Tools Refresh – Emergency Procedures Application

Chidi Ike-Egbuonu
Outage Analysis Technologies

Training – 01/15

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Agenda

- Background
- Timeline
- Changes to User Interface
- Application Access
- Browserless XML Changes
- Application Demo
- Scheduled Future Enhancements

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Background

- The Emergency Procedures application was created to make everyone aware of emergency conditions currently occurring in PJM.
  - First posting created in 1999.
  - PJM members also notified of emergency conditions via All Call messages.
- PJM Manual 13 (Emergency Operations) defines the emergency conditions and expected responses.

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- Guest login access granted to non-PJM personnel via:
  - eSuite.
  - Emergency Procedures link on pjm.com.
  - Emergencies button on eData.
  - OASIS ➔ System Information ➔ Emergency Procedures.
  - eDART ➔ PJM Status Report ➔ SSR Report

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- January 2015
  - Online training demo.
- February to March 2015
  - Parallel Operations planned.
  - Sandbox version of new tool available.
- March 2015
  - Production release of initial enhancements.
- June 2015
  - Production release of Phase 2 enhancements.
- Quarterly releases of enhancements as needed.

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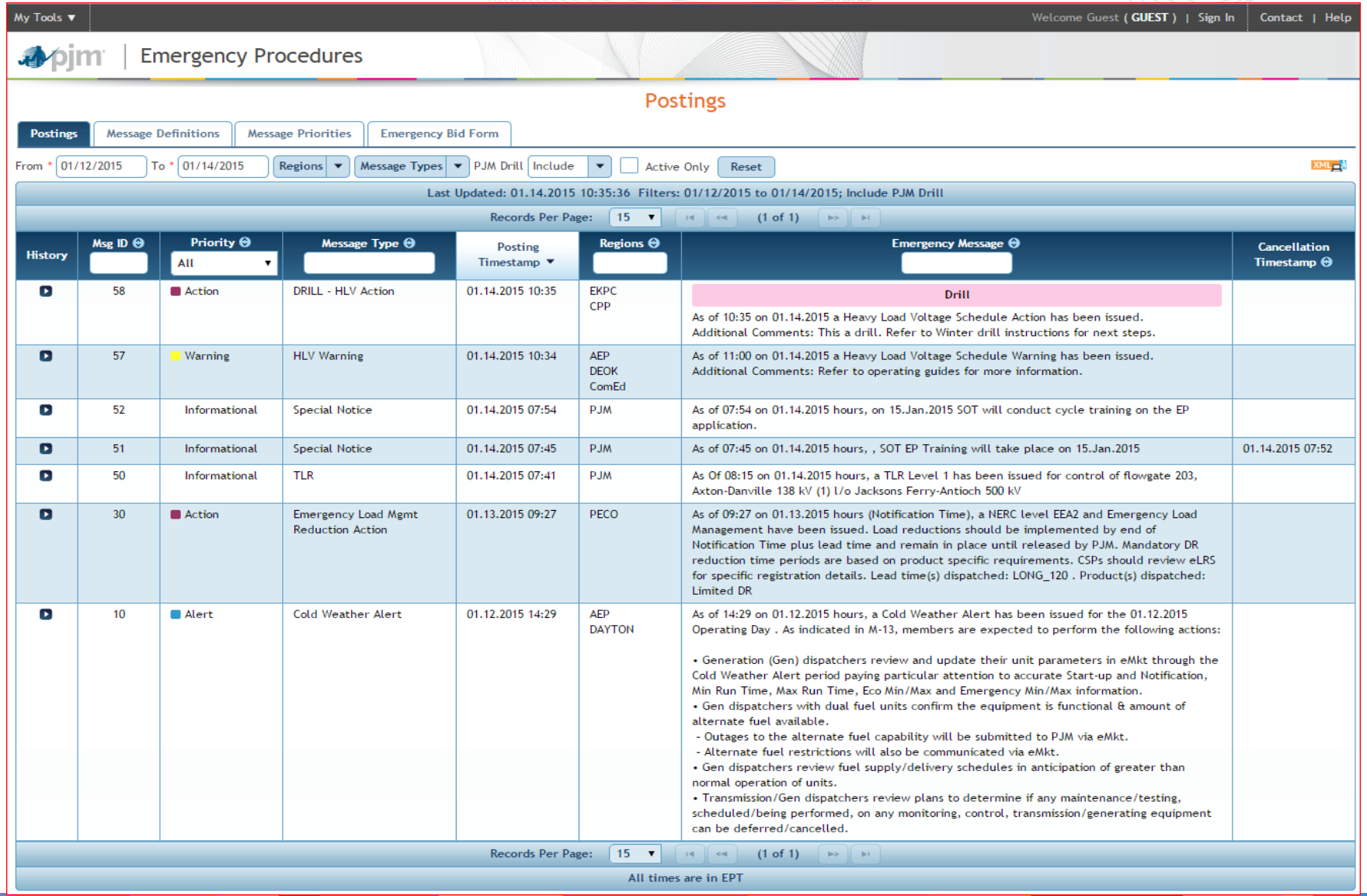
Postings



My Tools ▼ | Welcome Guest (GUEST) | Sign In | Contact | Help

pjm | Emergency Procedures

Postings

Postings | Message Definitions | Message Priorities | Emergency Bid Form

From * 01/12/2015 To * 01/14/2015 Regions Message Types PJM Drill Include Active Only Reset

Last Updated: 01.14.2015 10:35:36 Filters: 01/12/2015 to 01/14/2015; Include PJM Drill

Records Per Page: 15 (1 of 1)

History	Msg ID	Priority	Message Type	Posting Timestamp	Regions	Emergency Message	Cancellation Timestamp
	58	Action	DRILL - HLV Action	01.14.2015 10:35	EKPC CPP	Drill As of 10:35 on 01.14.2015 a Heavy Load Voltage Schedule Action has been issued. Additional Comments: This a drill. Refer to Winter drill instructions for next steps.	
	57	Warning	HLV Warning	01.14.2015 10:34	AEP DEOK ComEd	As of 11:00 on 01.14.2015 a Heavy Load Voltage Schedule Warning has been issued. Additional Comments: Refer to operating guides for more information.	
	52	Informational	Special Notice	01.14.2015 07:54	PJM	As of 07:54 on 01.14.2015 hours, on 15.Jan.2015 SOT will conduct cycle training on the EP application.	
	51	Informational	Special Notice	01.14.2015 07:45	PJM	As of 07:45 on 01.14.2015 hours, , SOT EP Training will take place on 15.Jan.2015	01.14.2015 07:52
	50	Informational	TLR	01.14.2015 07:41	PJM	As Of 08:15 on 01.14.2015 hours, a TLR Level 1 has been issued for control of flowgate 203, Axton-Danville 138 kV (1) l/o Jacksons Ferry-Antioch 500 kV	
	30	Action	Emergency Load Mgmt Reduction Action	01.13.2015 09:27	PECO	As of 09:27 on 01.13.2015 hours (Notification Time), a NERC level EEA2 and Emergency Load Management have been issued. Load reductions should be implemented by end of Notification Time plus lead time and remain in place until released by PJM. Mandatory DR reduction time periods are based on product specific requirements. CSPs should review eLRS for specific registration details. Lead time(s) dispatched: LONG_120 . Product(s) dispatched: Limited DR	
	10	Alert	Cold Weather Alert	01.12.2015 14:29	AEP DAYTON	As of 14:29 on 01.12.2015 hours, a Cold Weather Alert has been issued for the 01.12.2015 Operating Day . As indicated in M-13, members are expected to perform the following actions: • Generation (Gen) dispatchers review and update their unit parameters in eMkt through the Cold Weather Alert period paying particular attention to accurate Start-up and Notification, Min Run Time, Max Run Time, Eco Min/Max and Emergency Min/Max information. • Gen dispatchers with dual fuel units confirm the equipment is functional & amount of alternate fuel available. - Outages to the alternate fuel capability will be submitted to PJM via eMkt. - Alternate fuel restrictions will also be communicated via eMkt. • Gen dispatchers review fuel supply/delivery schedules in anticipation of greater than normal operation of units. • Transmission/Gen dispatchers review plans to determine if any maintenance/testing, scheduled/being performed, on any monitoring, control, transmission/generating equipment can be deferred/cancelled.	

Records Per Page: 15 (1 of 1)

All times are in EPT

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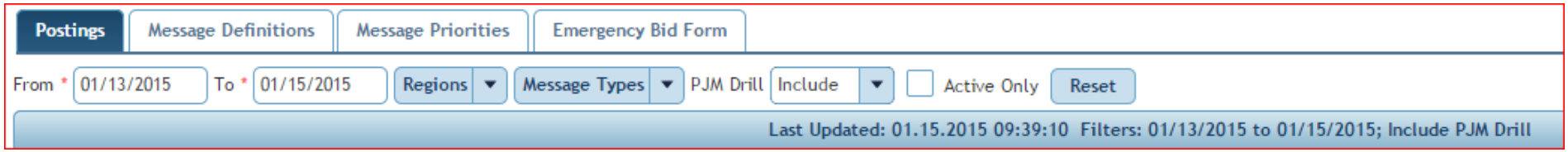
- General look of page changed to match updated PJM page style format.
- Buttons on left hand side replaced with tabs.
- By default, all active postings and postings for today + last 2 days are displayed.



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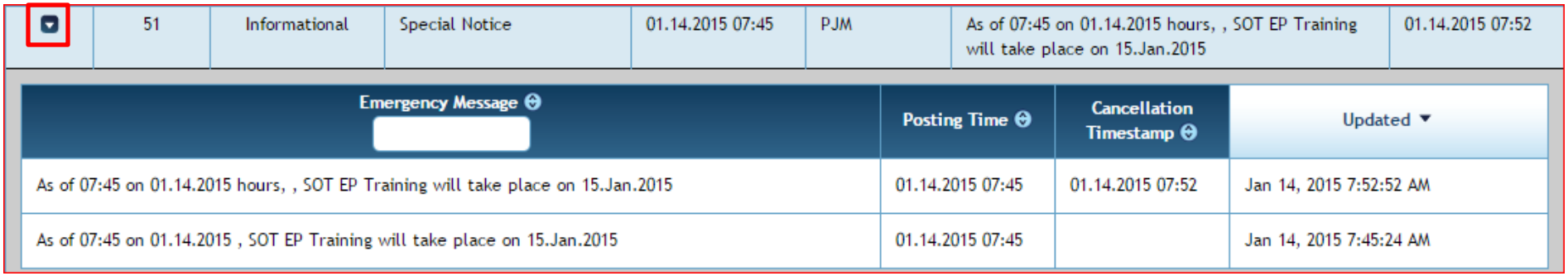
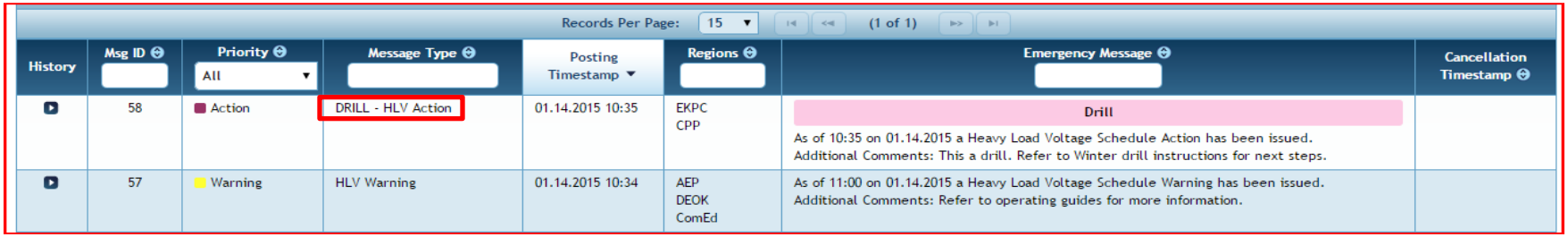
- Posting History now available to users.



▼	51	Informational	Special Notice	01.14.2015 07:45	PJM	As of 07:45 on 01.14.2015 hours, , SOT EP Training will take place on 15.Jan.2015	01.14.2015 07:52

Emergency Message	Posting Time	Cancellation Timestamp	Updated
As of 07:45 on 01.14.2015 hours, , SOT EP Training will take place on 15.Jan.2015	01.14.2015 07:45	01.14.2015 07:52	Jan 14, 2015 7:52:52 AM
As of 07:45 on 01.14.2015 , SOT EP Training will take place on 15.Jan.2015	01.14.2015 07:45		Jan 14, 2015 7:45:24 AM

- Drill postings indicated by colored banner and 'DRILL' in Message Type.



Records Per Page: 15 (1 of 1)

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▶	57	Warning	HLV Warning	01.14.2015 10:34	AEP DEOK ComEd	As of 11:00 on 01.14.2015 a Heavy Load Voltage Schedule Warning has been issued. Additional Comments: Refer to operating guides for more information.	

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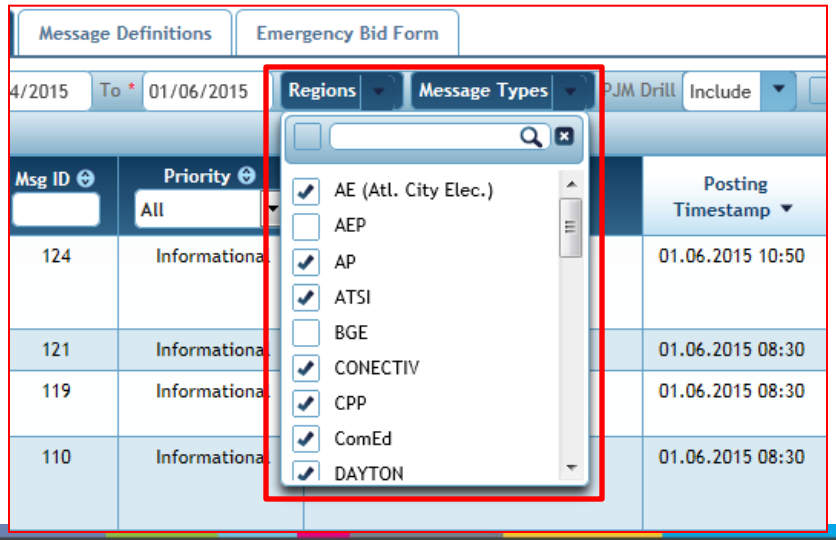
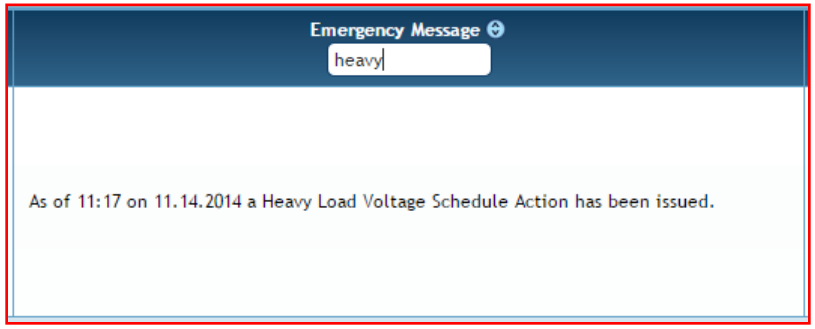
- Advance filtering options:
  - Filter for desired postings by checking/unchecking applicable Regions and Message Types.
  - Filter postings by entering keyword in the text boxes below column headers.





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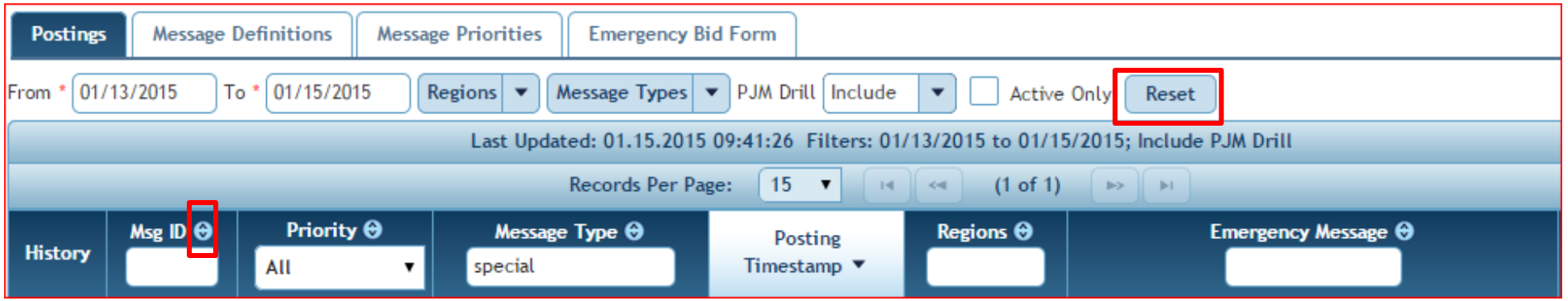
Postings - Sorting

- Click the double arrows to sort by column:
  - Click once to sort in ascending order.
  - Click twice to sort in descending order.
  - Click Reset to reset all filters and sorting.



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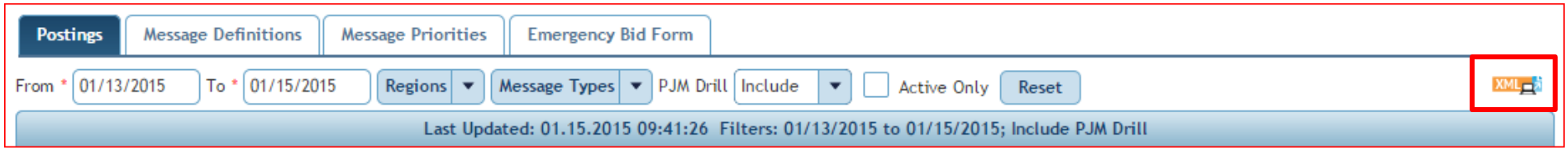
Postings – XML Download

- Click on the XML button to download a copy of the postings in XML.




```
<?xml version="1.0" encoding="UTF-8" standalone="true"?>
- <emergencyProcedures xmlns="http://ep.pjm.com/">
  - <emergencyMessage>
      <messageId>59</messageId>
      <timestamp>2015-01-14T16:23:56.130Z</timestamp>
      <message_type>TLR</message_type>
      <pjm_drill>false</pjm_drill>
      <message>As Of 11:23 on 01.14.2015 hours, a TLR Level 3a has been issued for control of
        flowgate 552, Cherry Valley-Silver Lake 345 kV (15616 line) Additional Comments: Notify
        PJM RE if 15616 line will be outaged as long as this posting is up.</message>
      <priority>Informational</priority>
    - <region>
        <regionName>ComEd</regionName>
        <regionType>Control Zone</regionType>
      </region>
    </emergencyMessage>
```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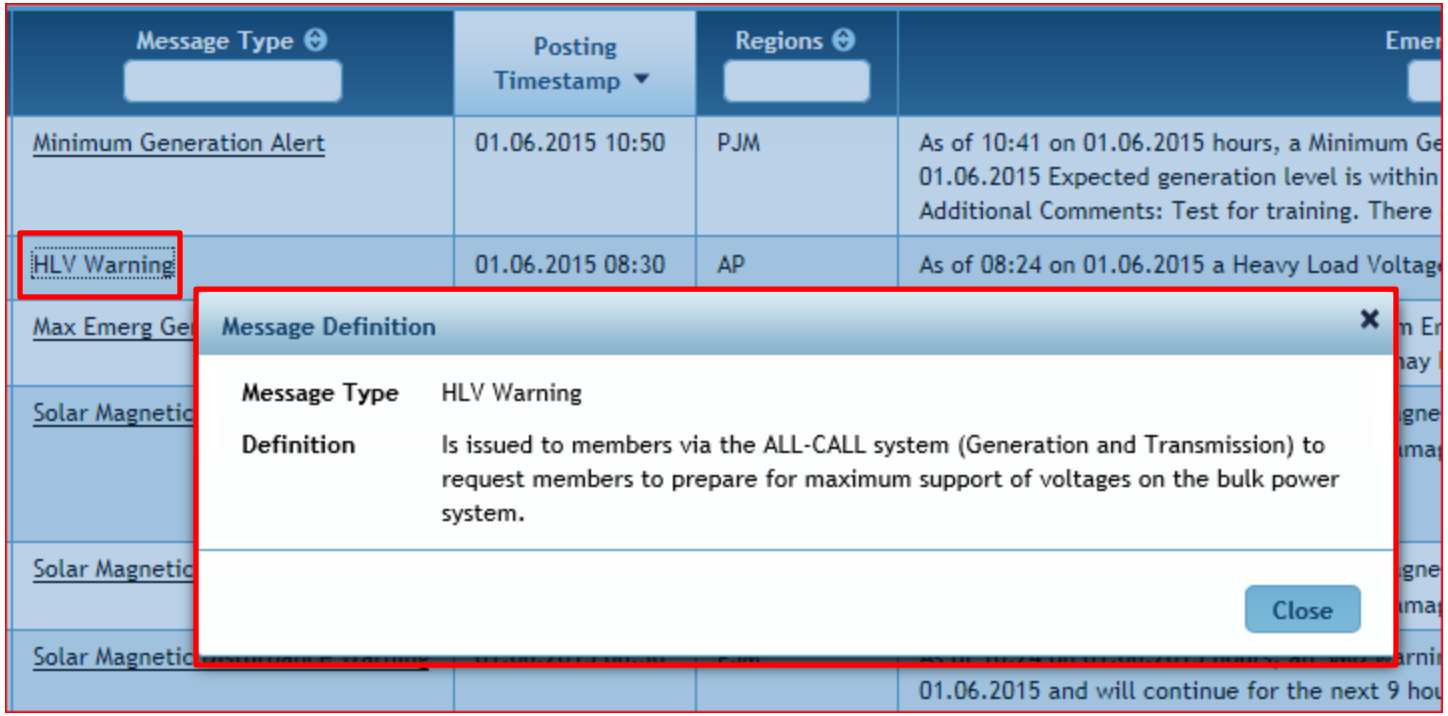
- Click on Message Type hyperlink to display associated Message Definition.



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Message Definition

Message Definitions

Postings | **Message Definitions** | Message Priorities | Emergency Bid Form

Message Type ▲	Definition	Priority
Cold Weather Alert	Is to prepare personnel and facilities for expected extreme cold weather conditions.	Alert
Curtl Bldg Load	PJM and Member facilities may be implemented at the same time.	Action
Emergency Energy Request	This is a request by PJM for emergency purchases of energy. PJM will select which offers are accepted based on price and expected duration of the need. This request is typically issued at the Max Emergency Generation emergency procedure step. The Emergency Energy Bid Form can be found on the webpage for Emergency Conditions.	Warning
Emergency Load Mgmt Reduction Action	The purpose of the Load Management Reduction Action is to provide additional load relief by using PJM controllable load management programs.	Action
Emergency Voluntary Energy Only Demand Response	The purpose is to request end-use customers registered in PJM's Emergency Voluntary Energy Only Demand Response to reduce load. These reductions are voluntary.	Action
High System Voltage	All companies shall take the following actions on the Bulk Electric System: 1. All switchable capacitors are out of service. 2. All reactors are in service. 3. Transmission Owners [TOs or TO] are requested to review and adjust LTC settings as appropriate. All LTC (230 kV and above) and voltage schedule adjustments shall be coordinated with PJM Dispatch. 4. All SVCs are absorbing reactive power. (FE Fairmont will implement the Black Oak SVC System High Voltage settings and change the voltage Vmax set point from 550kV to 540kV and the VDBmax from 545kV to 535kV.) 5. Generation Owners [GOs or GO] shall coordinate reactive power adjustments with TOs. 6. GOs shall communicate, with PJM and the TO, restrictions to their generator's ability to absorb MVARs if that capability varies from the existing D-Curve. 7. GOs will operate generators at the lower bandwidth of their voltage schedule when possible.	Action
HLV Action	Is issued to members (Generation and Transmission) at peak load periods via the ALL-CALL system to request maximum support of voltages on the bulk power system and increase reactive reserves on the 500kv system.	Action
HLV Warning	Is issued to members via the ALL-CALL system (Generation and Transmission) to request members to prepare for maximum support of voltages on the bulk power system.	Warning
Hot Weather Alert	Is to prepare personnel and facilities for extreme hot and/or humid weather conditions which may cause capacity requirements/unit unavailability to be substantially higher than forecast are expected to persist for an extended period..	Alert
Load Shed Directive	This Emergency Procedure Action is a directive around the shedding of firm load in a local area in order to address an uncontrollable overload(s) on a local transmission facility(ies).	Action
Local MinGen Event	A Local Minimum Generation Event is implemented when there is an excess generation situation in a localized area or set of areas, which has the potential to result in stability issues or constrained operations.	Informational

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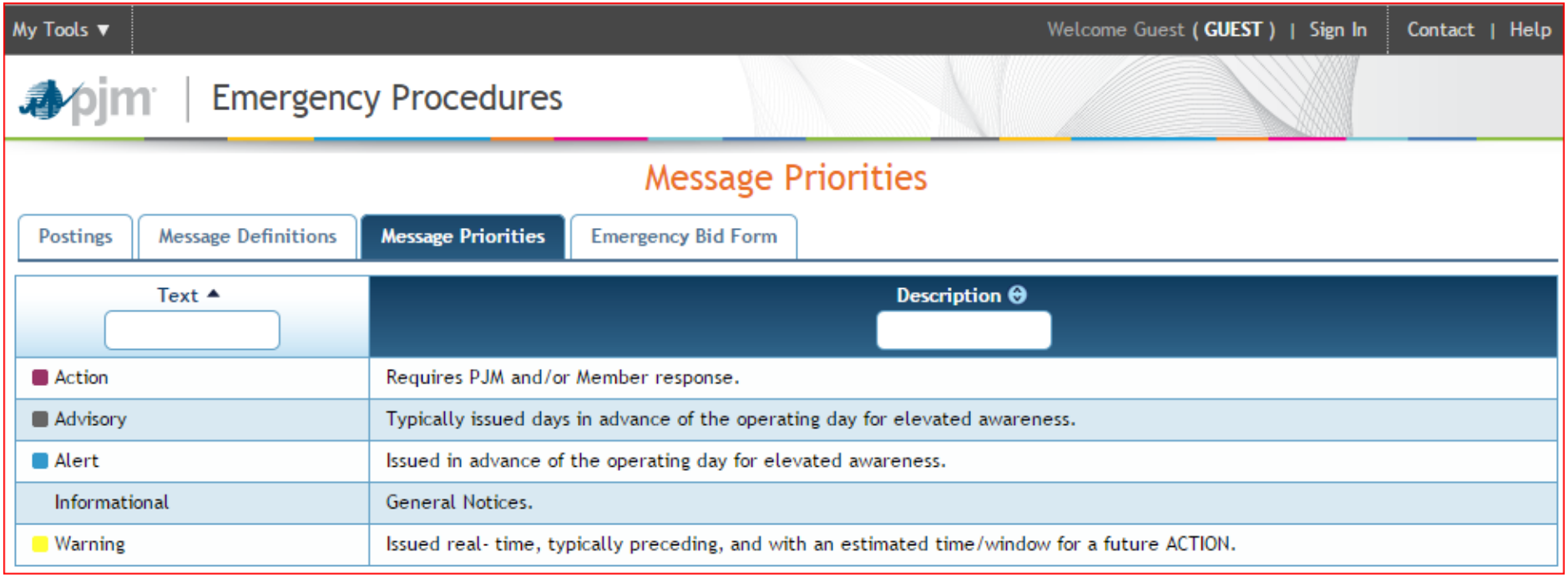
Message Priorities



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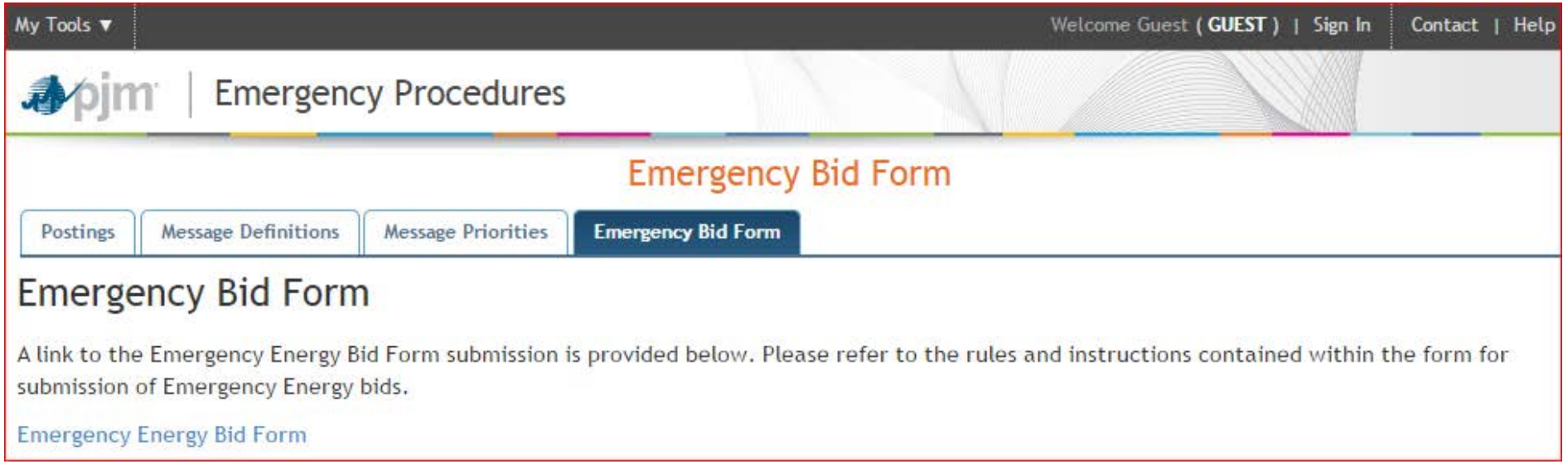
- Hyperlink is provided to open the Emergency Bid Form.



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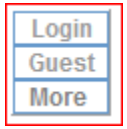
Guest Login

- Similar to eData in eSuite, Emergency Procedures will have a Guest Login and a User Login.



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- Users will be able to request access to Emergency Procedures (Production and Sandbox) via eSuite CAM.
  - These require separate CAM authorizations.
- With an account, users can set up profiles:
  - Set up email and email-to-text notifications for specific message types and regions.

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Email Notifications

- Multiple email addresses allowed per user.
  - Phone numbers can be set up in email format. E.g. 1234567890@messaging.sprintpcs.com.
  - User can select whether to receive full text or abbreviated text via email.
  - Emails will be sent from ep_support@pjm.com.

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Browserless XML Changes

- Browserless interface replaced with Command Line interface.
- New XML Schema (XSD) and sample file will be available on information page.

```
<?xml version="1.0" encoding="UTF-8" standalone="true"?>
- <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:tns="http://ep.pjm.com/"
targetNamespace="http://ep.pjm.com/" elementFormDefault="qualified"
attributeFormDefault="unqualified" version="1.0">
    <xs:element type="tns:EmergencyProcedures" name="emergencyProcedures"/>
  - <xs:complexType name="EmergencyProcedures">
    - <xs:sequence>
        <xs:element type="tns:EmergencyMessage" name="emergencyMessage" minOccurs="0"
          maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:complexType>
  - <xs:complexType name="EmergencyMessage">
    - <xs:sequence>
        <xs:element type="xs:short" name="messageId"/>
        <xs:element type="xs:dateTime" name="timestamp"/>
        <xs:element type="xs:string" name="message_type"/>
        <xs:element type="xs:boolean" name="pjm_drill"/>
        <xs:element type="xs:dateTime" name="canceledTimestamp" minOccurs="0"/>
        <xs:element type="xs:string" name="message"/>
        <xs:element type="xs:string" name="priority"/>
        <xs:element type="tns:EmergencyMessageRegion" name="region" minOccurs="0"
          maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:complexType>
  - <xs:complexType name="EmergencyMessageRegion">
    - <xs:sequence>
        <xs:element type="xs:string" name="regionName"/>
        <xs:element type="xs:string" name="regionType"/>
        <xs:element type="tns:LoadManagementDetail" name="loadManagementDetail"
          minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:complexType>
  - <xs:complexType name="LoadManagementDetail">
    - <xs:sequence>
        <xs:element type="xs:string" name="product"/>
        <xs:element type="xs:string" name="leadTime"/>
        <xs:element type="xs:dateTime" name="canceledTimestamp"/>
      </xs:sequence>
    </xs:complexType>
</xs:schema>
```


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- Mobile-friendly text alerts.
- Region/Zone/Subzone hierarchy & Company to State mapping.
- User configurable settings retention between user-sessions:
  - Region(s)
  - Message Type(s)
- Electronic submission of Emergency Bid Form.

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Contact

David.Hislop@pjm.com
Chidi.Ike@pjm.com
toolsrefresh@pjm.com

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