



**Intelligent Load Management  
Technology Overview  
Presentation to FERC**  
April 23, 2007

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# Overview

- Automated, near-generation-quality Demand Response is coming on-line today.
- Site Controls is building out a networked Load Management resource base in the traditional “hard-to-reach” small building market
- Small building market accounts for as much as 25% of ISO coincident peak.
- New technologies create material networked load management opportunities with minimal customer inconvenience.

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# Intelligent Load Management

- A real-time, two-way network – all sites communicating with data center.
- Flexible Aggregation – a bunch of little loads are networked into a powerful DR resource.
- It's a knob, not a switch – fine-grained, granular control
- Low Consequence – 50% demand reduction with acceptable consequences at the building and *20% demand reduction for 4 hours with no discernable impact*
  - Restaurants (HVAC sequencing, IDVC, thermal storage)
  - C Stores (thermal storage, transient traffic)
  - Retail (lighting, HVAC sequencing, transient traffic)
- Verifiable and manageable in real-time

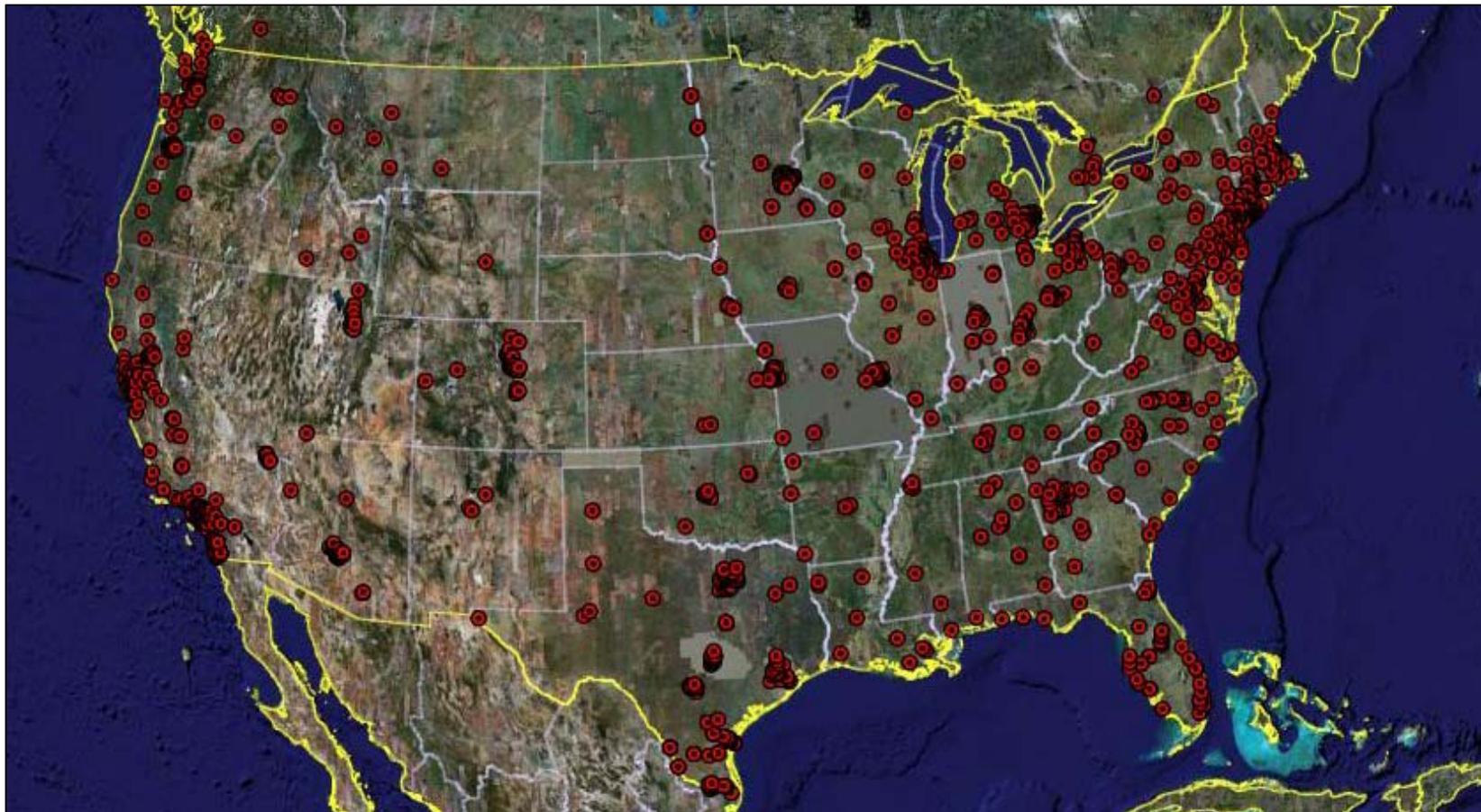
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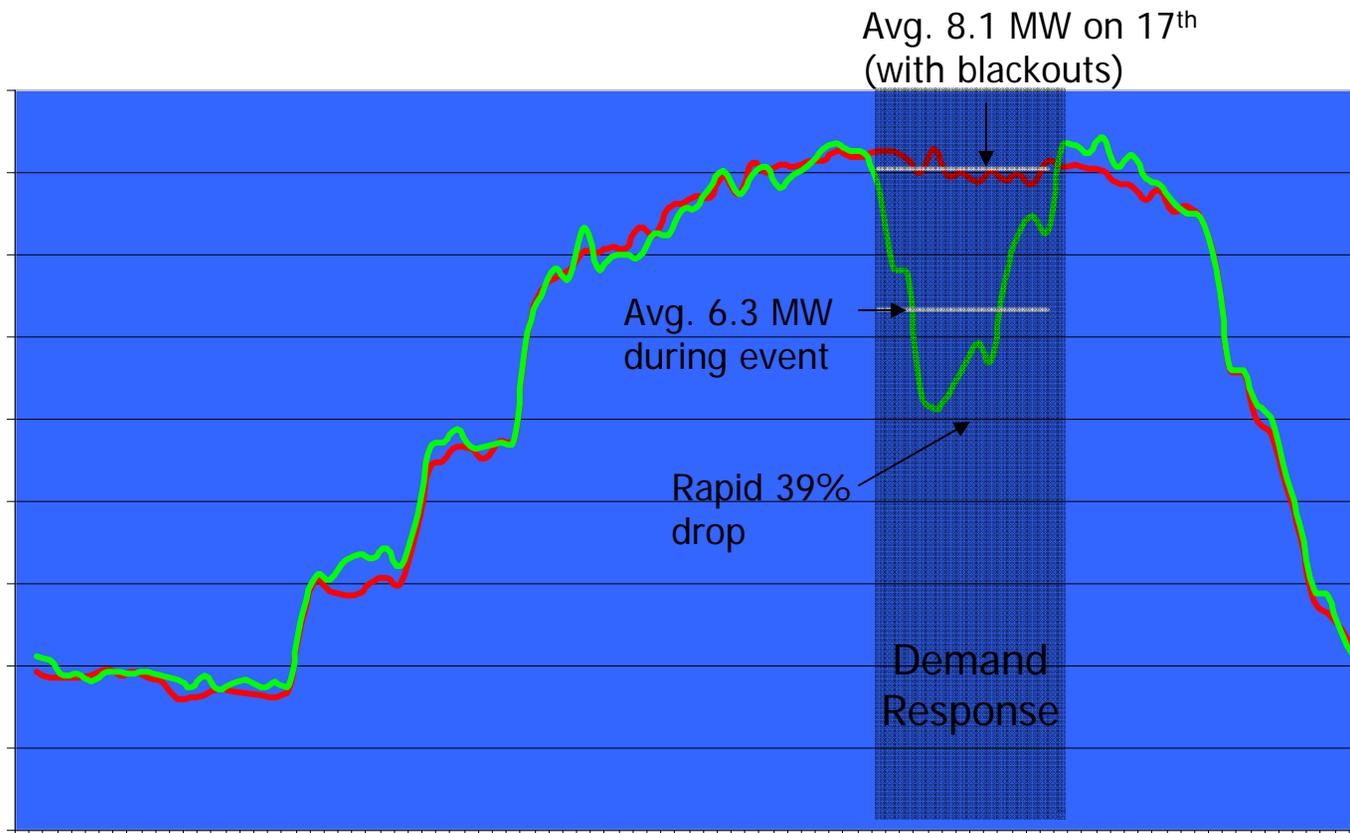
# Site Controls creates value for building owners everyday by ...

- *Achieving a rapid ROI by decreasing energy and maintenance expenses – typically ~ 50% ROI*
- *Facilitating “Green” branding by reducing emissions of greenhouse gasses and air/water pollutants – SC customers will reduce their CO2 footprint by ~ 130,000 tons in 2007*
- *Allowing central control and monitor thousands of facilities and assets – for several chains, this value alone pays for the system*
- *Facilitating the provision of consistent experiences across the chain – building the brand*

~ 2000 sites & 200 mW on the network  
all 50 states, with a broad portfolio of loads



# Aggregated load management in action: Texas emergency April 17<sup>th</sup> vs. 18<sup>th</sup>



Reduction of 21% for 3.5 hours with no impact on store operations

## INTELLIGENT LOAD MANAGEMENT

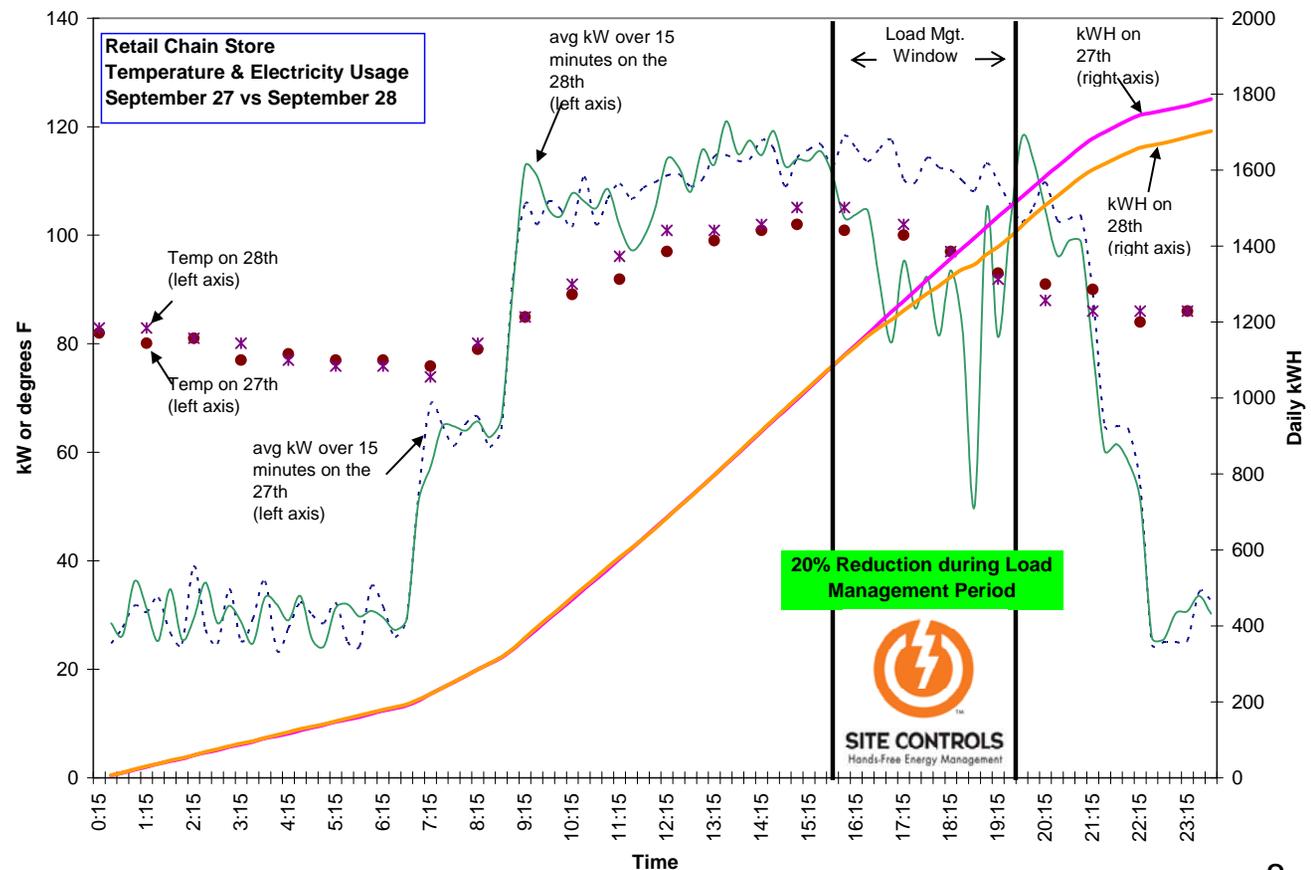
In addition to the core EMS, DCV, and facilities information system, Site Controls has developed exciting new technologies to manage individual and aggregated electrical loads in real time.



- We can leverage the Site Controls' core system (connectivity, monitoring and sophisticated software) with new technologies to customize load management and demand response for each site.
- Intelligent Load Management goes well beyond traditional demand response to provide an integrated, dynamic approach that balances efficiency, financial, and peak load management considerations across all sites for maximum rewards.

With Site Controls technology and aggregated loads, we can shed significant load across the chain with minimal consequences, but....

- How much load?
- How long?
- When?
- Why?



# Complex Balancing Act

- Efficiency considerations: continuous efficiency conflicts directly with demand response potential – *it's easy to shed a bundle if you're wasting a bundle.*
- Business rules: what is acceptable to the operations team?
  - How do we test it?
  - How do we provide the proper level of flexibility to operations?
  - How do we prove that it is okay and get their buy-in?
- Brand/marketing considerations:
  - How do we minimize potential negative effects on brand image?
  - How do we maximize positive benefits for brand image?
- Asset and ambient conditions:
  - Adjust ILM algorithms continuously in response to asset (e.g., broken HVACs) and ambient conditions (e.g., temps beyond design day) to maintain control of the facility.
- Financial considerations:
  - What is the right balance of efficiency versus load management with consideration of:
  - Efficiency incentives
  - Demand response incentives
  - Avoided costs



# Comprehensive Solution

- We won't let you make a mistake by rushing into generic demand response programs:
  - a “one size fits all” approach creates excess risks
  - DR programs don't exist in much of territory
  - this should be an unqualified success for you.
- Limited business risk – we engage deeply and move prudently – with your advice, consent, and direction every step of the way.
- Detailed, comprehensive analysis, which addresses all of the myriad factors that need to be considered
- Presentation of options with recommendations across the chain (beyond the narrow DR boundaries) that balance the myriad concerns/issues.
- Continuous analysis, continuous improvement – as we learn together (based on hard data and quantified research) we will balance the factors so as to create the “perfect balanced solution” for you – the right solution will change over time in response to internal and external conditions.

