



Water and Energy Efficiency Developments in California

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To the NARUC Water Committee
November 17, 2008
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NOTE: Mr. St. Marie's opinion are his own, and do not necessarily represent
the policies of the California Public Utilities Commission

Overview

Water and Energy Efficiency

- We want to save energy
- We want to save water
- We want to save both at the nexus
- December 2007 Decision on Water-Energy Pilot Programs
- Pending Decision on Water-Energy Pilot Programs

CPUC's Small Part of the Big Story

- Regulate Investor-Owned Water Utilities
- About 140 Class-A (large) thru Class-D (small) companies
- Account for about 1/5 of urban water use
- Does not include Agricultural Water Use
- Water Action Plan – December 2005
- Energy Efficiency Strategic Plan – September 2008

Assembly Bill 32 – Greenhouse Gas California Air Resources Board

- Climate Change Proposed Scoping Plan, latest draft of October 2008, p. 66

Table 22: Water Recommendation
(MMTCO₂E in 2020)

Measure No.	Measure Description	Reductions
W-1	Water Use Efficiency	1.4
W-2	Water Recycling	0.3
W-3	Water System Energy Efficiency	2.0
W-4	Reuse Urban Runoff	0.2
W-5	Increase Renewable Energy Production	0.9
W-6	Public Goods Charge	TBD
Total		4.8⁽⁴⁴⁾

Embedded Energy Efficiency For Water Utilities (A.07-01-024)

Three Criteria:

- Conserve water
- Use less energy-intensive water
- Make delivery and treatment systems more efficient

Embedded Energy Efficiency For Water Utilities

- December 2007 Decision (D.07-12-050) approved numerous Pilot Programs
- \$6.4 million
- Electric and Gas Utilities:
 - Southern California Edison
 - Pacific Gas & Electric
 - San Diego Gas & Electric; and
 - Southern California Gas

Embedded Energy Efficiency For Water Utilities Results of December 2007 Decision

- Conserve water – **10 Pilots**
- Use less energy-intensive water – **2 Pilots**
- Make delivery and treatment systems more efficient – **0 Pilots**

New Pilot Energy Efficiency Programs For Water Companies – Proposed

- Investor-Owned Water Utilities not included in the previously approved Pilots
- Cal Water Association Proposal
- \$1.33 million
- Pilot Operational Energy Efficiency Programs
 - Motors, pumps, variable-frequency drives, and supervisory control and data acquisition systems (SCADA systems)

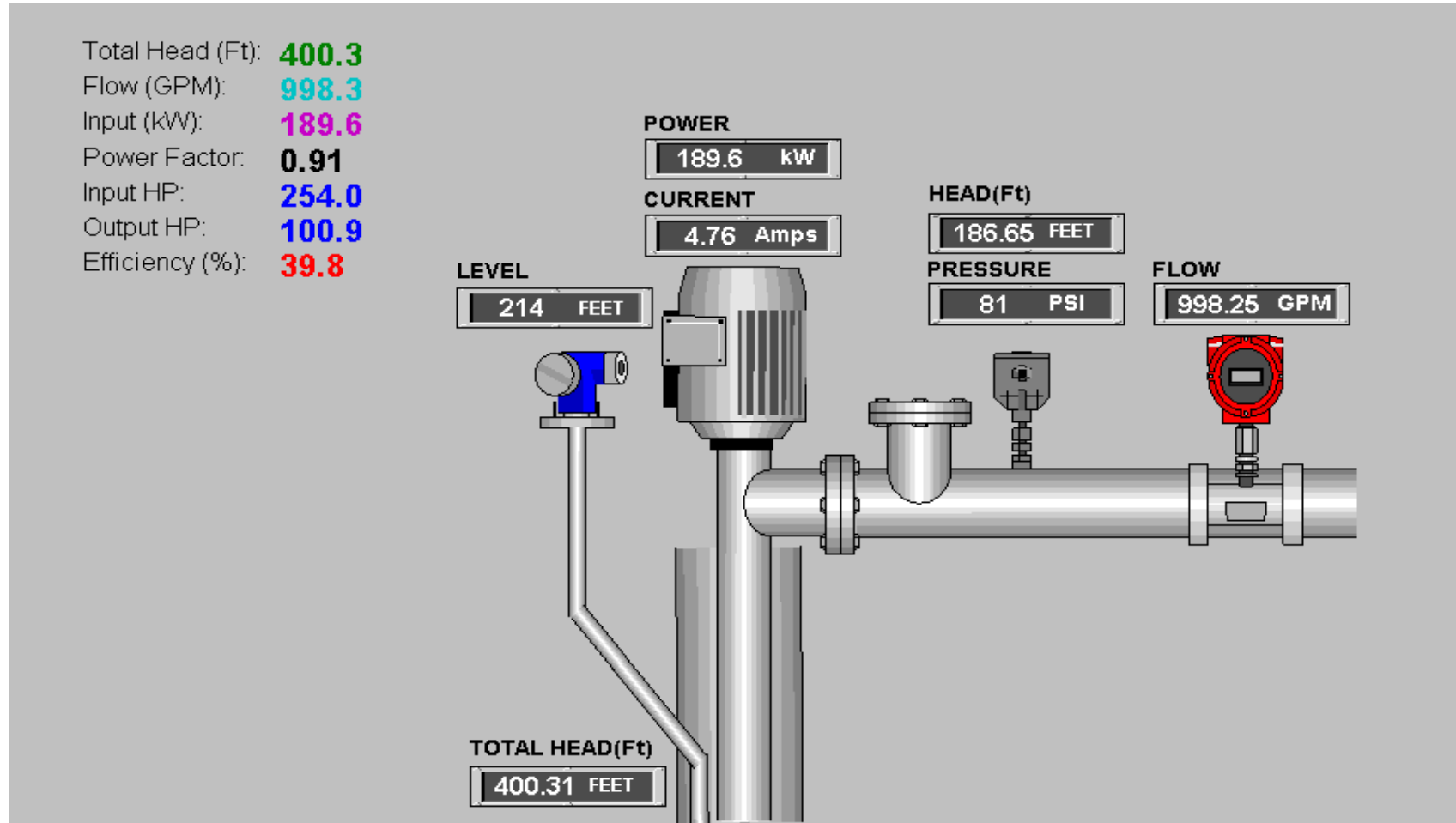
New Pilot Energy Efficiency Programs For Water Companies – Proposed

■ Participating Utilities

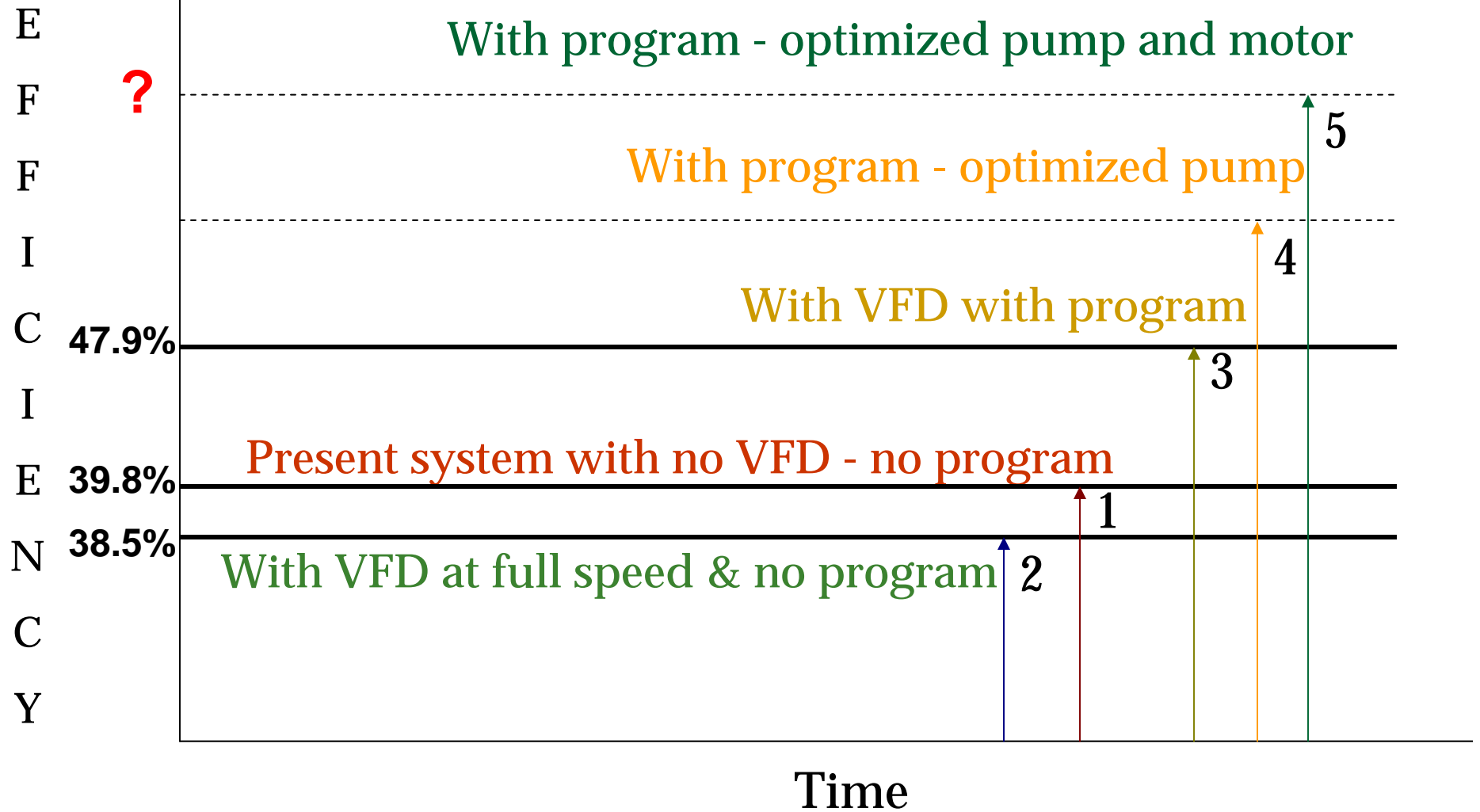
- ❑ Alco Water Service (PG&E)
- ❑ Del Oro Water Company (PG&E)
- ❑ California Water Service (PG&E and SCE)
- ❑ Golden State Water Company (PG&E and SCE)
- ❑ San Jose Water Company (PG&E)
- ❑ East Pasadena Water Company (SCE)

Operational Efficiency – Stage 1

- 300hp motor is running at full speed – Screen Shot

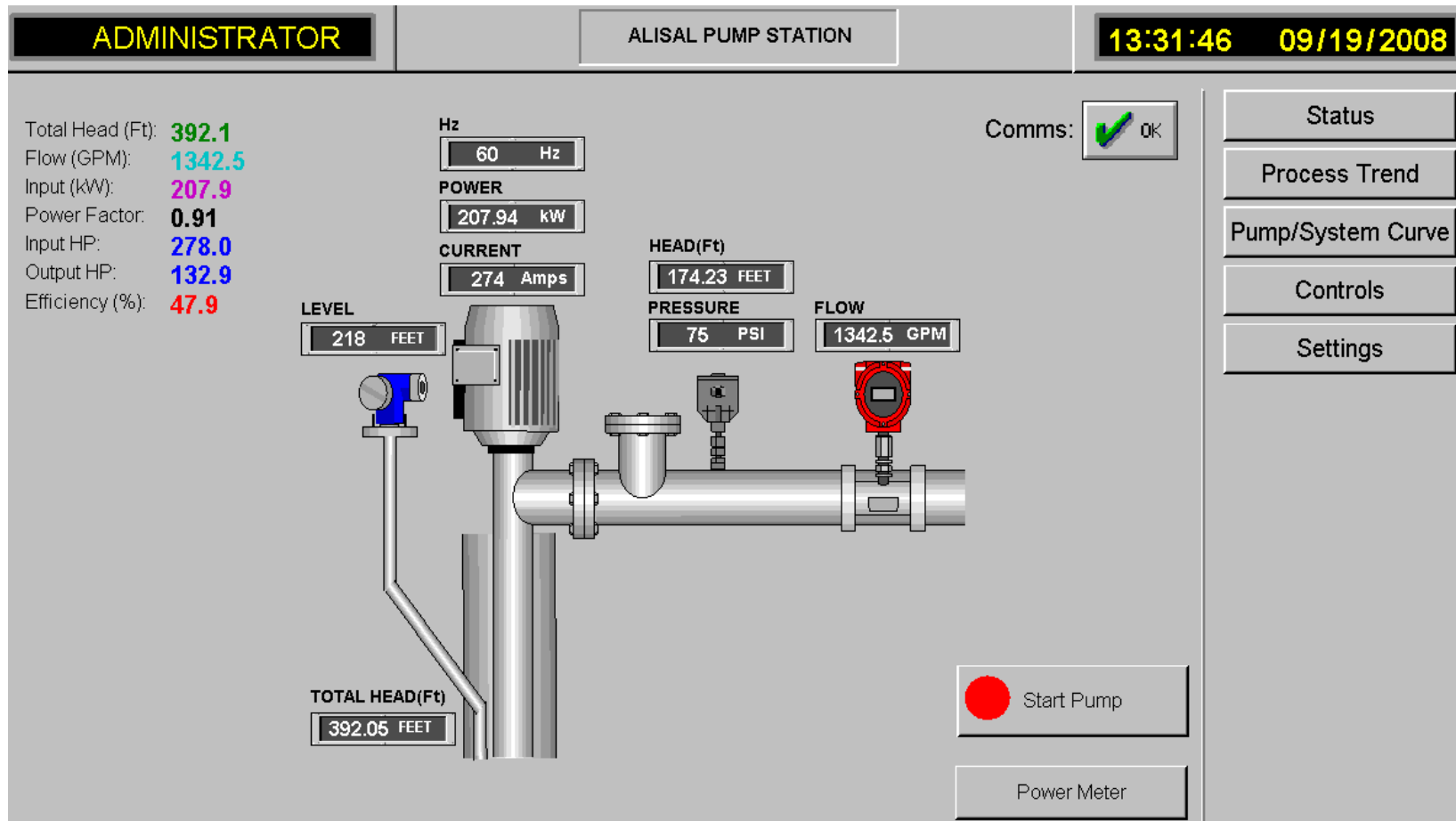


Operational Energy Efficiency Program



Operational Efficiency – Stage 3

- When the system is running at optimum efficiency with the VFD following the pump curve – Screen Shot



Finding Efficiencies in The Water-Energy Connection

- CPUC is deeply involved in developing water-energy research. We are helping California to “Walk the Walk”
- Ongoing projects, watch for results.
- Proposed Pilot Operational Energy Efficiency Programs will generate more research, development, and demonstration through measurement, documentation, and verification of the results using the SCADA system

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