5-43: Energy Offer/Bid Retrieval (HTML)

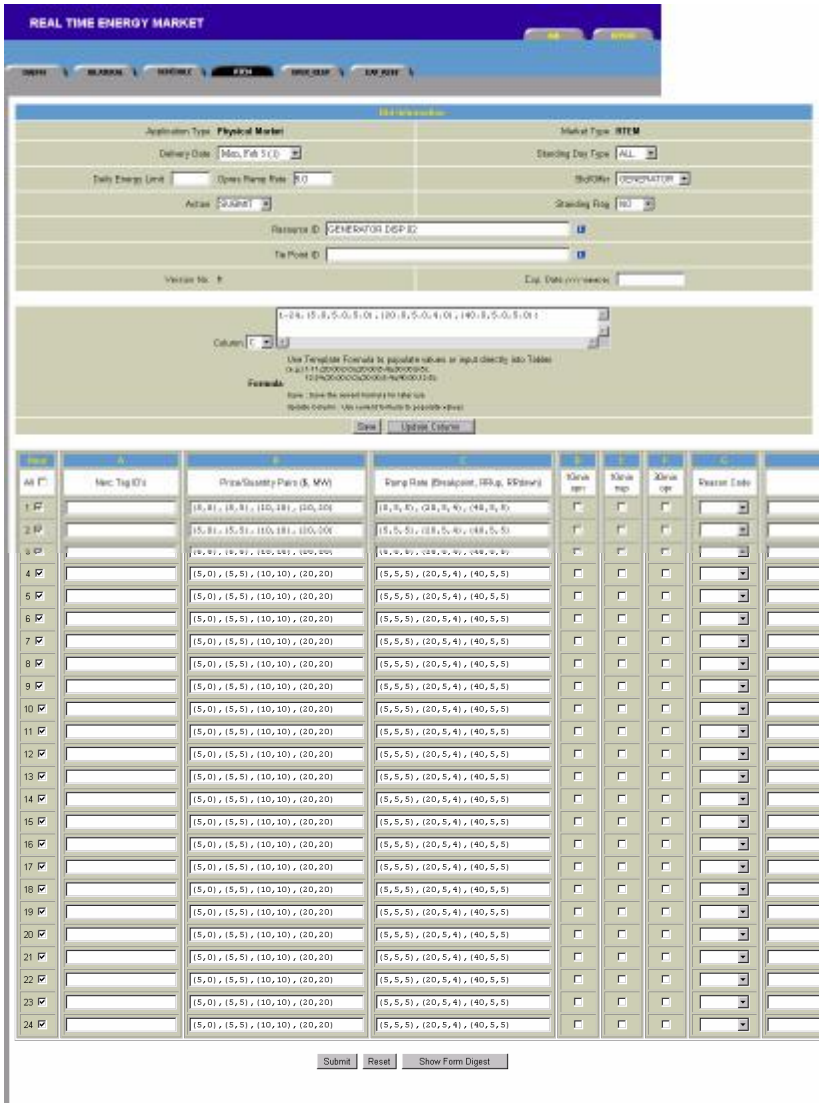

Figure 5-44. Retrieved Energy Offer /Bid (HTML)

Energy Bid Cancellation (HTML)

The following steps show the user how to cancel an Energy Offer by first retrieving the Offer into the web and then submitting those hours as cancelled. The first step is in fact unnecessary as the offer can be cancelled straight from the *RTEM Submission Form.* In cases where the user is dealing with vast amounts of information, it is sometimes better to 'eyeball' the data first to ensure that the correct Offer is cancelled.

1. Repeat the steps detailed in the *Energy Offer Retrieval (HTML)* tutorial but only select 2 hours instead of 24. For example, hour 1 and 2 will be retrieved.

2. In the *Bid Information Window* in the *Bid Submission Form*, change the *Action* to *CANCEL*.

3. Click the ***SUBMIT*** button at the bottom of the page.

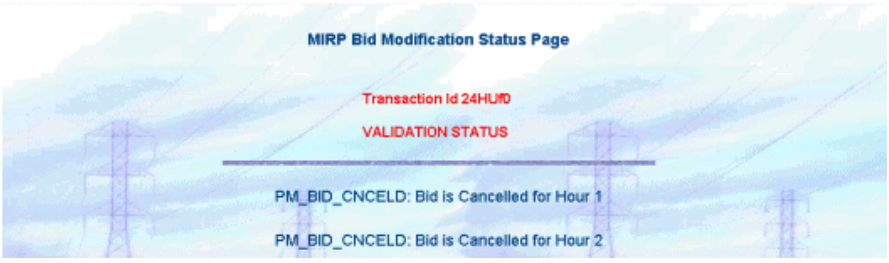

Figure 5-45: Energy Bid/Offer Cancellation (HTML) Status Page

If the user wishes, the whole bid can then be retrieved again by following the steps in the *Energy Offer Bid Retrieval (HTML)* tutorial. The user should notice that the hours that were cancelled in this tutorial are no longer part of the bid.

Energy Bid/Offer Cancellation (ASCII)

1. To retrieve the Energy Bids and Offers to file, follow the steps in the *Energy Bid/Offer Retrieval (ASCII)* tutorial.

2. In an appropriate Text Editor, for example PFE, delete the bid body from the bid and offer. These are the lines starting with the market hour.

3. Replace the deleted lines with the individual hours that are to be cancelled. For example:

   1-4; Hours 1 to 4 will be cancelled

   5; Hours 5 and 7 will be cancelled

   7;

4. In the *Bid Header*, the part that reads, **SUBMIT, NORMAL**, change the text *SUBMIT* to *CANCEL*.

5. Save the file as a different filename.

6. To submit the Bid and Offer cancellation, follow the steps in the *Energy Bid/Offer Submission (ASCII)* tutorial.

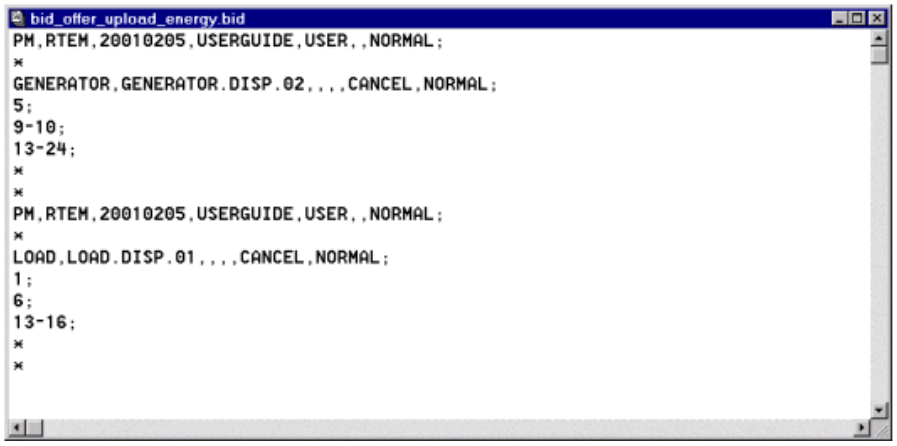

Figure 5-46: Energy Bid/Offer Cancellation File

5.2.8 Operating Reserve (OR) Tutorials

The following tutorials demonstrate to the user how to submit, retrieve, and cancel OR Bids and Offers. There are four types of resource that can be used when submitting *bids* and *offers* into the OR Market:

- *Dispatchable Generators*
- *Dispatchable Loads*
- Injections
- Offtakes

For this tutorial however, only *Dispatchable Generators* and *Dispatchable Loads* will be used.

OR Bid/Offer Submission (HTML)

OR bids and *offers* may be submitted during any open Market Window. For this tutorial however, only day ahead *bids* and offers will be submitted. Short Notice bid/offer submissions will be covered later in this document.

OR Bid Submission (HTML)

OR Bids are submitted for *Load Resources*. These can either be *Dispatchable Loads* within Ontario or Offtake *bids* that result in Energy being dispatched outside of Ontario. If an Offtake bid is submitted, the *Resource Type* must be a *CSP-SINK* and a *Tie Point* must be defined (see Appendix A for a listing of CSP's and MSP's). This tutorial does not cover the submission of Offtakes.

1. Select the *OPER_RESV Market Tab*.
2. Ensure that the *Delivery Date* is tomorrow.
3. Select *SUBMIT* from the *Action* pull-down box.
4. Select *NO* from the *Standing Flag* pull-down box.
5. Select *LOAD* in the *Bid/Offer* pull-down box.
6. If known, enter the name of the *Resource* to be used as the *Pricing Point*. If unknown, press the '+'flag and choose from the list of resources available.
7. If the bid were an *Injection* or *Offtake*, the *Tie Point ID* field would be populated with the appropriate *Tie Point ID* name.
8. Select *10MIN_NONSPIN* from the *Reserve Class* pull-down box.
9. For hours 1 through 12 inclusive, select the *Hour* checkbox.
10. For each of the checked hours, enter a bid, for example:

    (10,0),(10,5),(20,10),(30,15),(40,20)

Note: The following basic rules apply for a BID:

a) The first price and second price must be the same. (**10**,0),(**10**,5),(…

b) The first quantity must be zero. (10,**0**),(10,5),(…

c) The Prices must always increase. …),(**10**,5),(**20**,10),(…

d) The Quantities must always increase. …),(10,**5**),(20,**10**),(…

e) There is a minimum of 2 *price-quantity pairs* for each hour.

f) There is a maximum of 5 *price-quantity pair*s for each hour.

11. For each of the checked hours, enter the *Reserve Loading Point* value.
12. Click the ***SUBMIT*** button at the bottom of the page.

Figure 5-47: Resource Display (OR)

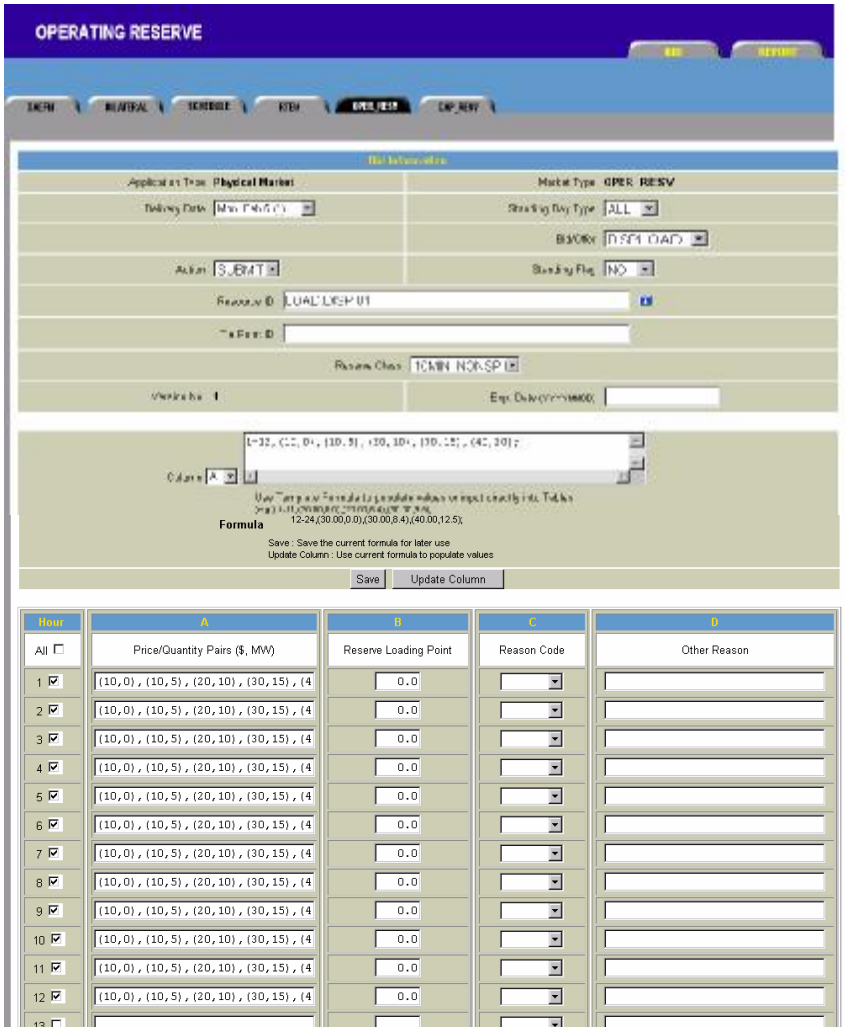

Figure 5-48: OR Bid Submission (HTML)

Figure 5-49: OR Bid Submission (HTML) Status Page

OR Offer Submission (HTML)

OR offers are submitted for *Generator Resources*. These can either be *Dispatchable Generators* within Ontario or Injection *bids* that result in Energy being dispatched into Ontario. If an Injection bid is submitted, the *Resource Type* must be a *CSP-SOURCE* and a *Tie Point* must be defined (see Appendix A for a listing of CSP's and MSP's). This tutorial does not cover the submission of Injections.

1. Select the OPER_RESV Market Tab.
2. Ensure that the *Delivery Date* is tomorrow.
3. Select *SUBMIT* from the *Action* pull-down box.
4. Select *NO* from the *Standing Flag* pull-down box.
5. Select *GENERATOR* in the *Bid/Offer* pull-down box.
6. If known, enter the name of the *Resource* to be used as the *Pricing Point*. If unknown, press the "-" flag and choose from the list of resources available.
7. If the offer is an Injection or Offtake, the Tie Point ID field would be populated with the appropriate Tie Point ID name.

8. Select 10MIN_SPIN from the Reserve Class pull-down box.
9. For hours 1 through 12 inclusive, select the Hour checkbox.
10. For each of the checked hours, enter a bid, for example:
    (5,0),(5,5),(10,10),(15,15),(20,20)

Note: The following basic rules apply for an *OFFER*:

a) The first price and second price must be the same. (**5**,0),(**5**,5)…

b) The first quantity must be zero. (5,**0**),(…

c) The Prices must always increase. …),(**10**,10),(**15**,15),(…

d) The Quantities must always increase. …),(10,**10**),(15,**15**),(…

e) There is a minimum of 2 *price-quantity pairs* for each hour.

f) There is a maximum of 5 *price-quantity pairs* for each hour.

11. For each of the checked hours, enter the Reserve Loading Point value.
12. Click the Submit button at the bottom of the page.

Figure 5-50: Resource Display (OR)

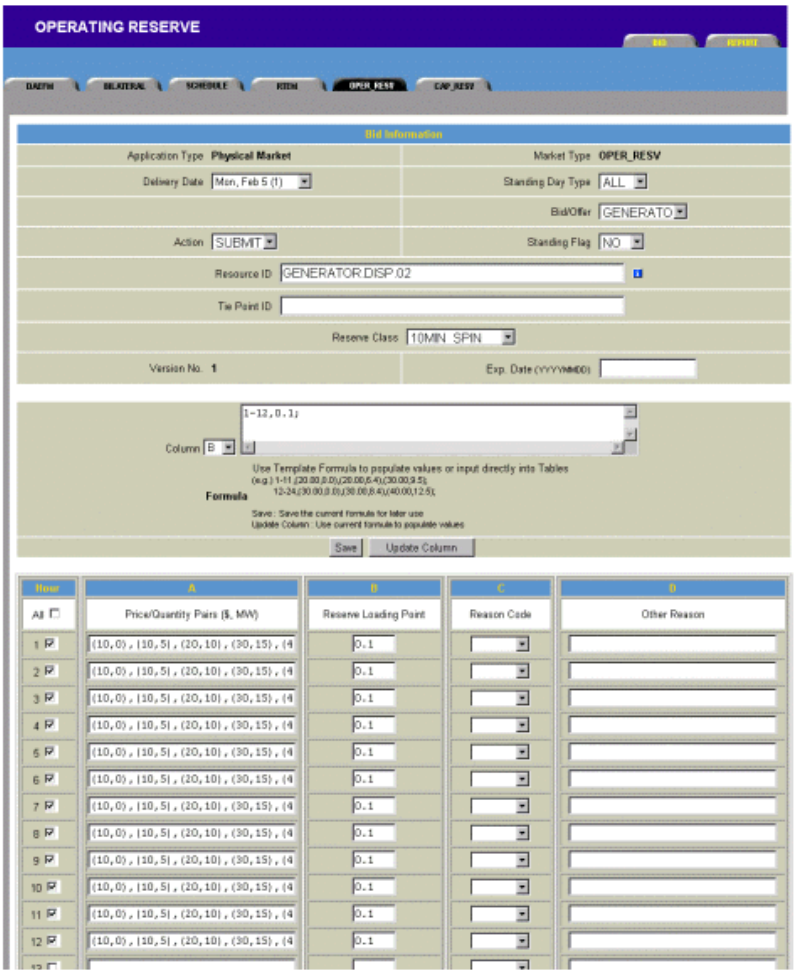

Figure 5-51: OR Offer Submission

Figure 5-52: OR Offer Submission (HTML) Status Page

The user should note that the first two hours of this *Operating Reserve Offer* are rejected. These hours are rejected due to no Energy Offer existing for these first two hours.

OR Bid/Offer Retrieval/Submission (ASCII)

OR Bid/Offer Retrieval (ASCII)

The following tutorial demonstrates the retrieval of an OR Bid and Offer to a text file and then the resubmission of that text file for different hours.

1. Select the Main BID Tab to display the *Market Participant* Workspace.
2. In the *Action* window,
    a) Select the *Template* radio button.
    b) Select the *Retrieve* radio button.
    c) Select *Full* in the pull-down box.
    d) Click the ***BROWSE…*** button and enter a filename and location for the download file.
3. In the *Application* window,
    a) Select *Physical* in the *Market Type* pull-down box.
    b) Select the *Delivery Date* as tomorrow.
4. For hours 1 through 12 inclusive, select the *Hour* checkbox.
5. In the *Physical Market Window (Operating Reserve* section),
    a) Select the *OPERATING RESERVE* checkbox.
    b) Select *GENERATOR* and *DISPLOAD* in the *Bid Type* list box.

Note: Only some of the details are provided. This is because both a Bid and Offer are to be retrieved in this tutorial. Remember that this is only possible when retrieving to a file unless the query only yields a single result.

6. Click the ***SUBMIT*** button at the bottom of the page.

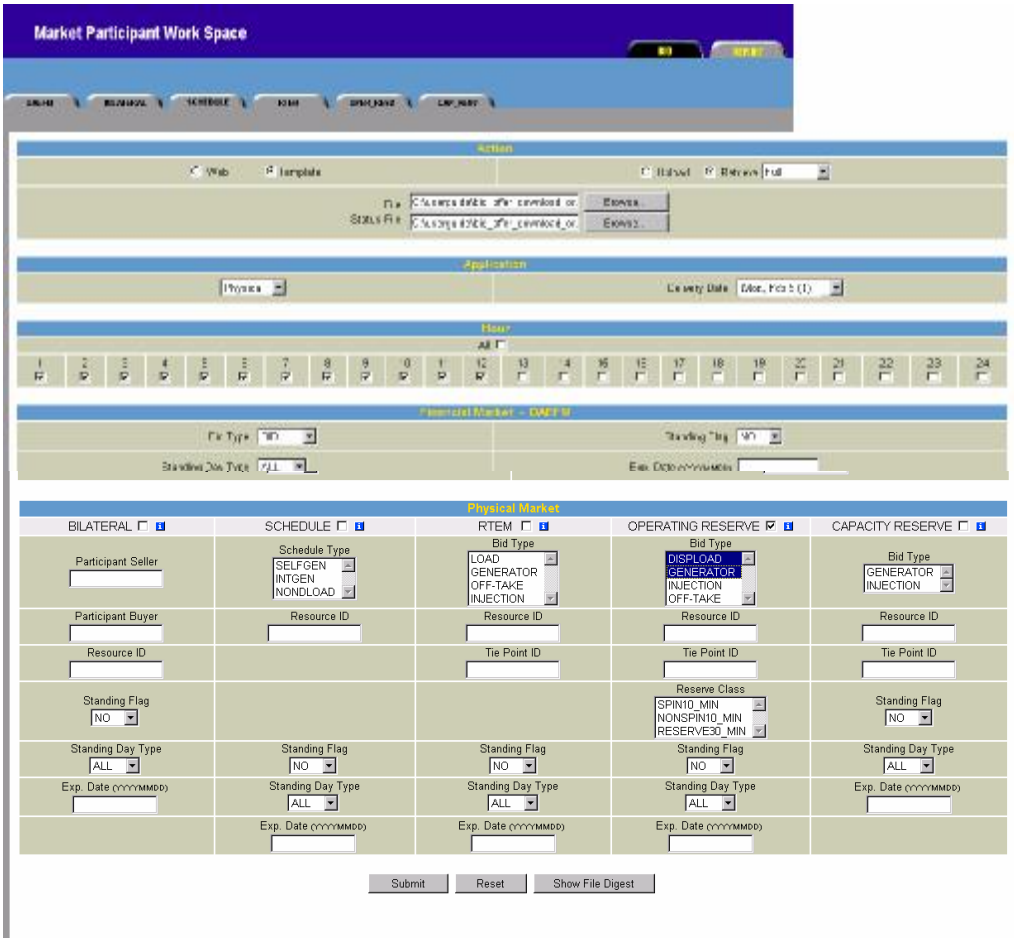

Figure 5-53: OR Bid/Offer Retrieval/Submission (ASCII)

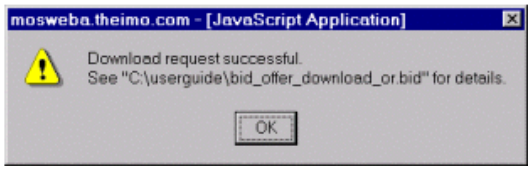

Figure 5-54: Download Request Successful Dialog

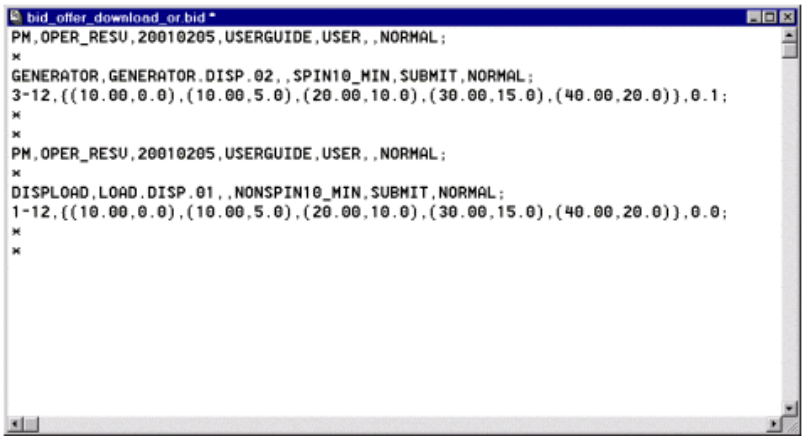

Figure 5-55: Downloaded OR Bid/Offer File

OR Bid/Offer Submission (ASCII)

The following tutorial demonstrates to the user how to upload an ASCII Text File.

1. In a suitable text editor, PFE for example, modify the previously downloaded file so that the hours 13-24 are submitted.

2. Save the file as a different filename.

3. In the MPI, select the *Main BID Tab* to display the *Market Participant Workspace*.

4. In the *Action* window,

    a) Select the *Template* radio button.

    b) Select the *Upload* radio button.

    c) Click the ***BROWSE…*** button and select the modified file.

Note: Notice the location of the *Status File*. By default it is in the same location and has the same filename with an additional *.err* extension.

5. Click the ***SUBMIT*** button at the bottom of the page.

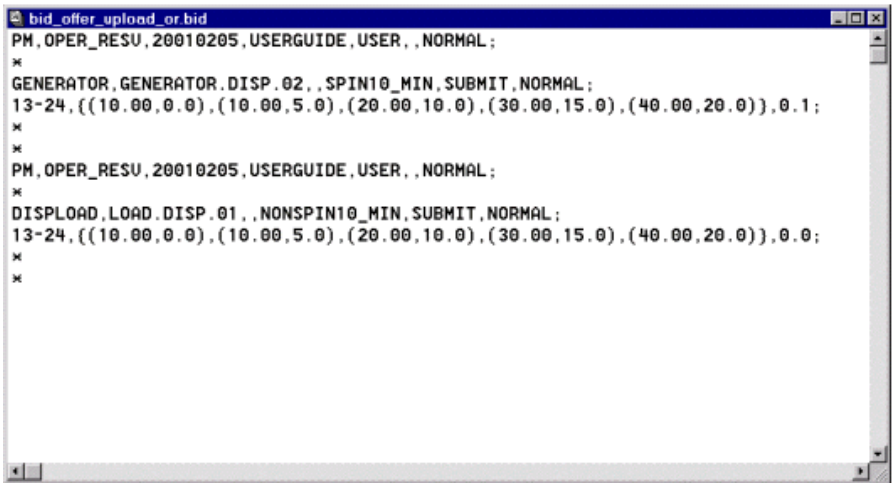

Figure 5-56: OR Bid/Offer Upload File

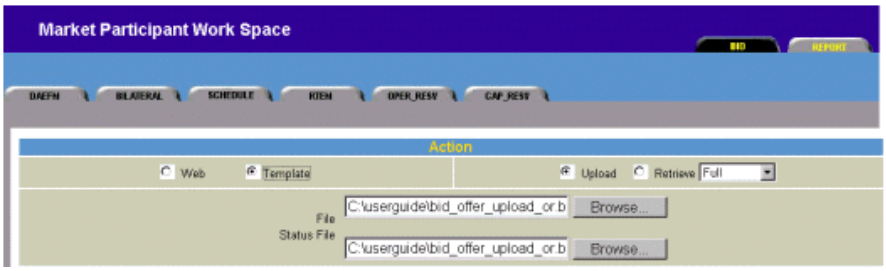

Figure 5-57: OR Bid/Offer Submission (ASCII)

Figure 5-58: Upload Request Successful Dialog

```
Submission Date : 20010204  18:23:52

Parsing Status for Bid # 1 <PM, OPER_RESU, 20010205, USERGUIDE, USER, GENERATOR.DISP.02>         : S
Inserting PM bid into database <USERGUIDE, USER>         : Permission granted

PM_SUCCESS: Hour 13 successfully inserted/updated with all validations
PM_SUCCESS: Hour 14 successfully inserted/updated with all validations
PM_SUCCESS: Hour 15 successfully inserted/updated with all validations
PM_SUCCESS: Hour 16 successfully inserted/updated with all validations
PM_SUCCESS: Hour 17 successfully inserted/updated with all validations
PM_SUCCESS: Hour 18 successfully inserted/updated with all validations
PM_SUCCESS: Hour 19 successfully inserted/updated with all validations
PM_SUCCESS: Hour 20 successfully inserted/updated with all validations
PM_SUCCESS: Hour 21 successfully inserted/updated with all validations
PM_SUCCESS: Hour 22 successfully inserted/updated with all validations
PM_SUCCESS: Hour 23 successfully inserted/updated with all validations
PM_SUCCESS: Hour 24 successfully inserted/updated with all validations


Parsing Status for Bid # 2 <PM, OPER_RESU, 20010205, USERGUIDE, USER, LOAD.DISP.01>       : Success
Inserting PM bid into database <USERGUIDE, USER>         : Permission granted

PM_SUCCESS: Hour 13 successfully inserted/updated with all validations
PM_SUCCESS: Hour 14 successfully inserted/updated with all validations
PM_SUCCESS: Hour 15 successfully inserted/updated with all validations
PM_SUCCESS: Hour 16 successfully inserted/updated with all validations
PM_SUCCESS: Hour 17 successfully inserted/updated with all validations
PM_SUCCESS: Hour 18 successfully inserted/updated with all validations
PM_SUCCESS: Hour 19 successfully inserted/updated with all validations
PM_SUCCESS: Hour 20 successfully inserted/updated with all validations
PM_SUCCESS: Hour 21 successfully inserted/updated with all validations
PM_SUCCESS: Hour 22 successfully inserted/updated with all validations
PM_SUCCESS: Hour 23 successfully inserted/updated with all validations
PM_SUCCESS: Hour 24 successfully inserted/updated with all validations



     Transaction ID : 24INq0

     2 bids received
     2 bids accepted in full
     0 bids rejected in full because of syntax errors
     0 bids partially or fully rejected with bid errors
```

Figure 5-59: OR Bid/Offer Submission (ASCII) Status File

OR Bid Retrieval (HTML)

The following tutorial demonstrates to the user how to retrieve an OR Offer into the WEB in HTML format. Note that this tutorial only covers the retrieval of an Offer, as the actions required to retrieve a Bid are the same.

1. Select the *Main BID Tab* to display the *Market Participant Workspace*.
2. In the *Action* window,
    a) Select the *Web* radio button.
    b) Select the *Retrieve* radio button.
    c) Select *Full* in the pull-down box.
3. In the *Application* window,
    a) Select *Physical* in the *Market Type* pull-down box.
    b) Select the *Delivery Date* as tomorrow.
4. In the *Hour* window, select the *All* checkbox so that the hours 1 through 24 are selected.
5. In the *Physical Market Window (Operating Reserve* section),
    a) Select the *OPERATING RESERVE* checkbox.
    b) Select *GENERATOR* from the *Bid Type* list box.
    c) Enter the *Resource ID*.

Note: Select *10MIN_SPIN* from the *Reserve Class* pull-down box.

Note: Enough information must be supplied to yield a single result. If multiple results are required, the user must download the data to a text file.

6. Click the ***SUBMIT*** button at the bottom of the page.

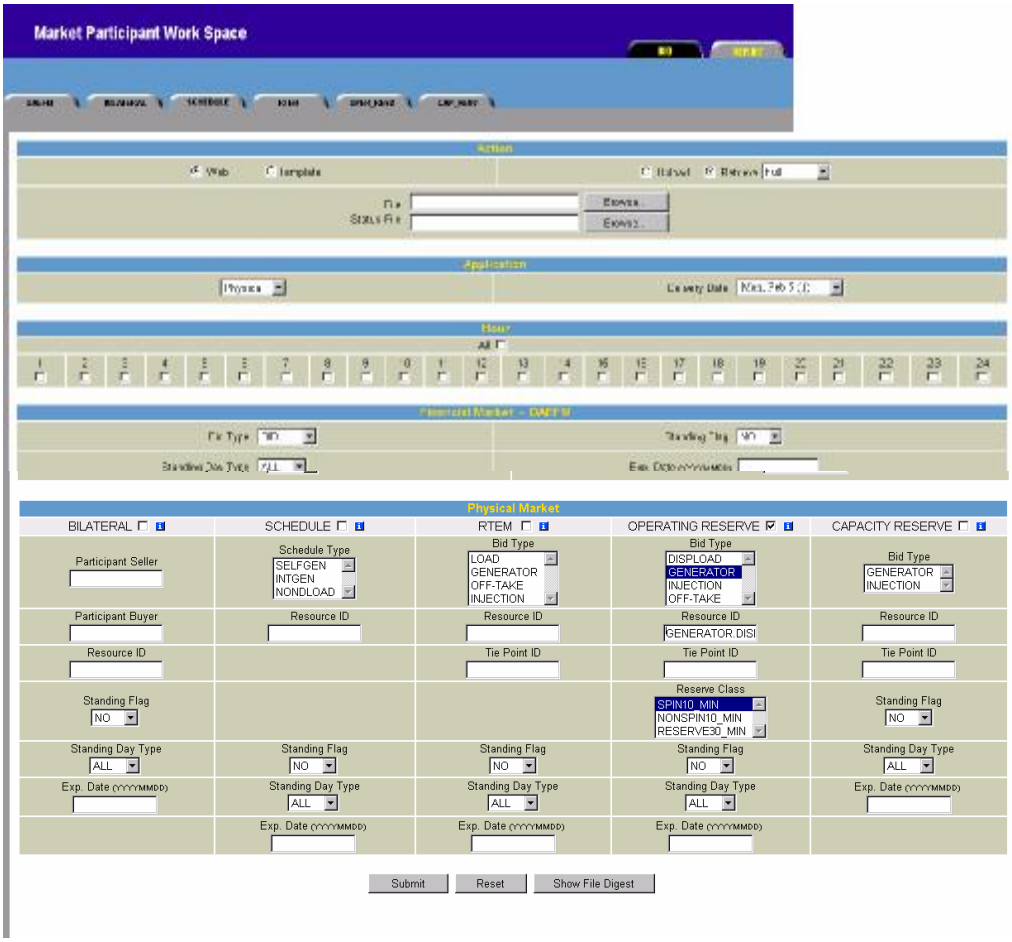

Figure 5-60: OR Offer Retrieval (HTML)

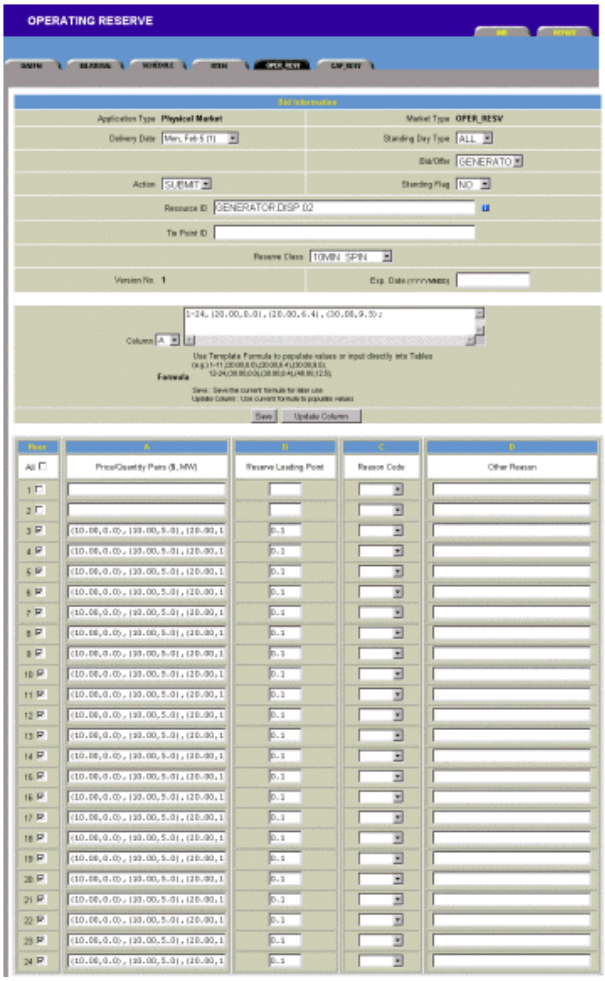

Figure 5-61: Retrieved OR Offer (HTML)

OR Bid Cancellation (HTML)

The following steps show the user how to cancel an OR Offer by first retrieving the Offer into the web and then submitting those hours as cancelled. The first step is in fact unnecessary as the offer can be cancelled straight from the *RTEM Submission Form*. In cases where the user is dealing with vast amounts of information, it is sometimes better to 'eyeball' the data first to ensure that the correct Offer is cancelled.

1. Repeat the steps detailed in the *OR Offer Retrieval (HTML)* tutorial but only select 2 hours instead of 24. For example, hour 1 and 2 will be retrieved.

2. In the *Bid Information Window* in the *Bid Submission Form*, change the *Action* to *CANCEL*.

3. Click the ***SUBMIT*** button at the bottom of the page.

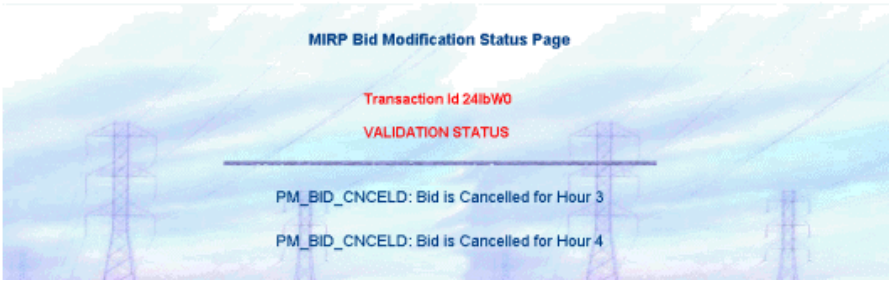

Figure 5-62: OR Offer Cancellation (HTML) Status Page

If the user wishes, the whole bid can then be retrieved again by following the steps in the *Energy Offer Bid Retrieval (HTML)* tutorial. The user should notice that the hours that were cancelled in this tutorial are no longer part of the bid.

OR Bid/Offer Cancellation (ASCII)

1. To retrieve the OR Bids and Offers to file, follow the steps in the *OR Bid/Offer Retrieval (ASCII)* tutorial.

2. In an appropriate Text Editor, for example PFE, delete the bid body from the bid and offer. These are the lines starting with the market hour.

3. Replace the deleted lines with the individual hours that are to be cancelled. For example:

   1-4; Hours 1 to 4 will be cancelled

   5; Hours 5 and 7 will be cancelled

   7;

4. In the *Bid Header*, the part that reads, **SUBMIT, NORMAL**, change the text *SUBMIT* to *CANCEL*.

5. Save the file as a different filename.

6. To submit the Bid and Offer cancellation, follow the steps in the *OR Bid/Offer Submission (ASCII)* tutorial.

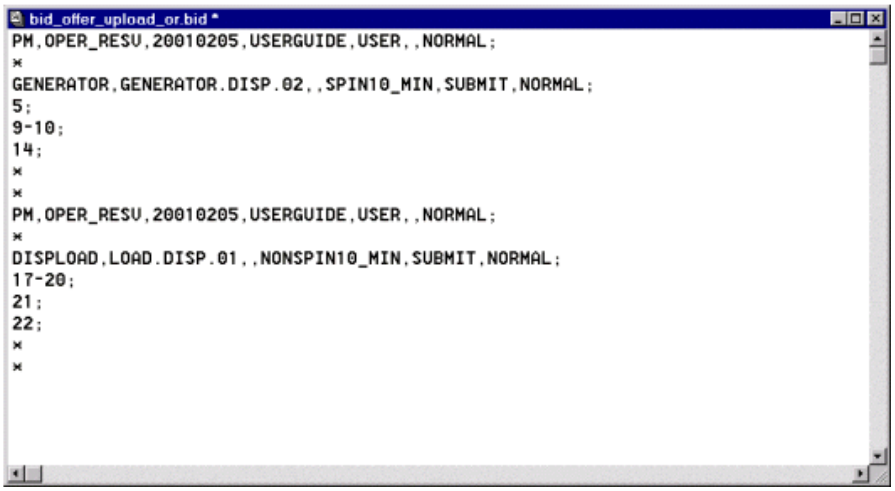

Figure 5-63: OR Bid/Offer Cancellation File

5.2.9 Capacity Reserve

Due to the *Capacity Reserve Market* being suspended, no tutorials are available. This portion of the document will be updated at a later date.

5.3 Summaries

The following tutorial demonstrates the retrieval of a *Summary Report* for all market types.

1. Select the *Main BID Tab* to display the *Market Participant Workspace*.
2. In the *Action* window,
   a) Select the *Web* radio button.
   b) Select the *Retrieve* radio button.
   c) Select *Summary* in the pull-down box.
3. In the *Application* window,
   a) Select *Both* in the *Market Type* pull-down box.
   b) Select the *Delivery Date* as tomorrow.
4. In the *Hour* window, select the *All* checkbox so that the hours 1 through 24 are selected.
5. In the *Financial Market Window*, select *BOTH* in the *Bid Type* pull-down box.

6. In the *Physical Market Window*:

   a) Select the *BILATERAL* checkbox.

   b) Select the *SCHEDULE* checkbox.

   c) Select the *RTEM* checkbox,

   d) Select the *OPERATING RESERVE* checkbox.

7. Click the ***SUBMIT*** button at the bottom of the page.

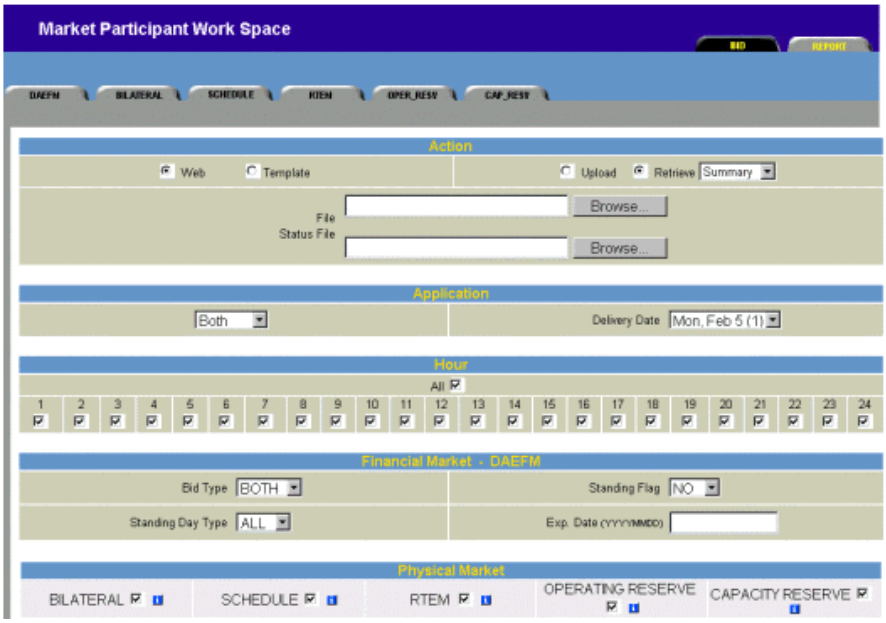

Figure 5-64: Summary Retrieval (HTML)

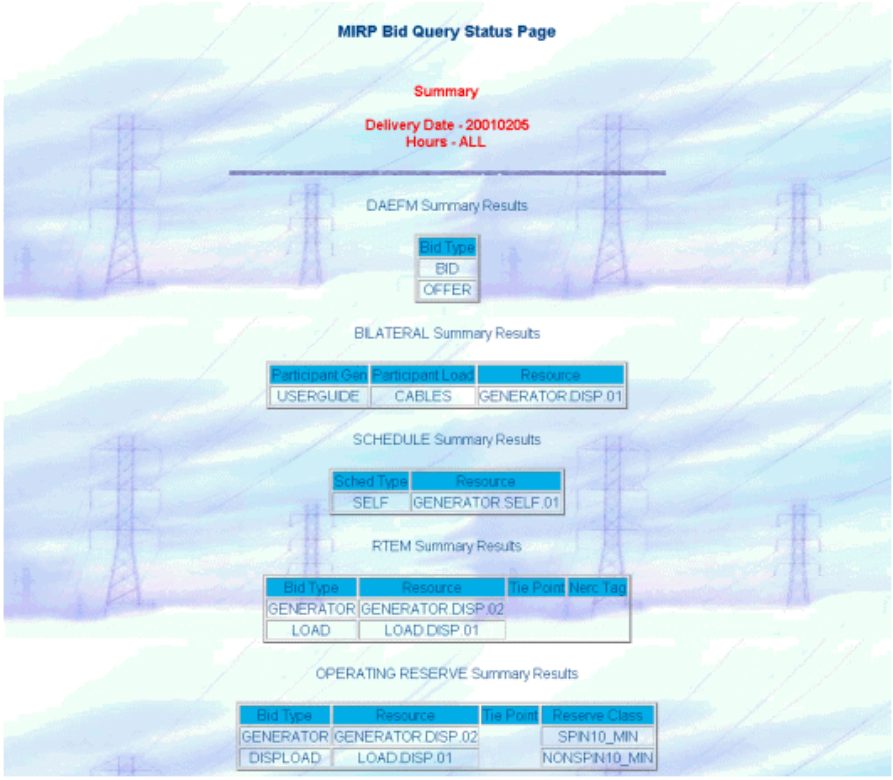

Figure 5-65: Market Summary Display

5.4 Standing Bids

The submission of Standing Bids and Offers (for those markets in which they are available) is done using the same methods as covered in the tutorials for bid and offer submissions, retrievals and cancellations.

All that differs with standing *bids* is the extra controls that must be utilised; *Standing Bid Flag, Standing Bid Day* and *Expiry Date*, with extra validation rules about the submission of Standing Bids.

There are two main points that should be considered when using Standing Bids. These are;

- Standing Bids must NOT overlap, nor can they co-exist with other standing *bids* of the same day type. For example:
  - It is not possible to have two standing *bids* of Type *WED*, one that expires this Wednesday and another that takes effect after.

- It is also not possible to have a Standing Bid of any of the weekly *Day Types*, *MON* through to *SUN* co-existing with a *Standing Bid Type* of *ALL*. If an *ALL* type standing bid is to be submitted, all other Standing Bids for that *Resource* must first be cancelled.
- Standing Bids expire at midnight. This means that if a standing bid of Type *WED* has an expiry date of Tues 16th, it will not be cancelled on Tuesday, but will be for Wednesday's market and will be cancelled at midnight on Wednesday.

5.5 Short Notice Submissions

Short Notice Submissions are *bids* and offers submitted into the *Real Time Energy Market* (*Schedules, Energy* and *Operating Reserve*) within 4 hours of that hourly market closing.

The rules surrounding *bids* and offers being submitted within these timeframes are covered in this document in Section 5.2, *Real Time Energy Market Tutorials*.

This section is provided to show the messages generated when a short notice bid or offer is submitted, accepted by the *IESO* Operator or rejected by the *IESO* Operator.

Deleted: *IMO*

Deleted: *IMO*

5.5.1 Short Notice Office Submission

The generated message for short notice submission is the same for all market types. In this example, an Energy Offer was submitted for all 24 hours for the current delivery date. Some hours are closed, and some require operator approval.

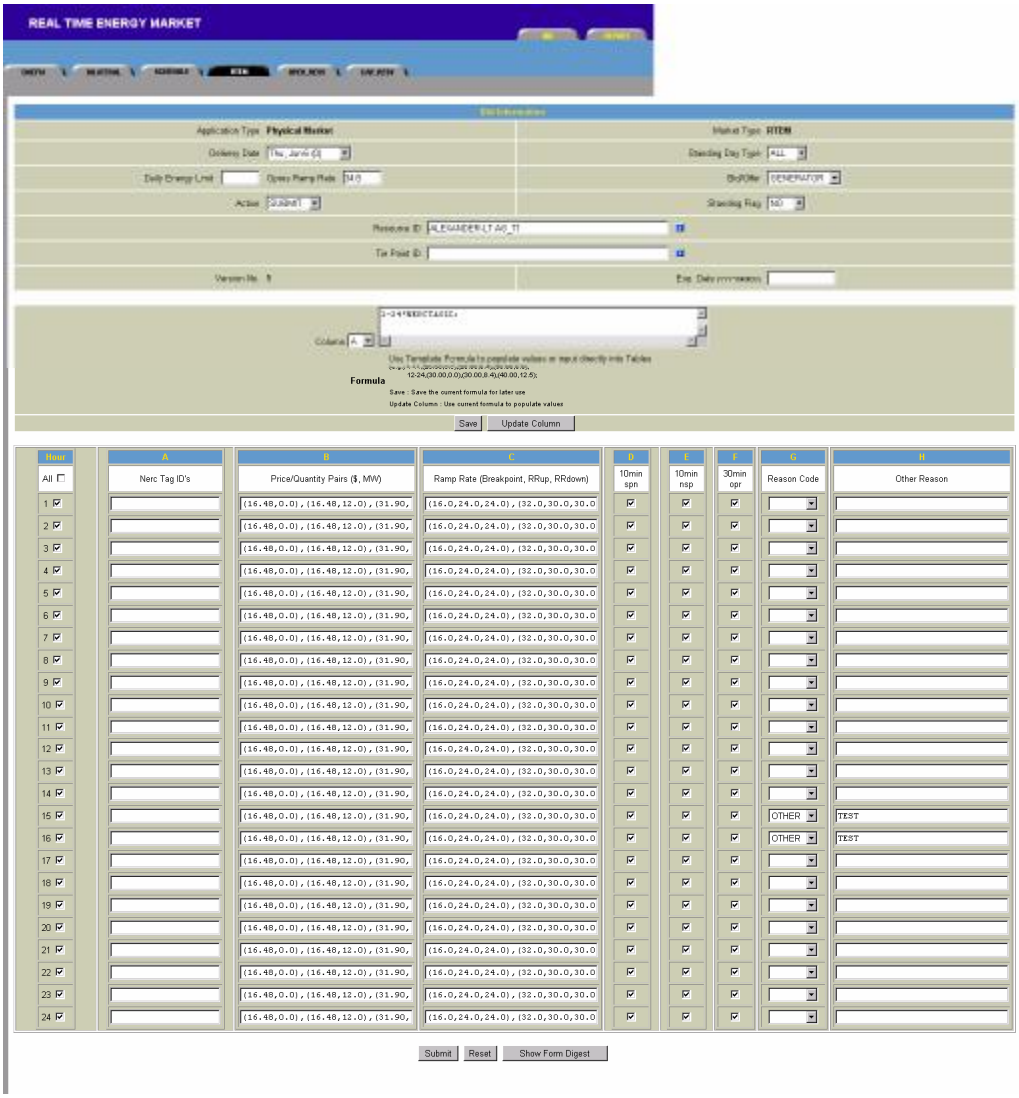

Figure 5-66: Short Notice Energy Offer (HTML)

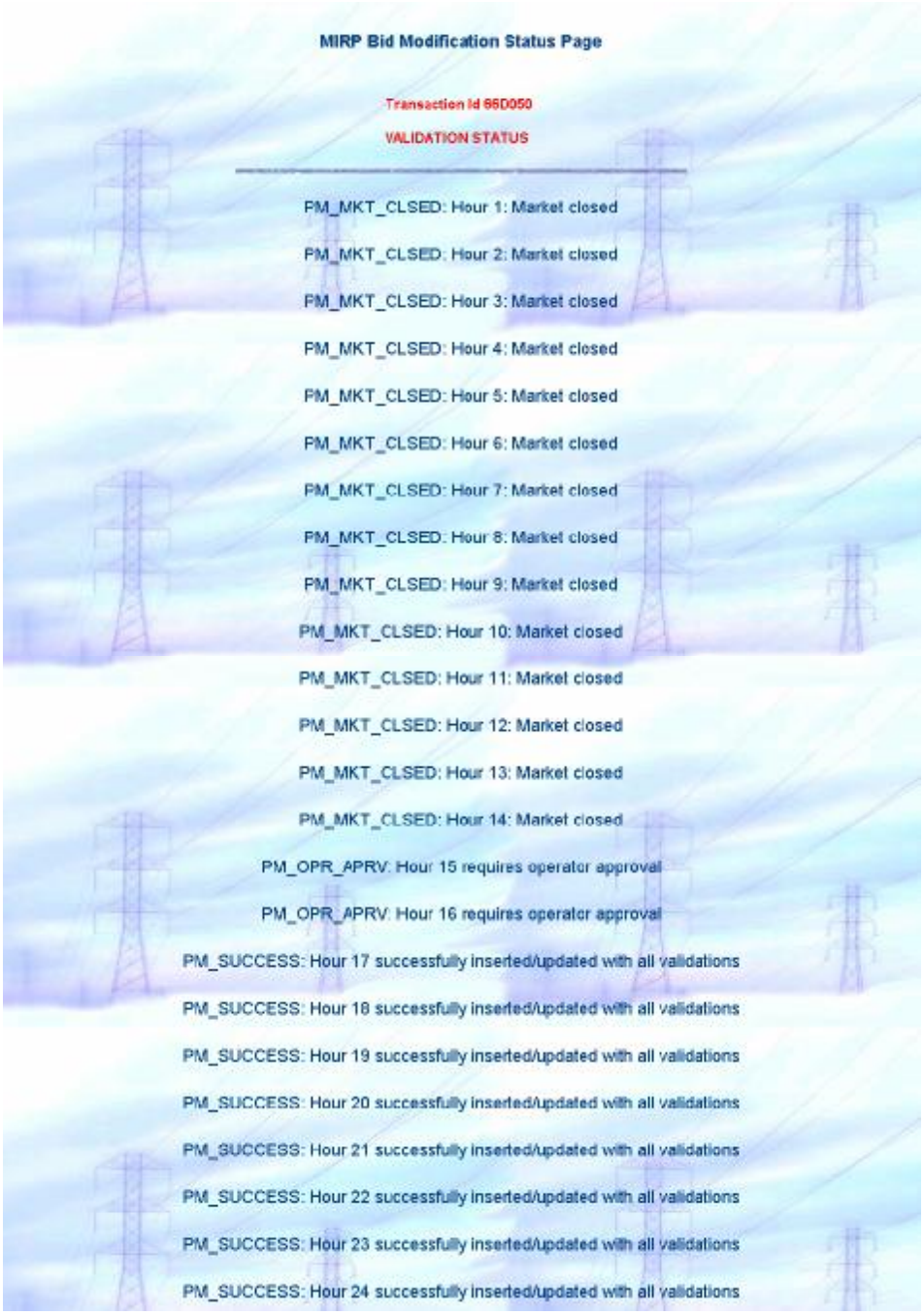

Figure 5-67: Short Notice Energy Offer Status Page

5.5.2 Approval of Short Notice Offer

The following figure shows how the participant will be notified when a *Short Notice Offer* is accepted by an *IESO* Operator.

Deleted: *IMO*

Figure 5-68: Short Notice Submission Acceptance Message

5.5.3 Rejection of Short Notice Offer

The following screen shot shows how the participant will be notified when a *Short Notice Offer* is rejected by an *IESO* Operator.

Deleted: *IMO*

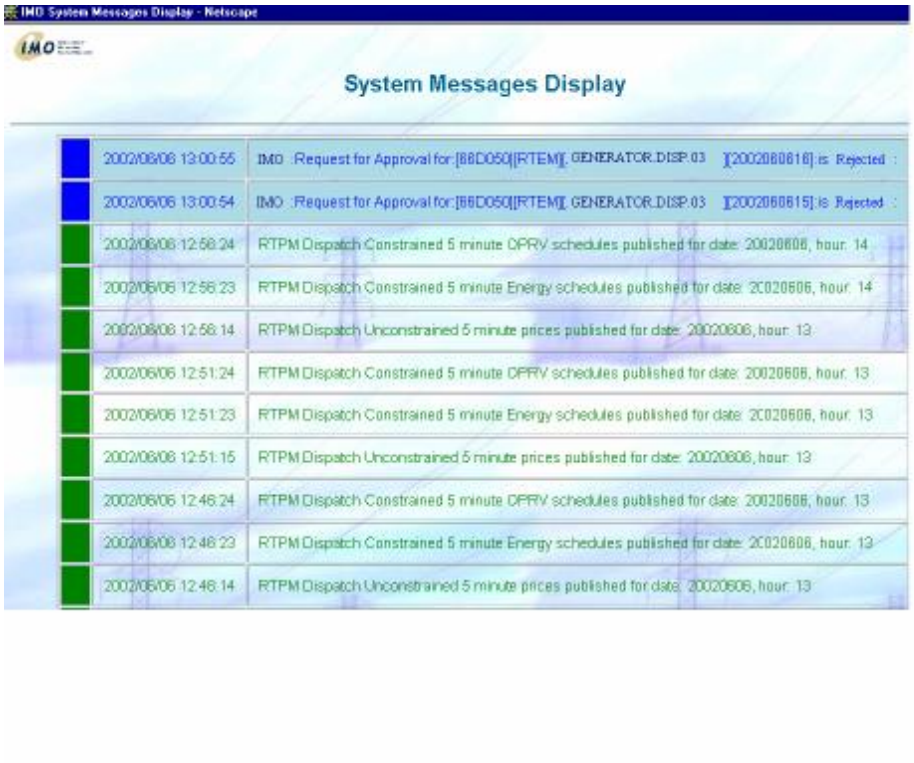

Figure 5-69: Short Notice Submission Rejection Message

- End of Section -

Appendix A: Known MPI Problems

A.1 Netscape Communicator

1. When using Netscape 4.7x to access the MPI on Windows XP, the browser may abruptly terminate when navigating between MPI applications. There is no known fix for this problem at the time of this documentation and there is no planned solution due to the migration by the IESO to Internet Explorer for MPI use.

2. There are some other issues with the MPI and Netscape Communicator 4.7X with window resizing when using Windows XP. Resizing of the browser window may cause an interruption in the security context for the session and require the user to login again. As a workaround the browser window should not be resized during an MPI session.

3. On occasion the user's browser SSL session security context may be interrupted and lost for various reasons. Under such circumstances the user will be required to represent their browser based (imported p12) certificate for re-establishment of the SSL session and security context in order to continue using the MPI. This is dealt with in section 4.1.3

Formatted: Bullets and Numbering

A.2 Internet Explorer

1. The familiar login activity reciprocating bar icon on the MPI login page does not reliably display during the login process and the "Login" button does not change to "Login in Progress" upon activating it. This is purely cosmetic and does not indicate that login is not progressing. This will likely be addressed in subsequent market facing releases (post 13.1).

2. Use of Internet Explorer with the MPI has certain consequences to MV-WEB users who access the MPI with Internet Explorer. Upon choosing to re-direct to the 'Metering' site within the MPI menu, unless the user has administrative rights to enable a one-time file download, access to the Metering application will fail. No indication of the failure is displayed on the MPI GUI and the user will not be made aware of what the underlying problem is. This is detailed in *the Participant Technical Reference Manual*.

3. Within the MPI workspace, when accessing reports the MPI GUI will become visibly garbled when retrieving reports and then using the browser back button afterwards. To workaround this problem, the browser right mouse button Refresh command can be used to refresh the MPI display within the MPI Workspace. See Figure A-1 and A2

Formatted: Bullets and Numbering

Formatted

Figure A-1: Corrupted MPI Workspace GUI -Internet Explorer

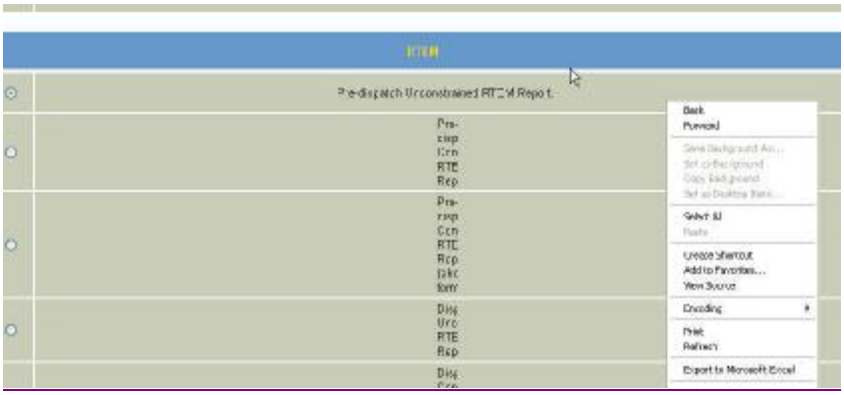

Figure A-2: Corrupted MPI Workspace GUI -Right Mouse Button Refresh

4. Internet Explorer 6.0 SP1 use with Windows XP-SP2. Login to the MPI (and use) when using this combination presents problems due to the security functionality added in by Microsoft for Windows XP-SP2. The pop-up blocker functionality in IE activated with Windows XP-SP2 use, must be configured to allow pop-ups from the MOSWEB url(s) to enable the Market Status and System Messages windows within the MPI. Login to the MPI with this combination will also fail on the first

attempt by the user. Figure A-3 illustrates the initial login attempt result. Using the browser back button and then re-logging in with the certificate and password will be successful on the second try. These MPI problems and others will be analyzed and tested for potential solutions for a near future market facing release.

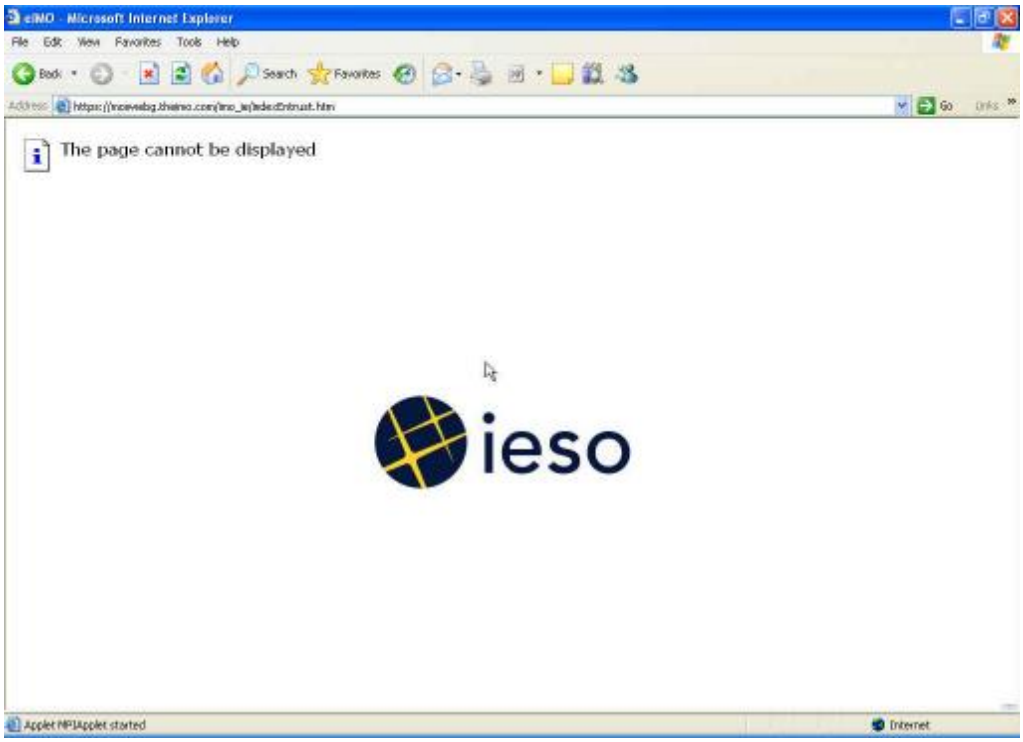

Figure A-3: Initial MPI Login Failure with Internet Explorer and Windows XP-SP2

References

Document Name	Document ID
Java 2 Runtime Environment	Non-*IESO* (http://java.sun.com/)
Market Manual 1: Market Entry, Maintenance & Exit; Part 1.3: PKI Operations Guide	IMP_GDE_0088
Market Manual 6, Participant Technical Reference Manual, Section 2, Participant Workstation Network and Security	IMO_MAN_0024
IMO Developer's Toolkit (IDK), Implementation Manual	IMO_MAN_0023

Formatted

- End of Section -

- End of Document-