

Demand Response Programs

**Oregon Public Utility Commission
January 6, 2004**

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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.

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)

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



'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

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’

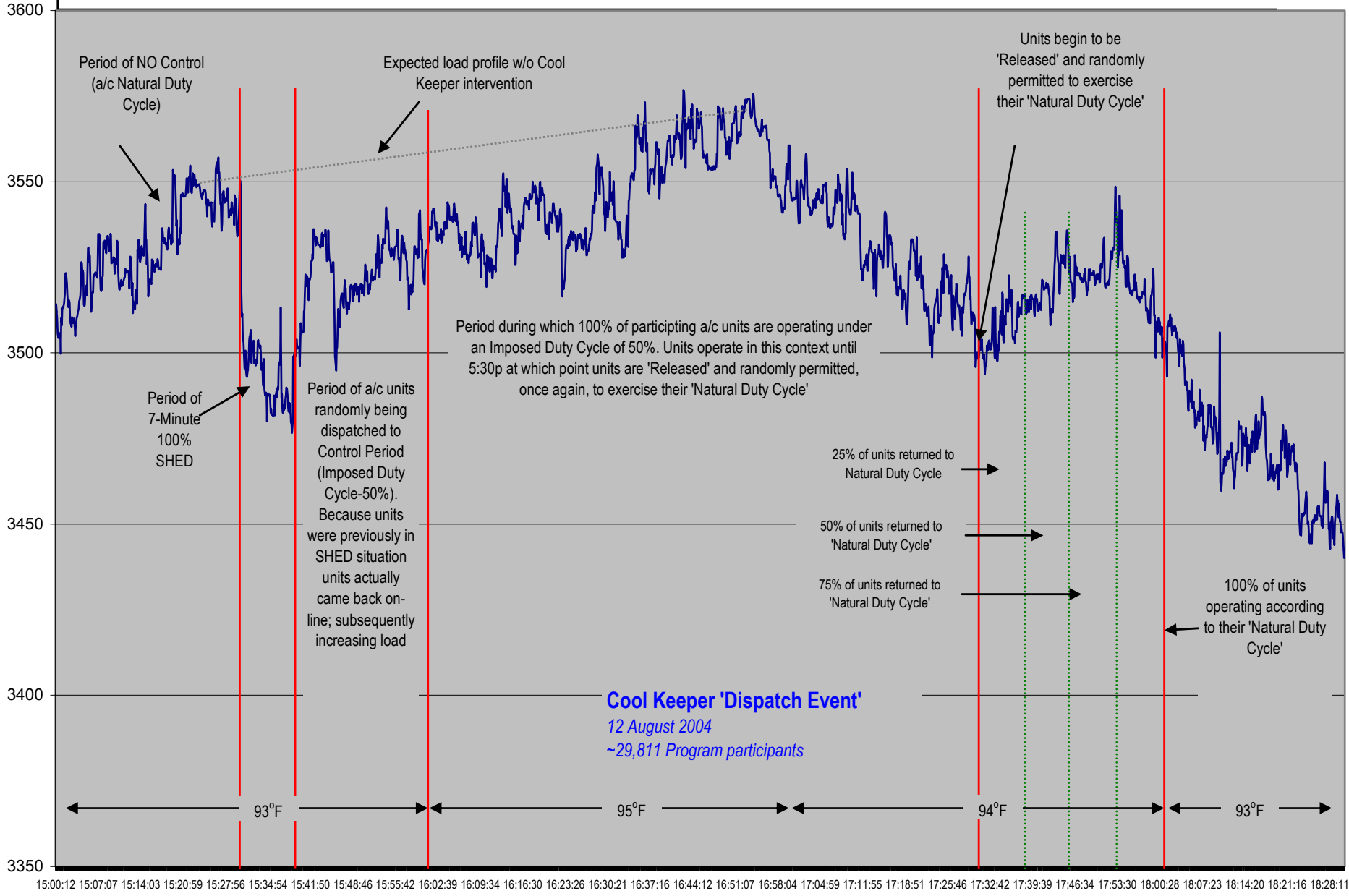
Cool Keeper

- 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



Cool Keeper Test Shed Load Profile

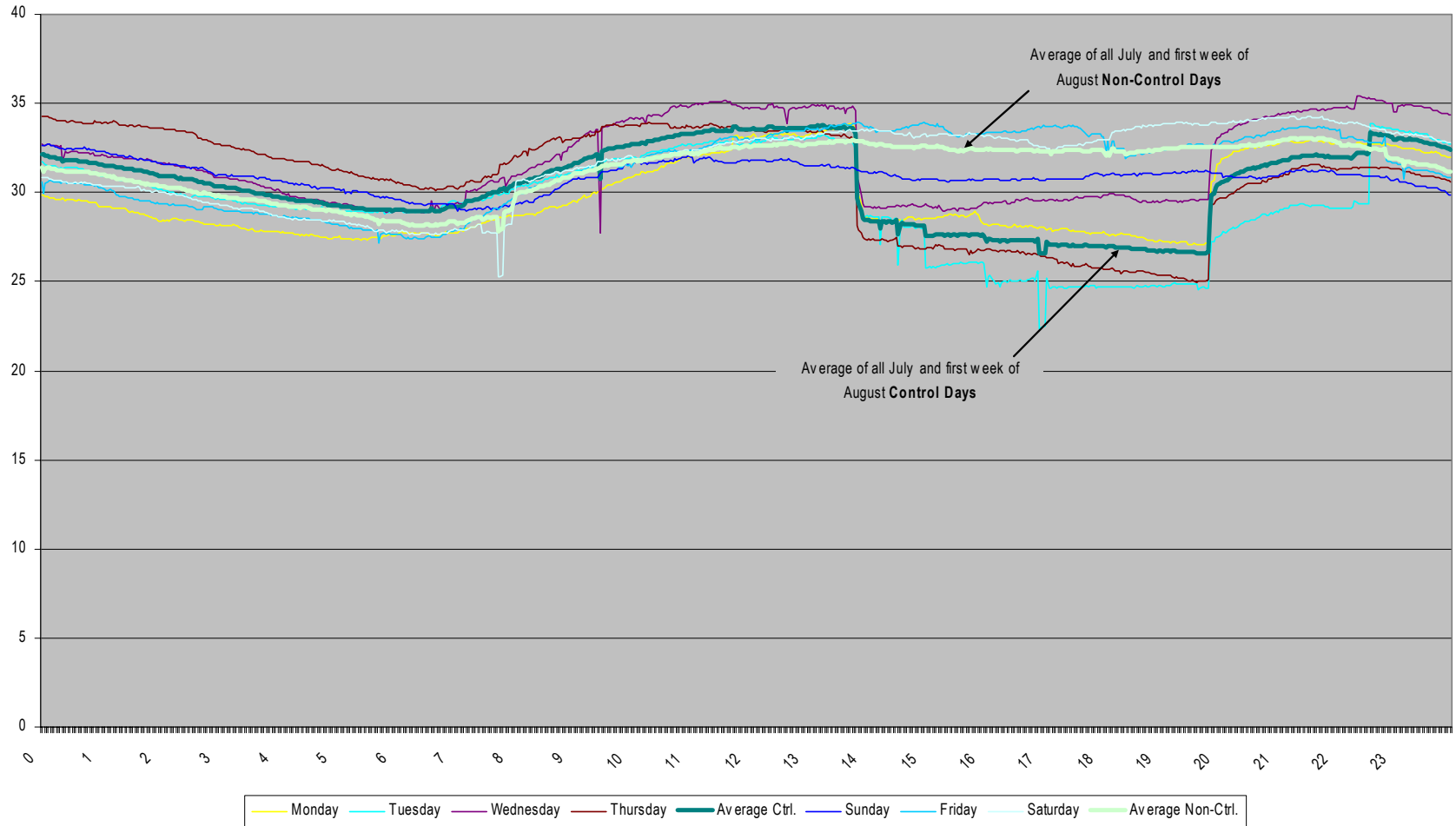


Irrigation Load Control - Idaho

- 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

Irrigation Load Control

Big Grassy Substation Loads



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.