Forward Capacity Market (FCM) In New England

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Outline

- Demand Resource Types
- Participating in FCA
- Dispatching Demand Resources in FCM
- Demand Resources In FCA #1 and FCA #2

DEMAND RESOURCE TYPES

Demand Resources Under FCM

- Demand Resources
  - continue to increase under the Forward Capacity Markets
  - are competing with other Capacity Resources to maintain reliability on the bulk power system
- The current reliability programs expire under the Forward Capacity Market beginning with the June 1, 2010 delivery period

Demand Resources Under FCM (cont.)

- Installed measures that result in verifiable reductions in end-use consumption of electricity.
- Passive Demand Resources (Passive DR)
  - Save energy (MWh) during peak hours.
  - Are not dispatchable.
  - Include On-Peak and Seasonal Peak FCM Resources.
- Active Demand Resources (Active DR)
  - Are designed to reduce peak loads (MW).
  - Can reduce load based on real-time system conditions or ISO instructions.
  - Include Real-Time Demand Response (RTDR), Real-Time Emergency Generation (RTEG) in the FCM.

Demand Resource Types

1. On-Peak - Passive
2. Seasonal Peak - Passive
3. Real-Time Demand Response - Active
4. Real-Time Emergency Generation - Active

DISPATCHING DR IN FCM

Real-Time Demand Response Resources

- The ISO will send Dispatch Instructions to Real-Time Demand Response Resources:
  - They must curtail electrical usage within 30 minutes of receiving a Dispatch Instruction; and
  - Continue curtailing usage until receiving a Dispatch Instruction to restore electrical usage
- Designed for dispatchable measures with no binding air quality permitting restrictions on their use

PARTICIPATING IN FCA

Participating in FCA

- Forward Capacity Auctions (FCAs) are held almost 3 years in advance of the delivery period
  - Presently the auctions are about 2.5 years in advance
  - Auctions are held about every 10 months until they are held about 3 years in advance
- The process to participate in a FCA has several step and specific deadlines
- Failure to meet one of the deadlines can result in a participant being disqualified for an FCA

Abbreviated Schedule for Demand Resources

FCA #	Show Of Interest	Existing Qualification	New Qualification Package	Qualification Determination Notification	Auction
1	2/28/2007	4/9/2007	6/15/2007	10/5/2007	2/4/2008
2	11/14/2007	2/29/2008	4/29/2008	8/1/2008	12/8/2008
3	9/16/2008	1/20/2009	2/17/2009	5/27/2009	10/5/2009

FCA #	FCM Delivery Period
1	6/2010 – 5/2011
2	6/2011 – 5/2012
3	6/2012 – 5/2013

New Dispatch Rules

- The ISO will work with the Providers to establish Demand Designated Entities (DDEs) for dispatch just like generators
  - This will be the only entity that the ISO System Operators will deal with during an actual dispatch
- The ISO will dispatch DR Resources where and when needed and only in the amount needed
  - Avoids unnecessary activations of DR customers Assets
  - Limits customer fatigue

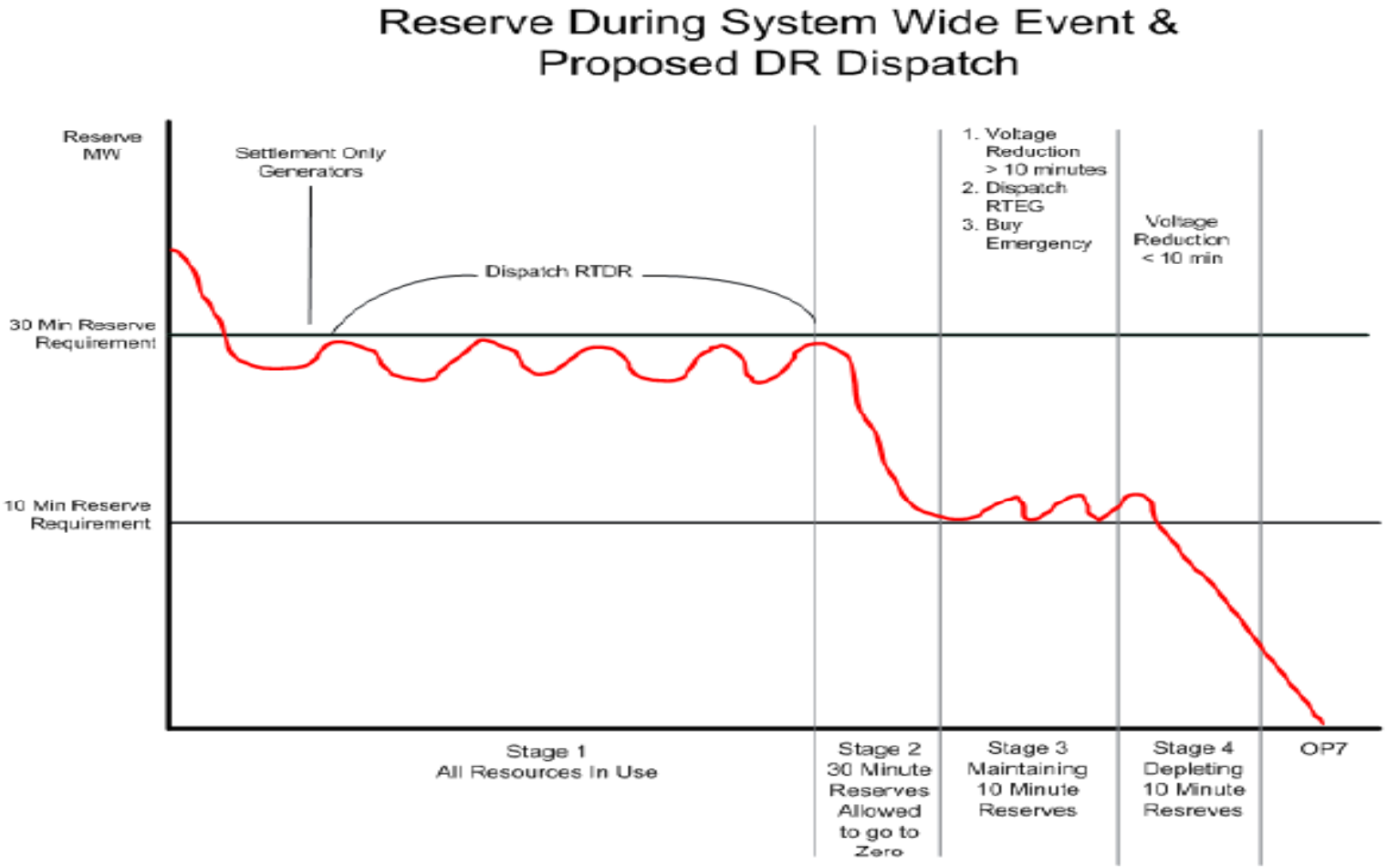
Real-Time Demand Response Resources

- Real-Time Demand Response (RTDR) Resources will receive Dispatch Instructions from the ISO
  - They must curtail electrical usage within 30 minutes of receiving a Dispatch Instruction; and
  - Continue curtailing usage until receiving a Dispatch Instruction to restore electrical usage
- RTDR will be activated when
  - The ISO forecasts Operating Procedure No. 4 (OP-4) "would have begun to allow the depletion of 30 Minute Reserves" the day before the Operating Day
  - The ISO implements OP-4 and has "begun to allow the depletion of 30 Minute Reserves" during the Operating Day

What is the ISO Trying to Accomplish with OP #4 and Demand Response?

- Maintain Operating Reserves at a system-wide level to remain within established criteria to allow recovery from contingencies
- Maintain Transmission Constraints/Interface Limits to avoid instability, uncontrolled separation and cascading overloads both pre and post contingency
- On a normal day-in and day-out basis we do this with generation, transmission, and scheduled transactions with our neighbors

Under FCM Where Does DR Fit?



DR IN FCA #1 AND FCA #2

Cleared Demand Resources (MW) versus Forecast Peak Load by Load Zone

FCA#1: 2010/11 Capacity Commitment Period

Load Zone	ON_PEAK	REAL_TIME	REAL_TIME_EG	SEASONAL_PEAK	Total	Percent DR	2010 Forecast Peak Load	Percent Peak Load
CT	83.6	288.0	342.1	134.0	847.6	33.2%	7,560	26.9%
Maine	26.1	210.5	36.6		273.2	10.7%	2,065	7.3%
NEMASSBOST	132.9	181.0	162.6	-	476.4	18.7%	5,660	20.1%
New Hampshire	43.8	30.5	44.2	-	118.5	4.6%	2,490	8.9%
Rhode Island	45.6	46.8	73.0	-	165.4	6.5%	1,870	6.6%
SEMASS	87.4	70.1	86.2	-	243.7	9.5%	3,670	13.0%
Vermont	57.7	23.6	20.3	-	101.6	4.0%	1,085	3.9%
WCMASS	77.1	128.5	109.8	11.7	327.1	12.8%	3,735	13.3%
Total	**554.1**	**873.5**	**874.8**	**145.7**	**2553.6**	**100.0%**	**28,135**	**100.0%**

FCA#2: 2011/12 Capacity Commitment Period

Load Zone	ON_PEAK	REAL_TIME	REAL_TIME_EG	SEASONAL_PEAK	Total	Percent DR	2011 Forecast Peak Load	Percent Peak Load
CT	122.1	285.6	268.8	247.8	951.9	32.4%	7,650	26.8%
Maine	26.5	190.4	31.6		293.9	10.0%	2,130	7.5%
NEMASSBOST	175.2	134.7	172.0		598.1	20.4%	5,730	20.0%
New Hampshire	57.4	34.8	13.2		106.0	3.6%	2,540	8.9%
Rhode Island	58.1	47.0	74.1	2.0	186.2	6.3%	1,900	6.6%
SEMASS	107.9	77.5	85.6	2.0	339.6	11.6%	3,720	13.0%
Vermont	68.9	26.0	7.8		102.7	3.5%	1,100	3.8%
WCMASS	92.5	118.9	105.5	17.5	358.3	12.2%	3,810	13.3%
Total	**708.7**	**915.1**	**758.6**	**269.3**	**2936.6**	**100.0%**	**28,580**	**100.0%**

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