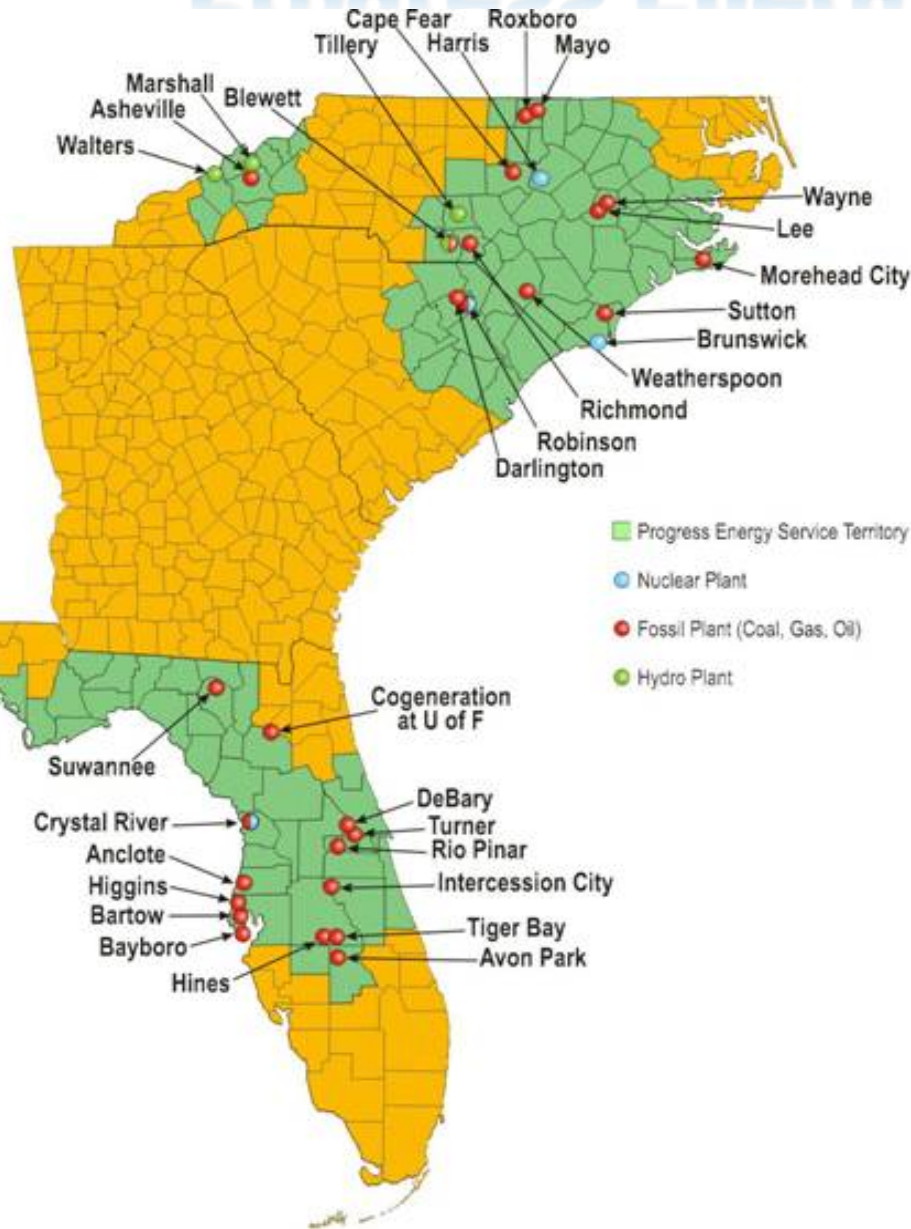




Sciencetech 2009 Symposium
January 13-15, 2009

**PROGRESS ENERGY
M & D CENTER**

Progress Energy Territory



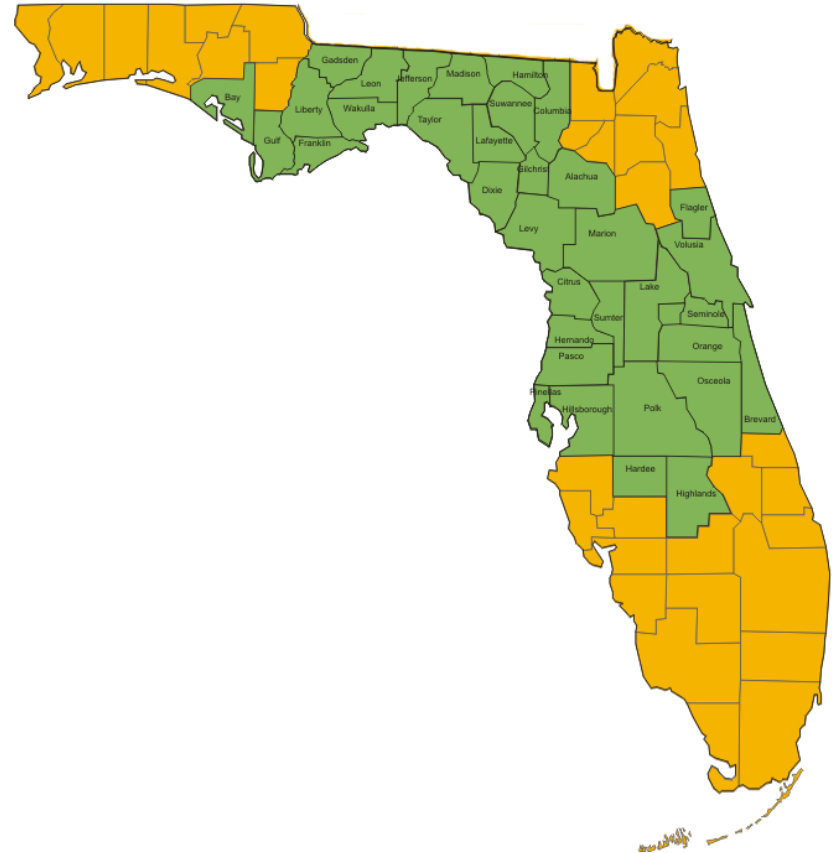
3.1 million customers
21000 MW

32 plant sites with 181 total units

- 31 Fossil Coal/Oil units
- 15 Hydro units
- 130 CT/CC units
- 5 Nuclear units

Progress Energy Florida

- More than 1.7 million customers in 35 counties
- Over 100 years of service
- 4,300 employees
- More than 9,000 megawatts of generation
- 5,000-mile transmission and 40,000-mile distribution network
- 14 generating plant sites (64 units)

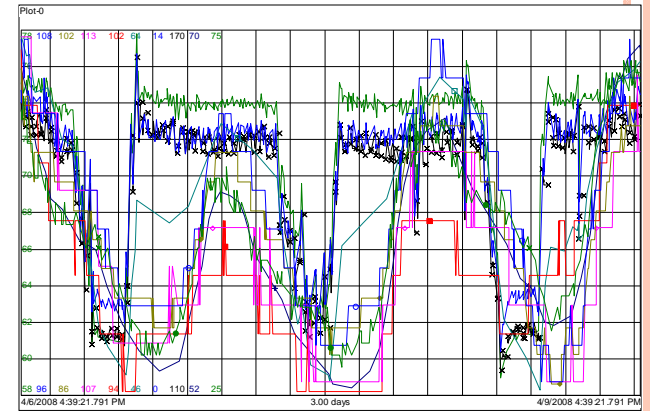


M&D Center



Fleet Wide Pattern recognition
monitoring for Fossil, CT, & CC

Nuclear & Transmission
interested



Pattern Recognition

- 3 full time employees with IT support
 - Over 3000 Models running

Pattern Recognition

- Initially the focus of the M&D Center was early detection of reliability issues with rotating equipment
 - CT group has been monitoring for 5 years
 - Fossil steam plants is 1 ½ years old
- Most of 2008 was spent building our own models & training our own data
- During the latter part of 2008 we focus more in monitor and maintaining our models
- Goal for 2009 is to expand the capability of the PdP models to include key thermal performance indicators

2008 Pattern Recognition Finds

Fossil Finds

	<u>Avoided Costs</u>
Auxiliary transformer cooling fan failure	101,000
Air Heater Hot End bearing oil pump failure	32,285
Lube Oil heat exchanger pluggage	17,504
Air Heater Ammonia Bisulphate differential ramp	11,760
XO Feedwater heater extraction supply valve failure	18,521
Plugged circ water pump cooler	8,060
Air Heater guide bearing cooling fan failure	2,613
Air Heater hot end bearing oil circulator filter plugged	1,931
Total Fossil	193,674

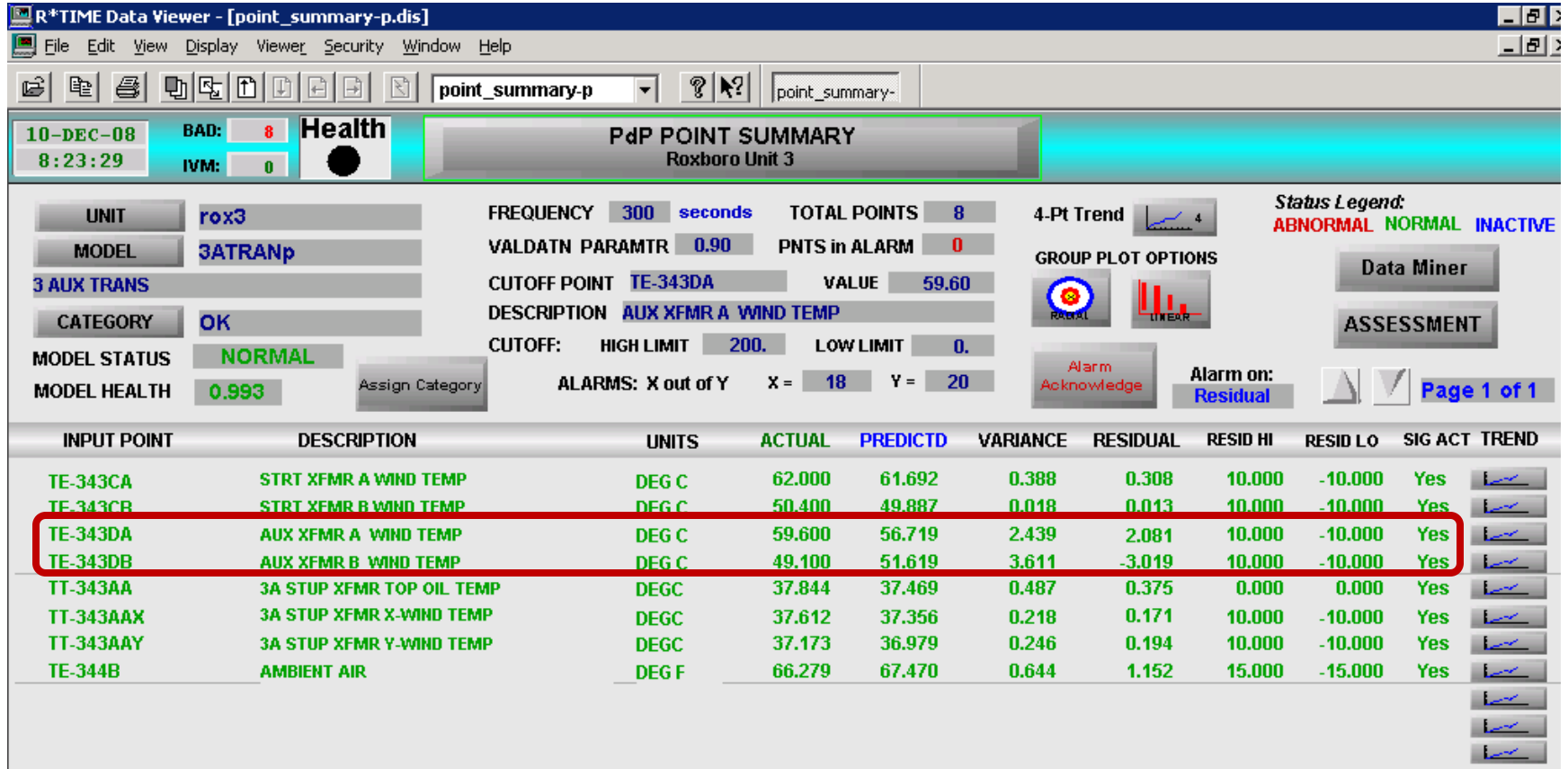
CT Finds

Generator J strap (gooseneck) failure	1,993,800
Exhaust flex seal deterioration	42,100
Performance Instrumentation malfunction	33,540
Steam Turbine oil deflector rub	32,391
Failed lube oil cooling valve	7,251
Total CT	2,109,082

Total = \$2,302,756

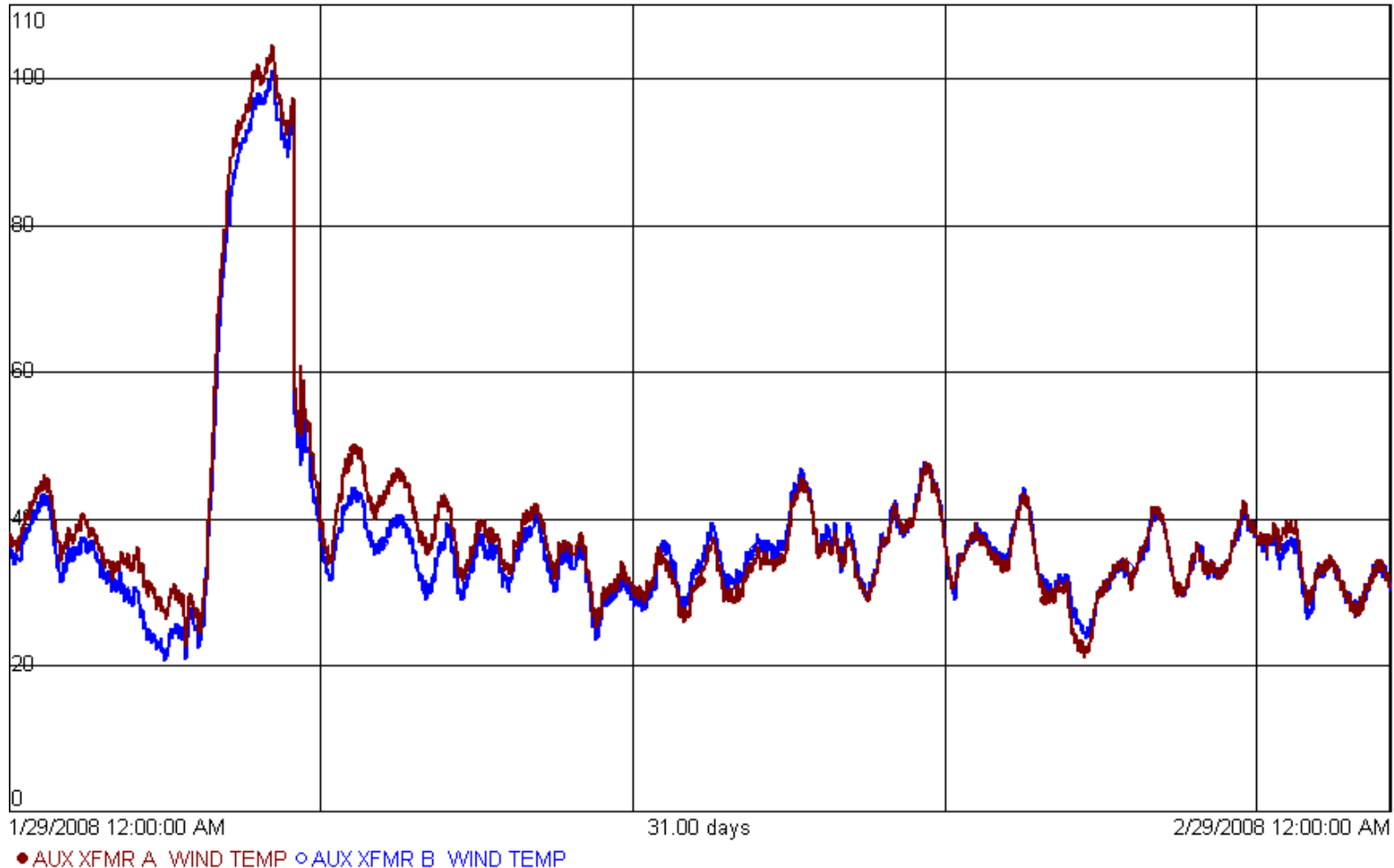
Auxiliary Transformer

avoided costs = \$101,000



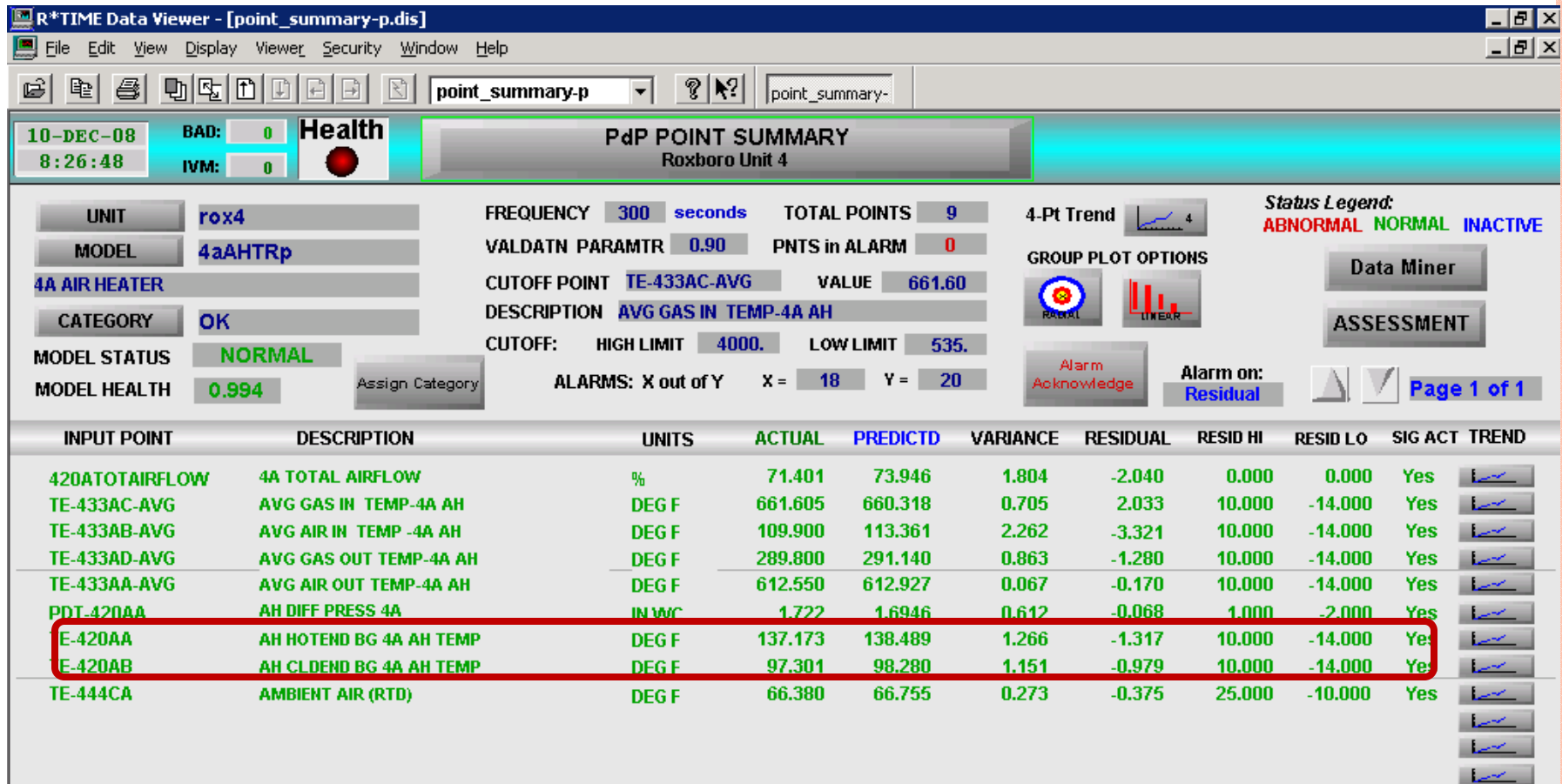
Auxiliary Transformer

avoided costs = \$101,000



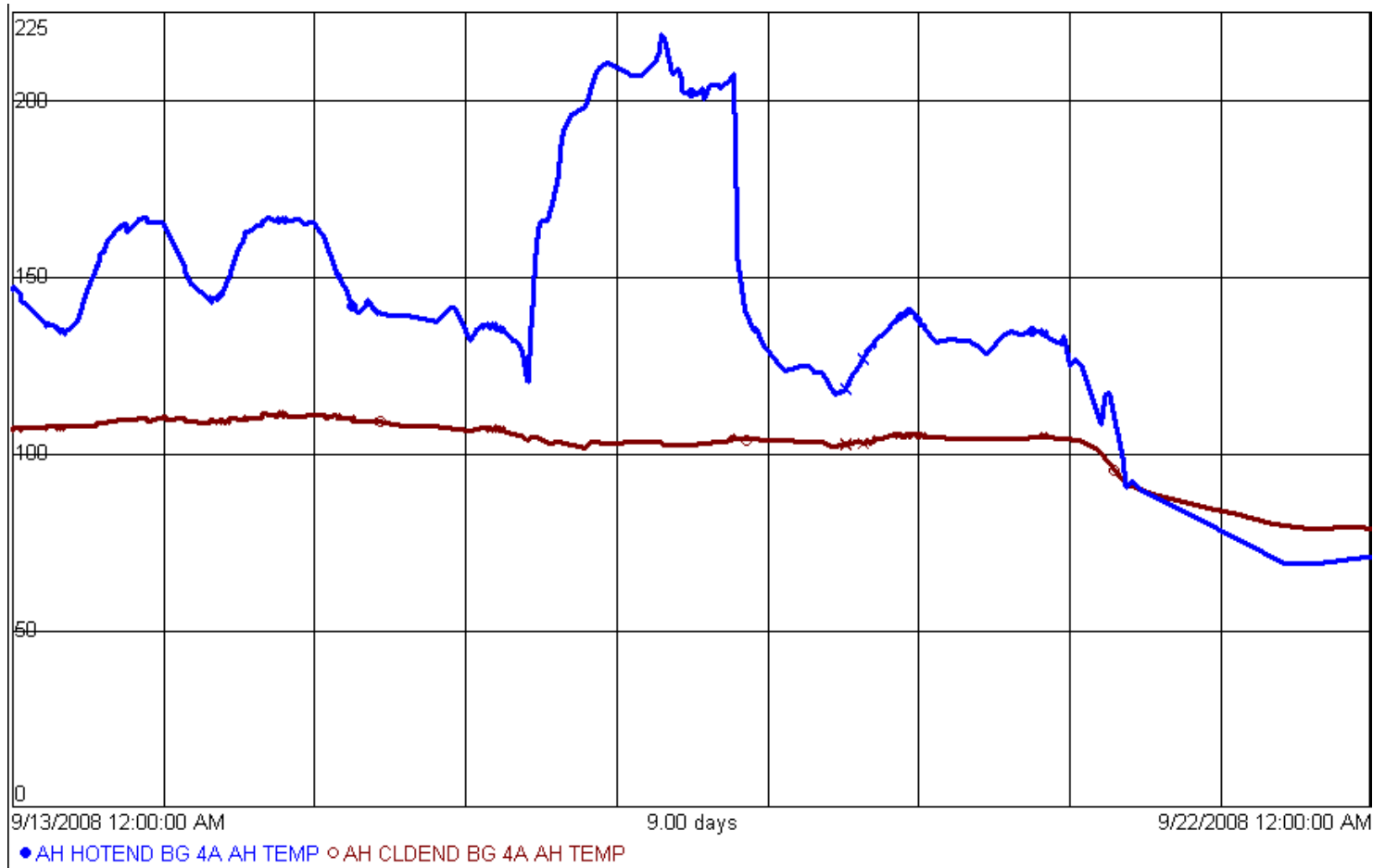
Air Heater Hot End Bearing

avoided costs = \$32,285



Air Heater Hot End Bearing

avoided costs = \$32,285



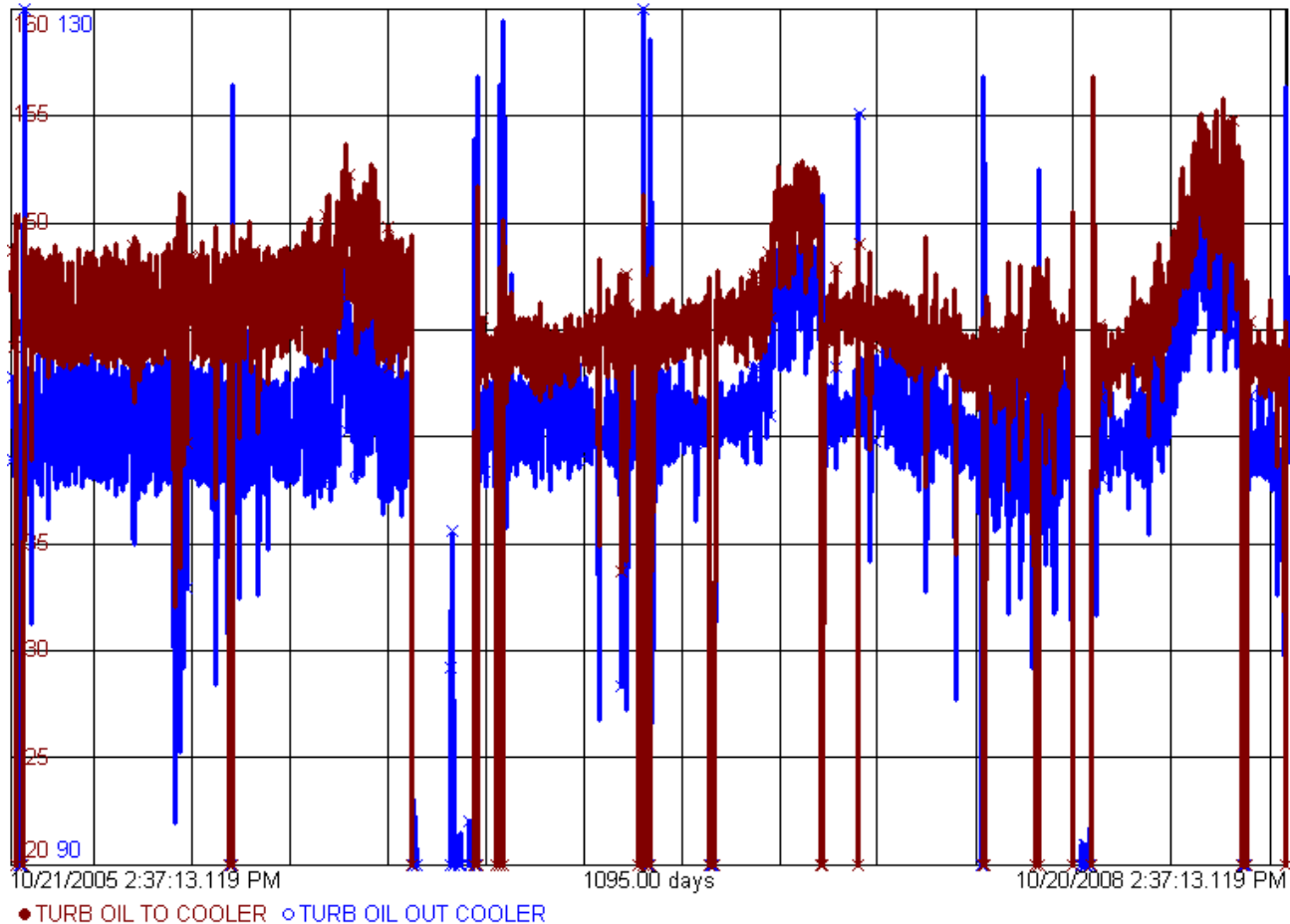
Lube Oil Heat Exchanger

avoided costs = \$17,504



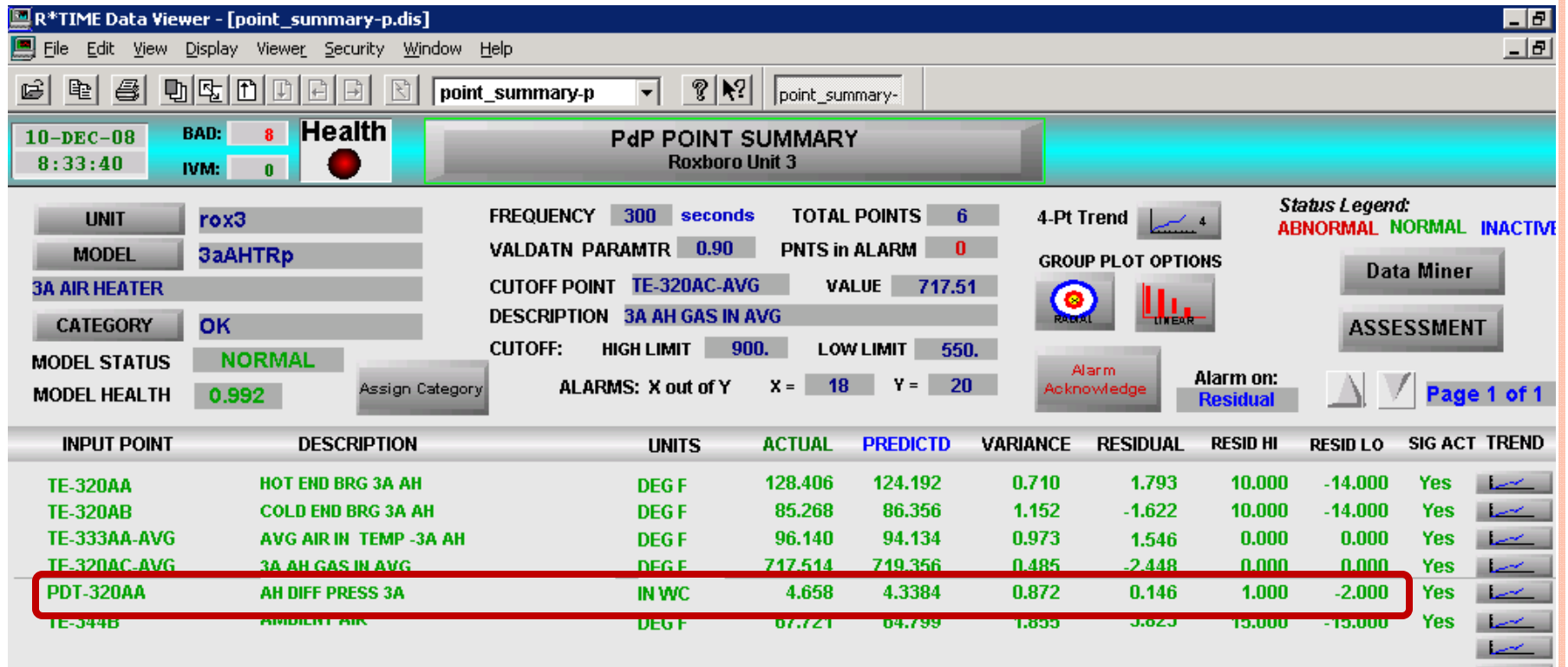
Lube Oil Heat Exchanger

avoided costs = \$17,504



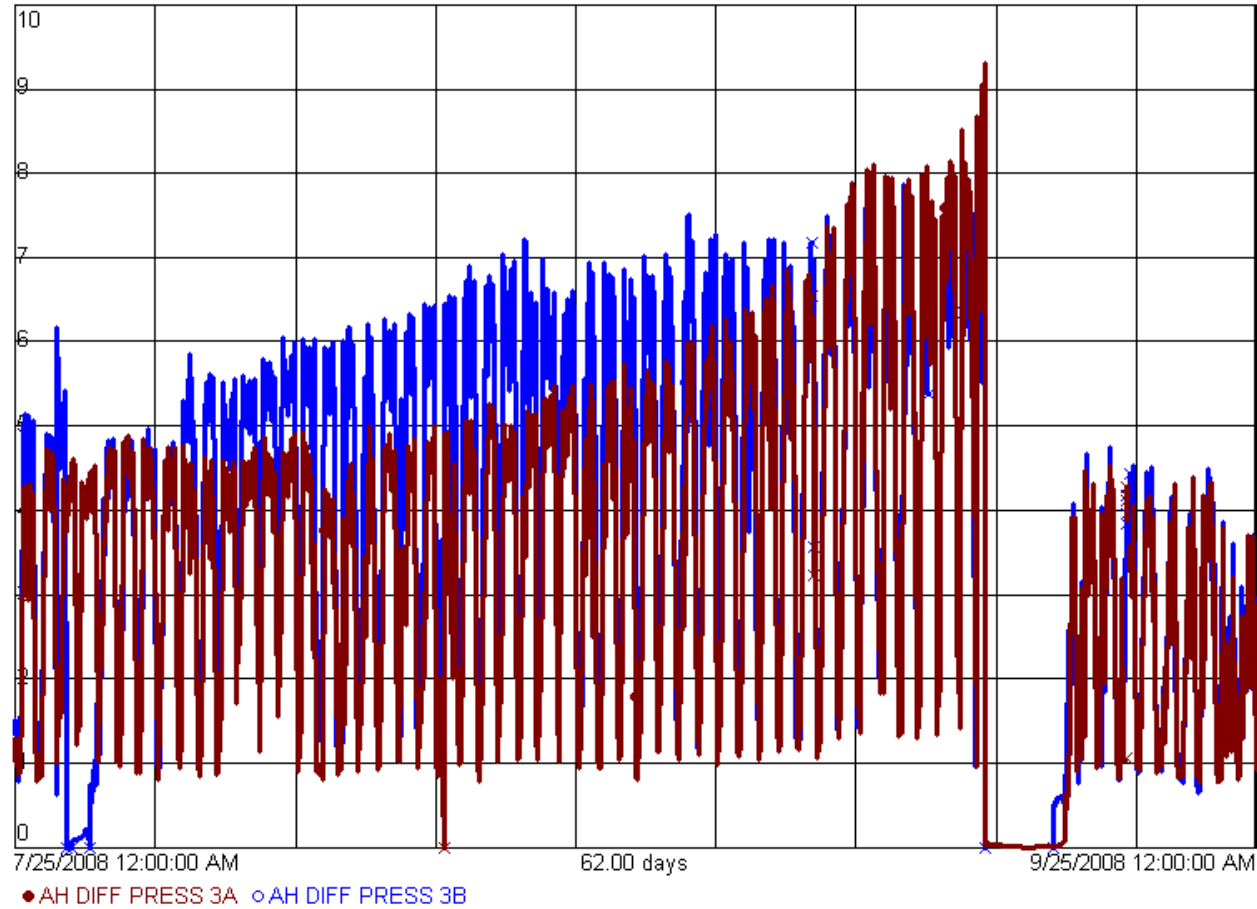
Air Heater Differential

avoided costs = \$11,760



Air Heater Differential

avoided costs = \$11,760



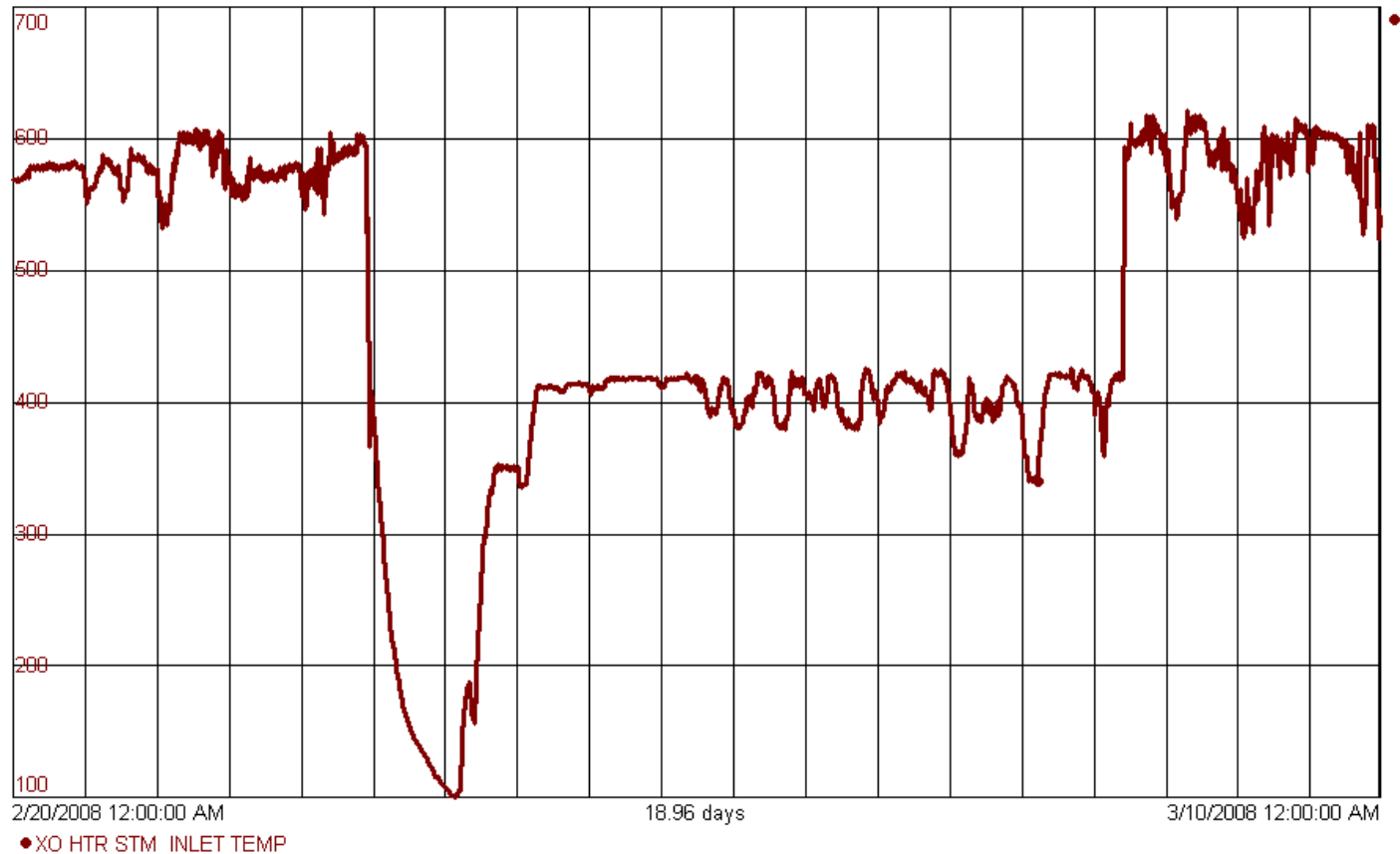
XO Feedwater Heater Extraction Valve

avoided costs = \$18,521



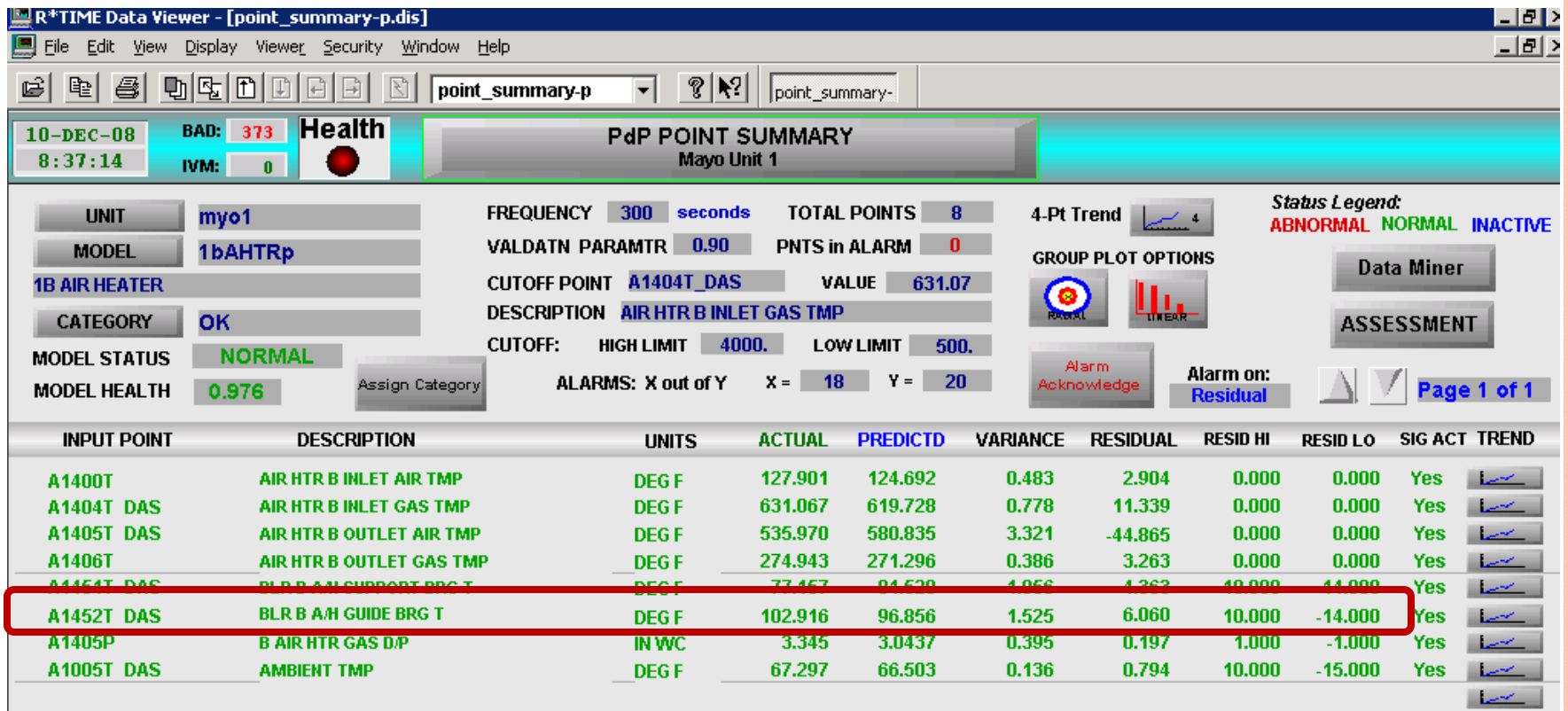
XO Feedwater Heater Extraction Valve

avoided costs = \$18,521



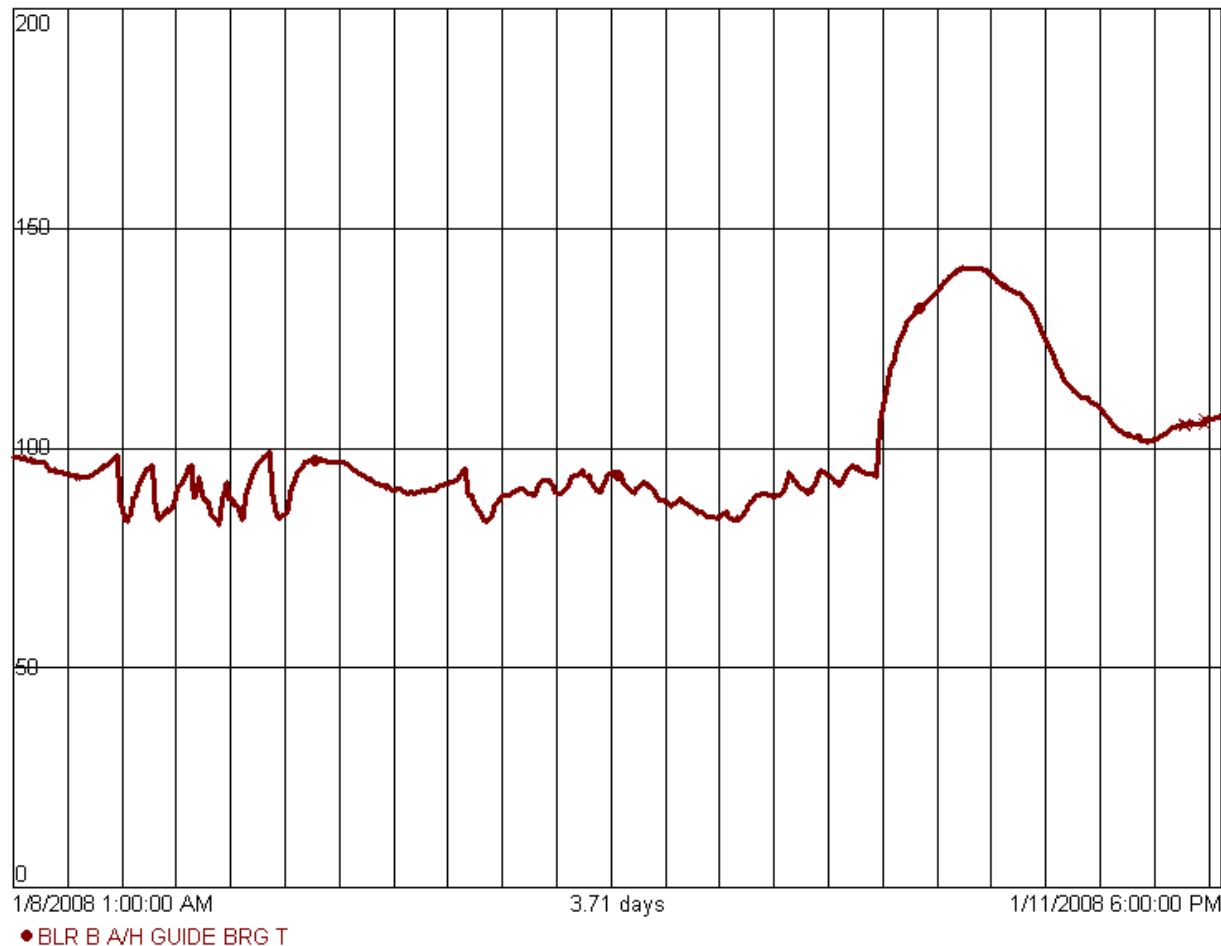
AH Guide bearing cooling fan

avoided costs = \$2,613



AH Guide bearing cooling fan

avoided costs = \$2,613



QUESTIONS ???

