



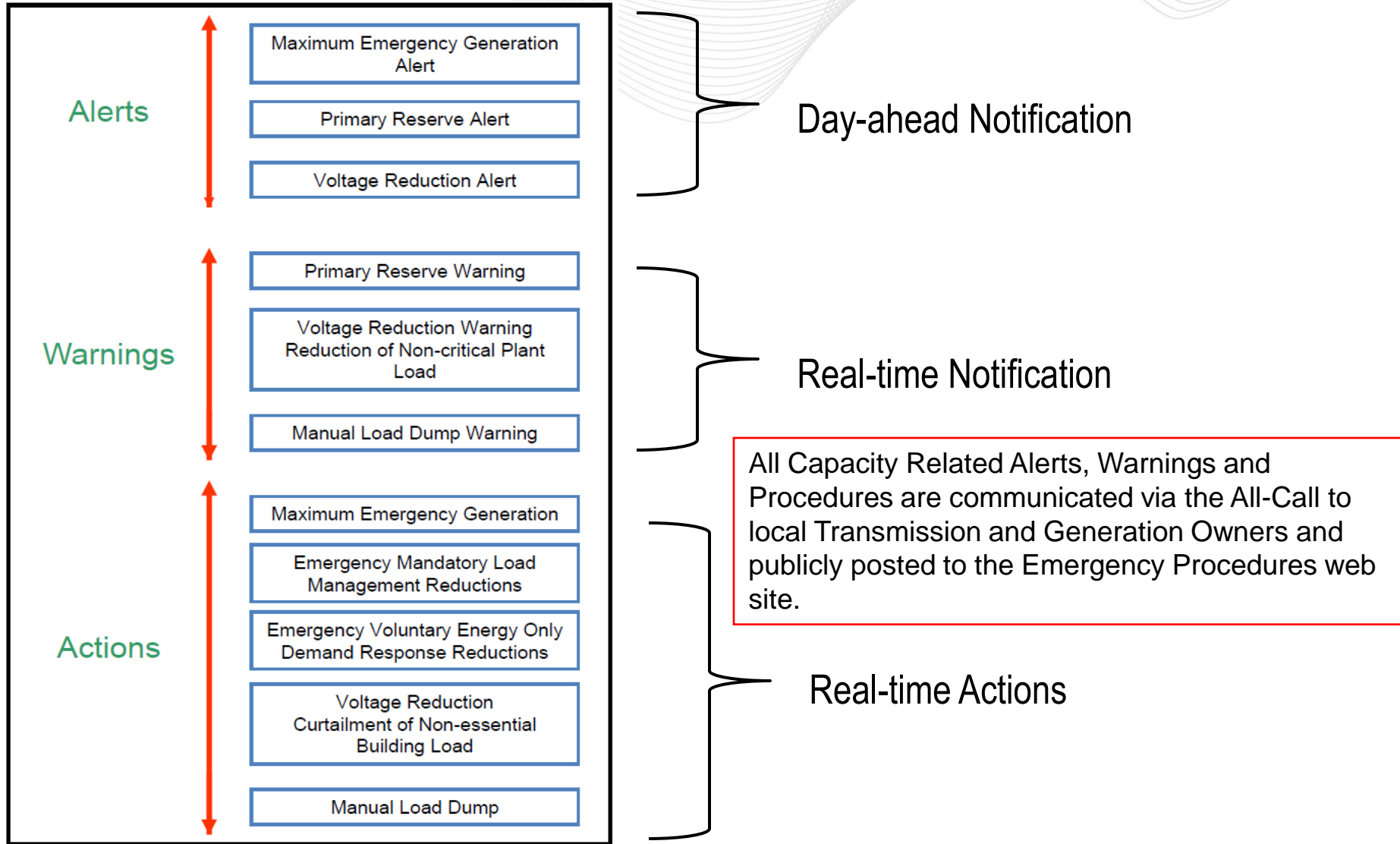
Back-up Generation to Facilitate Demand Response During Emergency Conditions: Policies and Market Rules

MADRI Meeting
September 6, 2012
Trenton, NJ

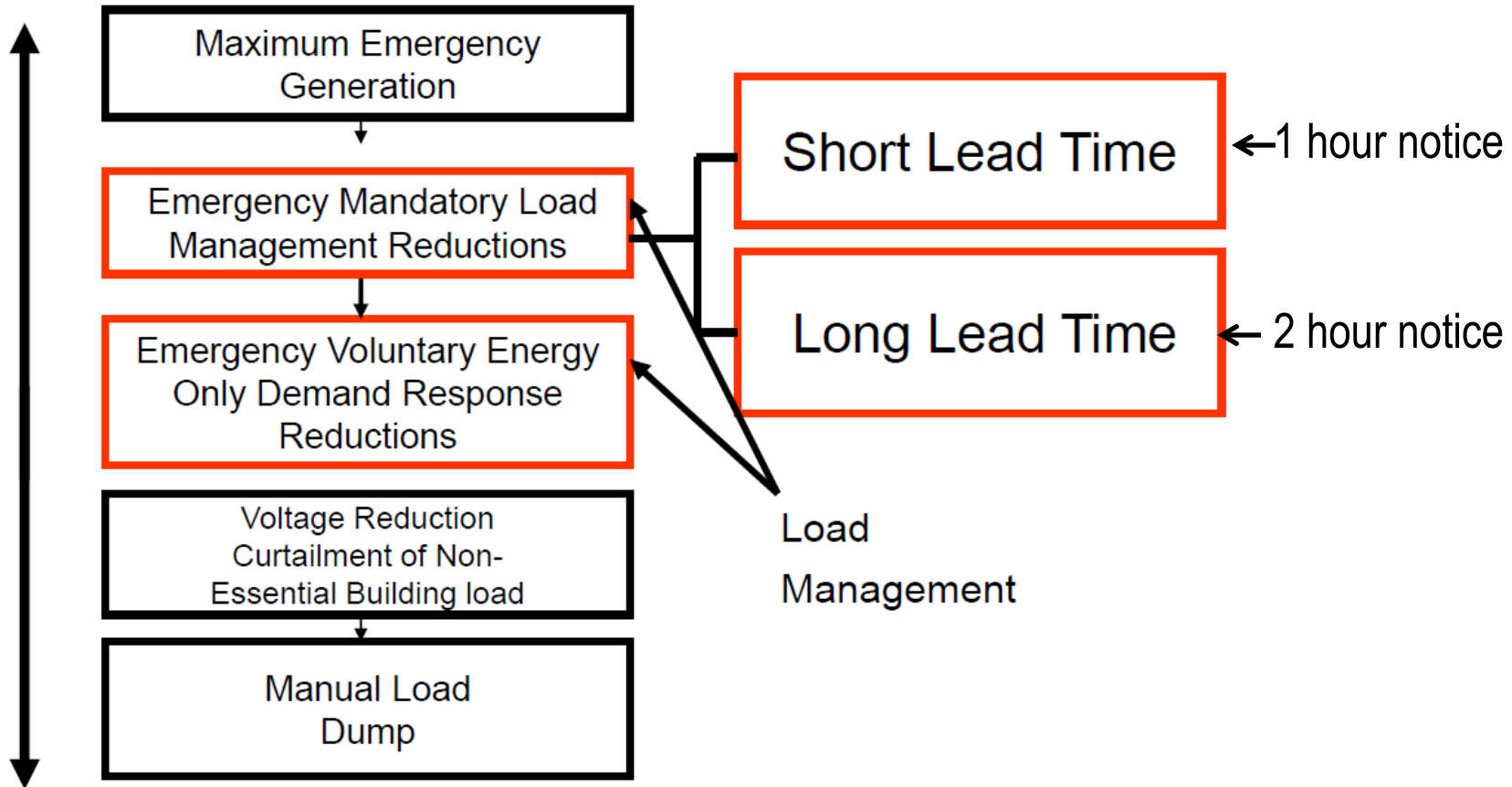
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- Independent entity with no affiliation with any generator, transmission owner or demand response provider
- Independent Board of Directors
- PJM regulated by FERC
- Procedures embodied in tariffs
- Transparency of Operations: E-DATA
- Emergency procedures consistent with NERC/FERC criteria

- Operate and plan the bulk power transmission system
- Reliability:
 - Maintain energy balance between load and generation
 - Manage congestion to ensure flows are within prescribed limits
 - Maintain operating reserves to handle contingencies
- Tools to ensure reliability:
 - Market price signals (energy and ancillary service markets)...getting the prices consistent with reliability needs
 - Emergency procedures
 - Load reduction through Demand Side Response (Load Management)
 - Curtailment of transactions
 - Forced curtailment of load



- Can include the use of behind-the-meter generation
- Is paid for “energy supplied” at the greater of LMP or strike price



Back-up Generation for Emergency Load Response is Required to Follow Applicable Laws and Permits

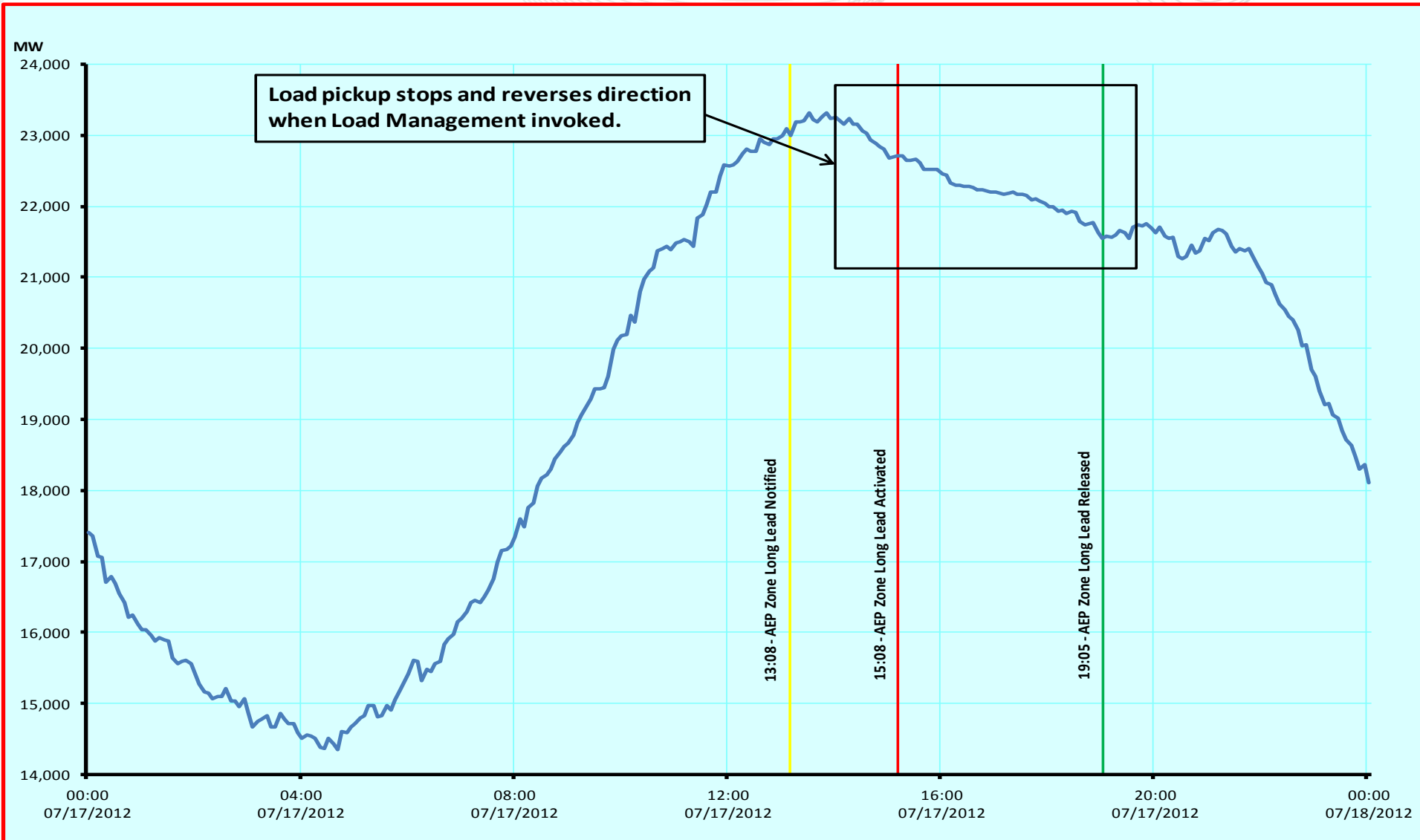
“5. Any end-use customer intending to run distributed generating units in support of local load for the purpose of participating in this program must represent in writing to PJM that it holds all applicable environmental and use permits for running those generators. Continuing participation in this program will be deemed as a continuing representation by the owner that each time its distributed generating unit is run in accordance with this program, it is being run in compliance with all applicable permits, including emissions, run-time limit or other constraint on plant operations that may be imposed by such permits.” (PJM OATT, Attachment K-Appendix, Emergency Load Response Program, Registration, pg 1828)

- PJM working with Curtailment Service Providers to improve market transparency on how load is reduced:
 - For example:
 - HVAC controls
 - On-Site generation with associated fuel source and technology type
 - Lighting
- PJM focused on reliability objectives
 - Operational awareness of any potential restrictions or DR that has already been deployed based on energy price economics is essential to allow operations to anticipate a contingency where some DR may be unable to perform or has already been deployed

Requirement	Limited DR	Extended Summer DR	Annual DR
Availability	Any weekday, other than NERC holidays, during June – Sept. period of DY	Any day during June-October period and following May of DY	Any day during DY (unless on an approved maintenance outage during Oct. - April)
Maximum Number of Interruptions	10 interruptions	Unlimited	Unlimited
Hours of Day Required to Respond <i>(Hours in EPT)</i>	12:00 PM – 8:00 PM	10:00 AM – 10:00 PM	Jun – Oct. and following May: 10 AM – 10 PM Nov. – April: 6 AM- 9 PM
Maximum Duration of Interruption	6 Hours	10 Hours	10 Hours
Notification	Must be able to reduce load when requested by PJM All Call system within 2 hours of notification, without additional approvals required		
Registration in eLRS	Must register sites in Emergency Load Response Program in Load Response System (eLRS)		
Compliance	Must provide customer-specific compliance and verification information with 45 days after the end of month in which PJM-initiated LM event occurred.		

- 38 emergency events since 1991
 - 30 emergency events since PJM wholesale energy markets have been in place beginning in 1997
 - 2 in 2012 – specific zones dispatched not entire RTO
 - Experience varied
 - Many events localized
 - Many events for less than 6 hours
 - Many events called for either Long Lead time resources or Short Lead time resources but not both

Example - Instantaneous AEP Zonal Load 7/17/12



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