Demand Response Programs

Oregon Public Utility Commission
January 6, 2005

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PacifiCorp

Current Programs/Tariffs

- Load Control Programs
  - Cool Keeper, Utah (currently 33 MW, building to 90 MW)
  - Irrigation load control, Idaho (35 MW summer, 2004)
  - Lighting load control, Utah (will start building in 2005…to 27 MW by 2008)
- Price Responsive Programs
  - Energy Exchange, ID, OR, UT, WA (day ahead hourly price offer)
  - Summer Inverted Block Rate, UT
  - TOU rates (ID, OR, UT)
- Customer Education
  - Power Forward (State-wide, “stop light,” public appeal program)

Note: Almost 60% of customers system wide are eligible for some form of voluntary load control or price responsive program.

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Demand Response Results, 2004

Load Control

- Cool Keeper — 22-26 MW (cycling) Shed test up to 42 MW
- ID Irrigation Load Control — 30-35 MW

Price Responsive

- Energy Exchange — 0-6.4 MW (up to 95 MW identified)

Public Appeal

- Power Forward — No Alerts (0-70 MW historical experience)

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2004 IRP Action Plan

- The Preferred Portfolio contains two new load control resources which defer supply side resources.
  - 40 MW West System by 2008
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- RFP's will be issued in 2005 to build full load control capability by 2008

Program Background/Detail Slides

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‘Cool Keeper’ Program

- Radio control through individually addressed pager system
- Vendor – Comverge Technologies
- Launched – June 20, 2003
- Ten Year Contract
  - turn-key,
  - vendor owned
  - pay for proven capacity of the system
- Target Market – Residential And Small Commercial central electric air conditioners
- Controlled Load Objective - Build Out For 3 Years, 90 MW of dispatchable load reduction (at 97 deg. F)
- Emergency load shed capability should increase short-term capability to 150 MW or more (at 97 deg. F)
- Investigating capability to qualify as reserves with WECC

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Key Operational Details

- Dispatching is limited to…
  - June, July and August.
  - Weekdays (weekends and holidays are excluded).
  - ~60 hours per summer peak season
    - 100hrs. permitted
  - Four consecutive hours per 24-hour period during the period of 2:00pm and 8:00pm.
- Customer cannot ‘override’ the DCU
  - Customer may elect to ‘opt-out’ of two “Cycling Events’

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Cool Keeper

- Summer 2004 Results
  - Cycled 6 days at various ambient temperatures
  - Conducted short-term load sheds (7 to 30 minutes) to prove capability
  - Load reductions observed in the 22-42 MW range
  - Currently have 33,000 participants – approx. 33 MW load reduction (at 97 deg. F)

Cool Keeper Unit Installation

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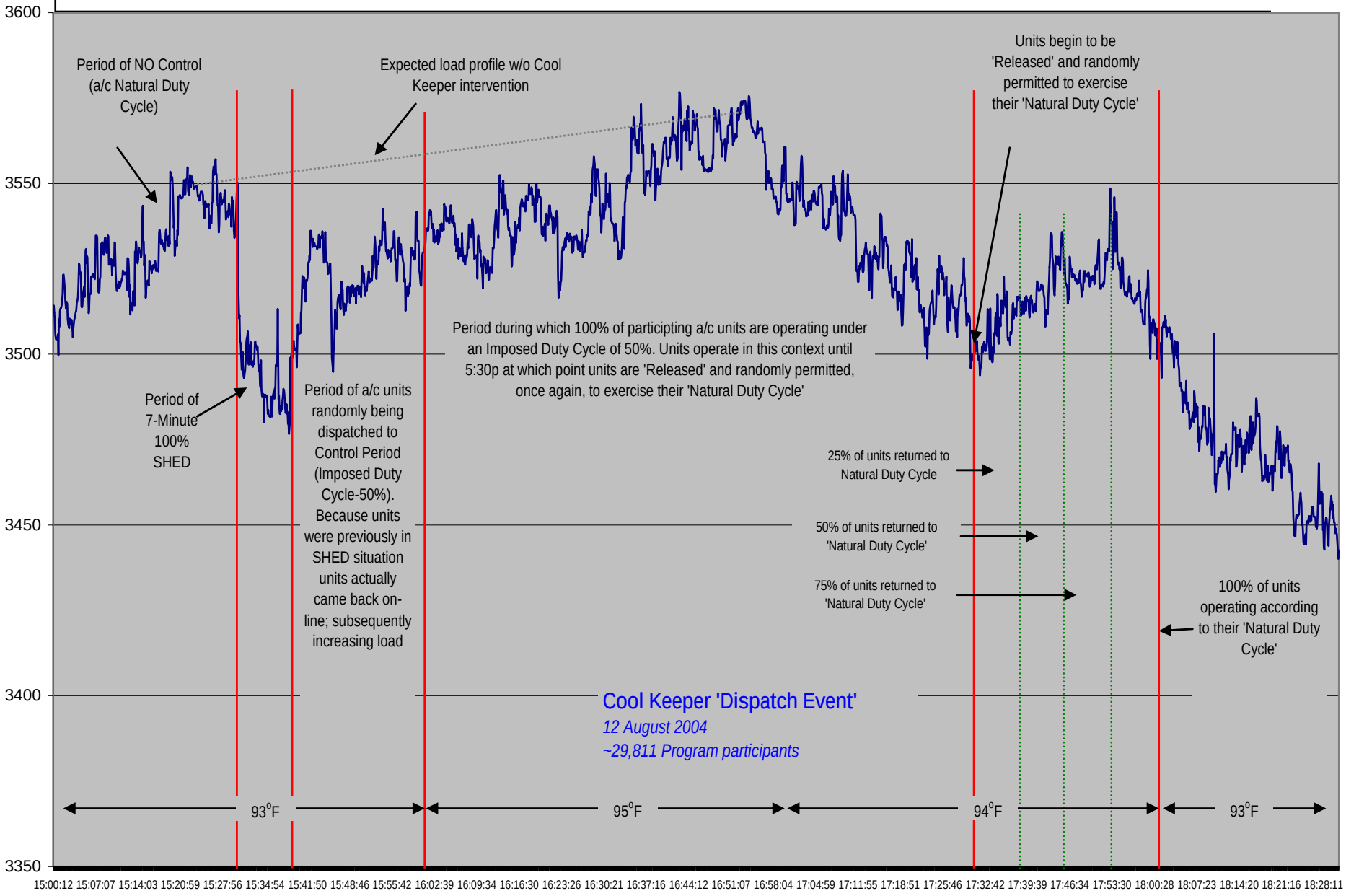
Cool Keeper Test Shed Load Profile



Irrigation Load Control - Idaho

- Pre-scheduled load reductions using time clocks
- Load reductions M-Th, 2-8pm, June through mid-Sept
- Each pump scheduled two days per week, M/W or Tu/Th
- 2004 Results
  - 734 Irrigation Pumps participated (15% of total)
  - Avoided MW
    - June 35 MW
    - July 33 MW
    - Aug 30 MW
    - Sep 26 MW

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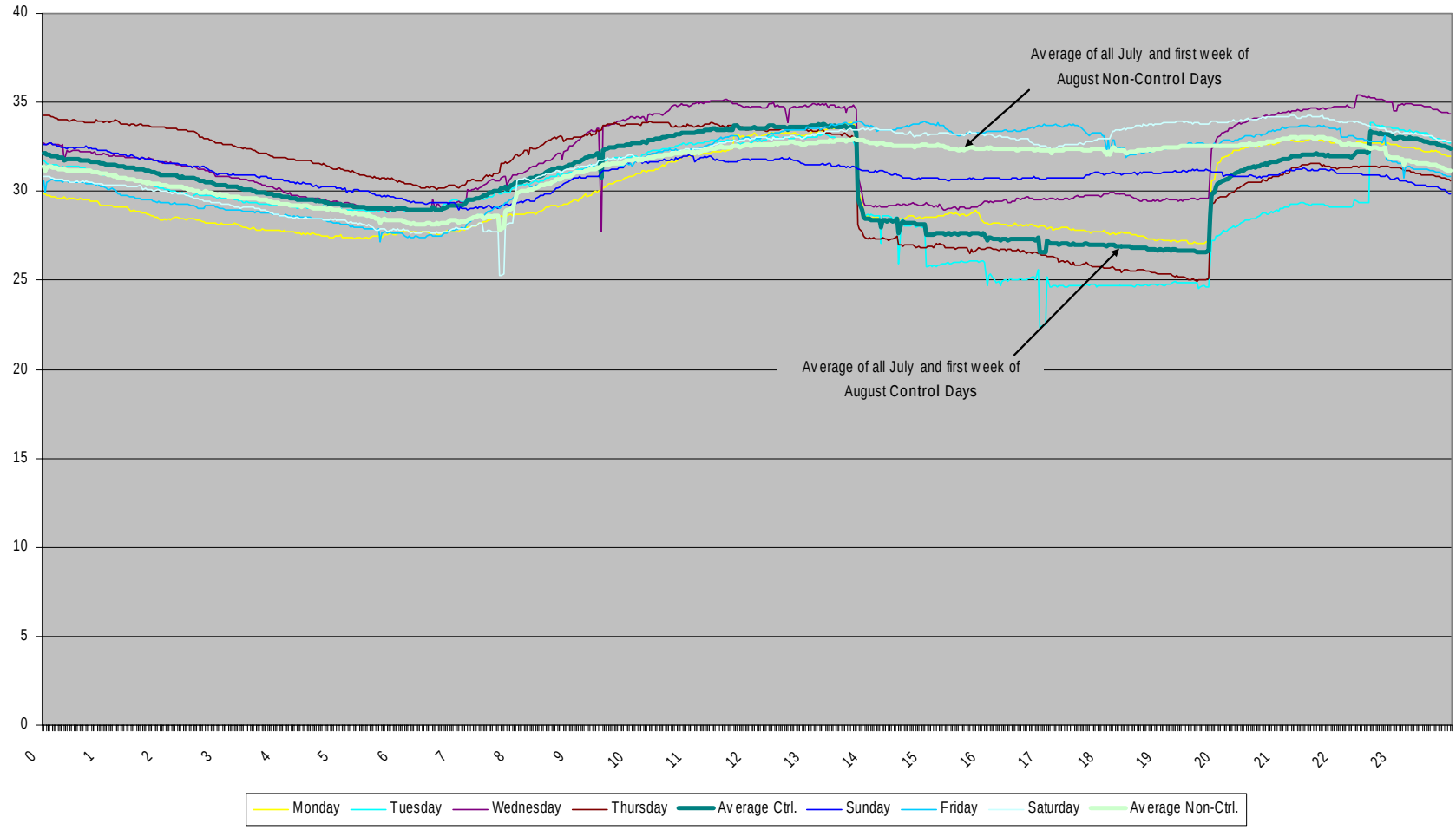
Irrigation Load Control

Big Grassy Substation Loads



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New Class 1 Program

- Commercial and Industrial Lighting Load Control (UT)
  - 10 year program.
  - Vendor – Electric City
  - Initial launch in Utah.
  - Build up to 27 MW of load control by CY2008
    - Includes 1.4 MWa of Class 2 DSM
  - Contract approved
  - Tariff filing made in Utah on December 17, 2004
  - Program launch in first quarter of 2005.