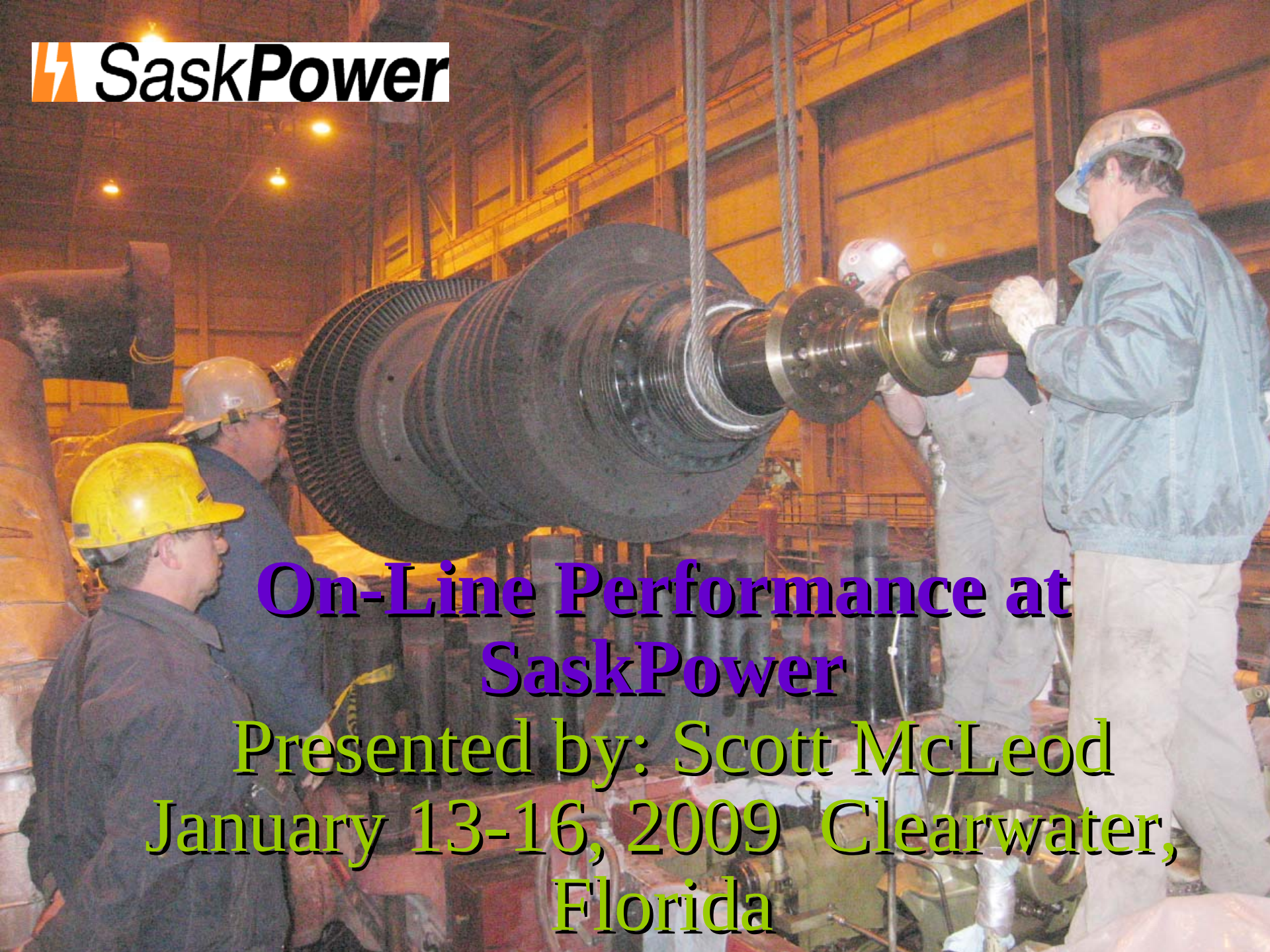

On-Line Performance at SaskPower

Presented by: Scott McLeod

January 13-16, 2009 Clearwater, Florida

Presentation Overview

1. Introduction to SaskPower & On-Line Performance
2. Project description
3. Implementation and technology
4. Benefit Assessment
5. Future thoughts

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Where is Saskatchewan?

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SaskPower's Assets

Generation (net capacity)

Hydroelectric

1. **Athabasca Hydroelectric System** - 23 MW
   - Wellington (5 MW)
   - Waterloo (8 MW)
   - Charlot River (10 MW)
2. **Island Falls Hydroelectric Station** - 102 MW
4. **E. B. Campbell Hydroelectric Station** - 288 MW
5. **Nipawin Hydroelectric Station** - 255 MW
10. **Coteau Creek Hydroelectric Station** - 186 MW

Natural Gas

3. **Meadow Lake Power Station** - 44 MW
7. **Landis Power Station** - 79 MW
8. **Queen Elizabeth Power Station** - 385 MW
11. **Success Power Station** - 30 MW

Wind

12. **Centennial Wind Power Facility** - 150 MW
14. **Cypress Wind Power Facility** - 11 MW

Coal

15. **Poplar River Power Station** - 572 MW
16. **Boundary Dam Power Station** - 813 MW
17. **Shand Power Station** - 276 MW

Independent Power Producer

6. **Meridian Cogeneration Station** - 210 MW
9. **Cory Cogeneration Station** - 228 MW
13. **SunBridge Wind Power Project** - 11 MW
18. **NRGreen Kerrobert Heat Recovery Project** - 5 MW

Transmission

- 230 kV
- 138 kV
- 138 kV line operating at 72 kV
- Switching Station
- Interconnection

SaskPower capacity:

Hydro	854 MW	27%
Gas	538 MW	17%
Wind	161 MW	5%
Coal	1661 MW	51%
SP Total	3214 MW	100%

IPP Capacity:

Gas	438 MW	96%
Wind	11 MW	3%
Heat Rec	5 MW	1%
IPP Total:	454 MW	100%

TOTAL 3668 MW

Population 1,040,000 (2008)

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About SaskPower

Company Profile:

- Crown Utility owned by province of Saskatchewan
- Generation & Transmission company
- Sales executed by separate company (NorthPoint Energy)
- ~$4 billion in assets

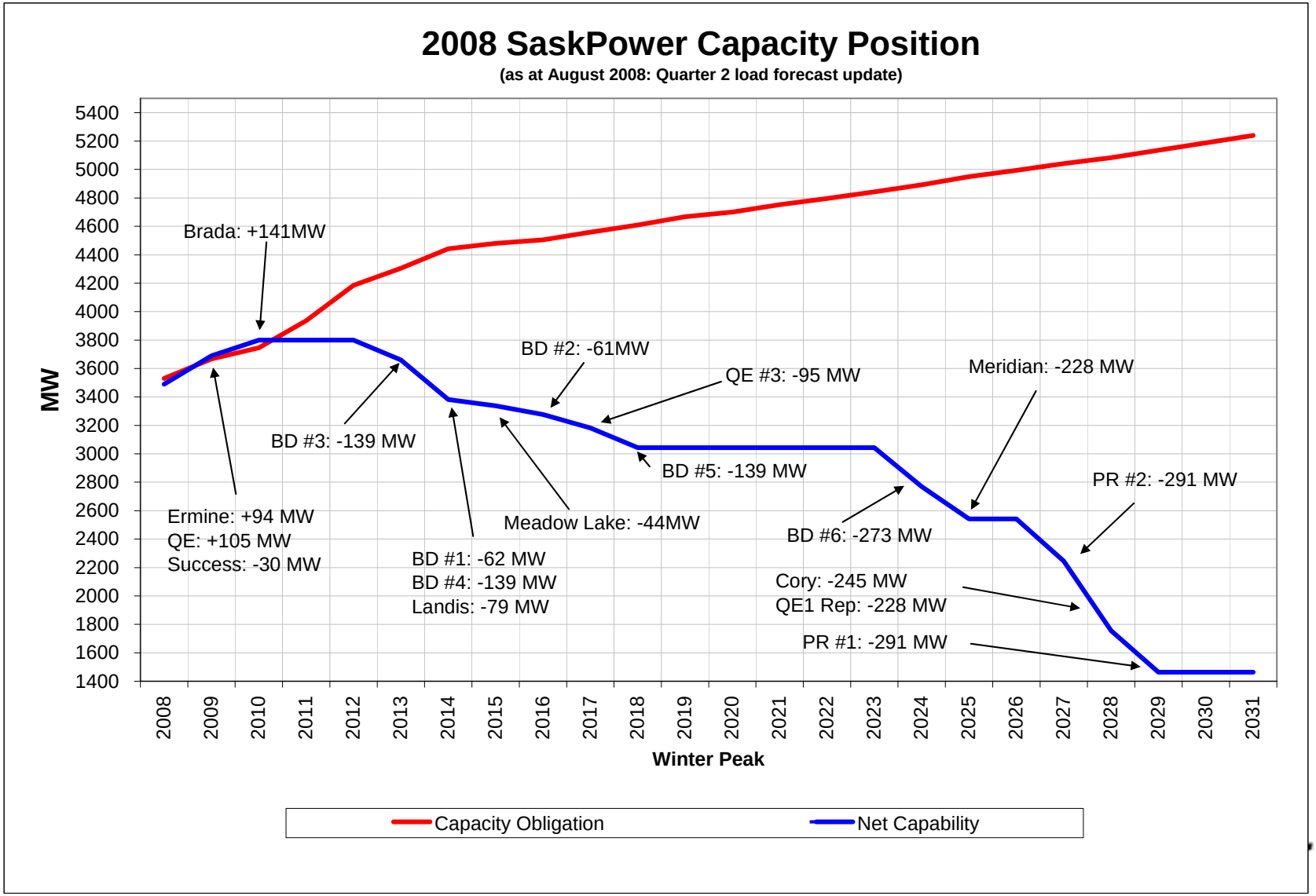
Short-term Growth Strategy:

- Gas, gas and more gas (higher than expected load growth)
- Combination of SaskPower (~300 MW) & IPP investment (200-400 MW) by 2010

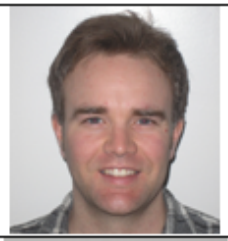
Long-term Growth Strategy:

- Everything is on the table
- Clean-coal, Combined Cycle, Polygeneration, Nuclear

Load Growth & Unit Retirements



Production Performance Group

	**W.P. (Perry) Hill** Supervisor 566-3339 phill@saskpower.com Plant Contact: Shand		**S.W. (Scott) McLeod** Performance Specialist II 566-2243 smcleod@saskpower.com Plant Contact: Poplar River, Queen Elizabeth
	**D.E. (Dan) Hemingway** Performance Specialist II 566-2868 dhemingway@saskpower.com Plant Contact: (reassigned to the SPOAD project)		**A. (Alyssa) McLaughlin** Performance Engineer I 566-3171 amclaughlin@saskpower.com Plant Contact: Boundary Dam B & C Plant
	**D. (David) Mah** Performance Specialist II 566-3338 dmah@saskpower.com Plant Contact: None (Full-time results support)		**J. (Jason) Wasilieff** Performance Engineer I 566-3589 jwasilieff@saskpower.com Plant Contact: Boundary Dam A Plant
	**D.J. (Dwayne) Selensky** Chemical Performance Specialist II 566-2282 dselensky@saskpower.com Plant Contact: All (Chemistry issues)		**A. (Arlen) Reed** Performance Specialist I 566-2998 areed@saskpower.com Plant Contact: All (Chemistry issues)

- Remote Monitoring
- Field testing
- Statistical Reporting
- Site meetings with plants
- Monitoring & Statistical tools development & maintenance

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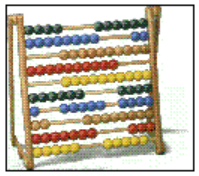
Current Monitoring tools

On-Line Tools:

- Data historian
- Engineering calcs in Bailey

Off-Line Tools:

- Engineering calcs
- Anomaly detection
- Modeling
- Team room
- Operator Logs

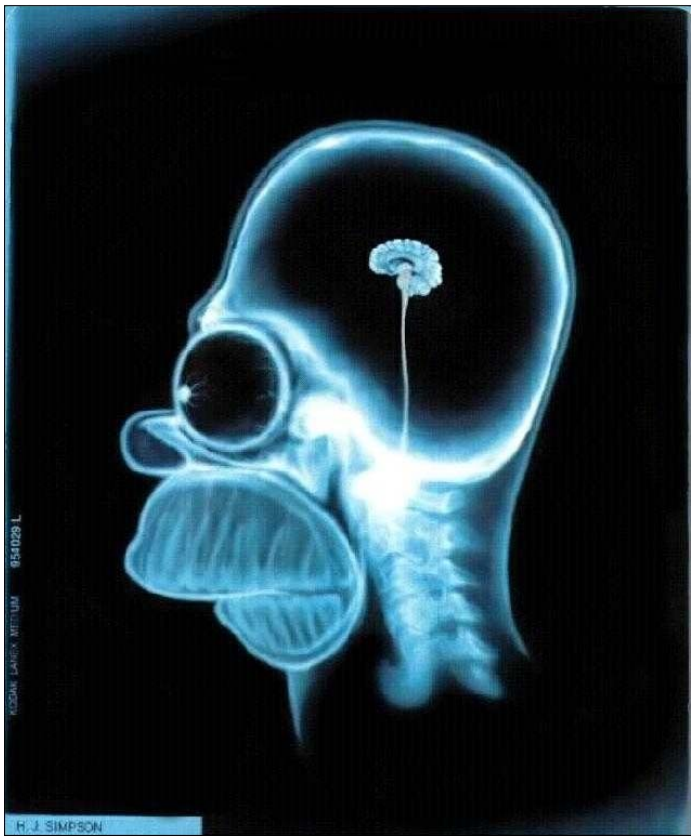


Monitoring Program Assessment

Program reviewed in 2005:

- Slow & time consuming (off-line spreadsheets, field testing)
- Bailey calcs not maintained, not validated, not trusted.
- Missing data/instruments
- Spend too much time on data manipulation, not enough on assessment & follow-up
- Often perform post-mortems, and not enough preventative assessments.
- Too many tools – information scattered.
- No standardized processes.

Not doing things as smart as we could be



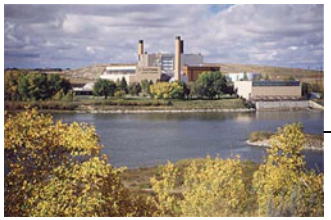
Performance Monitoring Goals:

- Efficient unit operation & high availability *
- Evaluation of equipment & cycle condition *
- Performance Optimization * (open loop)
- Performance Problem solving *
- Maintenance planning prior to scheduled outages *
- Maintenance evaluation after maintenance activities *
- Development of input/output dispatch curves *
- Knowledge & History capture

** Source: ASME PTC PM Performance Monitoring Guidelines for Steam Power Plants*

Project Team

Operations Support – Production Performance



Queen Elizabeth

Ivory Tower

IT, BP&P

Poplar River

Boundary Dam

Shand

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Program Adjustment Scorecard

- ❑ Automate engineering calculations
- ❑ Data Validation & replacement
- ❑ Automate anomaly detection
- ❑ What if modeling (turbine & boiler)
- ❑ System Maintainability
- ❑ Instrumentation gap remediation
- ❑ Pilot new tools at one site to prove Real Time concepts
- ❑ Production Performance Group provide on-going program leadership, maintenance, and continuous improvement
- ❑ Standardize & Network Operator logs system
- ❑ Common dashboard for KPIs visible to entire company
- ❑ Consolidate tools sets where practical
- ❑ Educate employees about the bottom-line impacts they can have.

Program Exclusions

- ☒ Closed loop optimization
- ☒ Outage & Derate tracking
- ☒ Asset Management

3rd Party OLP systems:

Open Loop Systems (no DCS interface):

1. Thermal Performance Systems

BLACK & VEATCH building a world of difference™ ENERGY • WATER • INFORMATION • GOVERNMENT

NeuCo The Optimization Standard™

EMERSON Process Management

GE Energy

SCIENTECH.

GP

2) Anomaly Detection Systems

SmartSignal

Matrikon

SCIENTECH.

BLACK & VEATCH building a world of difference™ ENERGY • WATER • INFORMATION • GOVERNMENT

NeuCo The Optimization Standard™

GE Energy

3) Asset Management Systems

Matrikon

MAXIMO®

meridium Profit from a new perspective

Closed Loop Systems (DCS interfaced):

4) Alarm Management Systems

Matrikon

EMERSON Process Management

PAS®

GE Energy

5) Controls Optimizer Systems

EMERSON Process Management

NeuCo The Optimization Standard™

Babcock & Wilcox Canada

GE Energy

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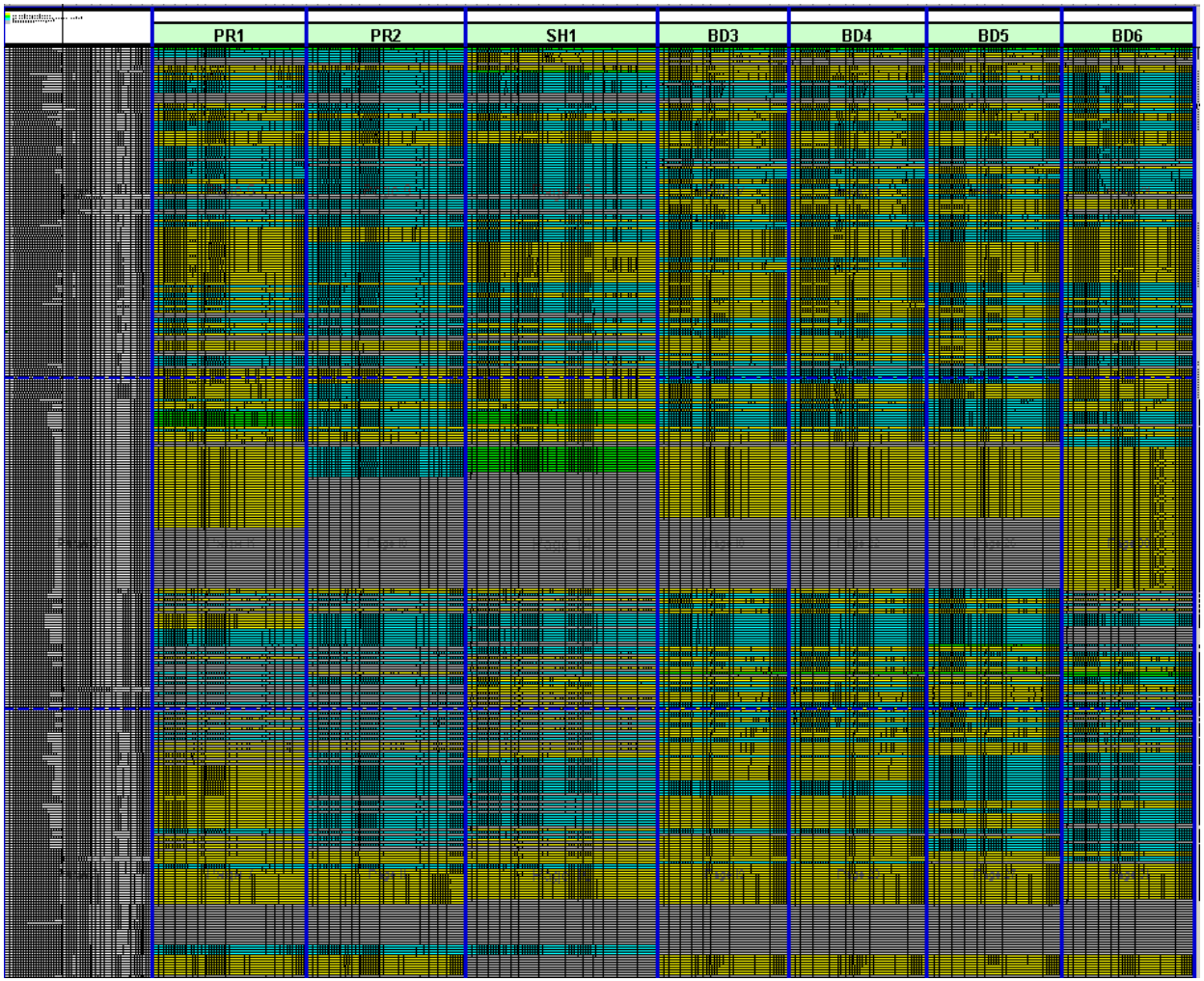
What are others doing?

Instrumentation Gap Analysis:

- Unit by unit comparison on each point.
- Thermal Performance & Equipment condition points.
- Instrumentation added by:
  - ➢piggy-backing on DCS upgrade projects
  - ➢leading a monitoring network project where no DCS upgrade planned



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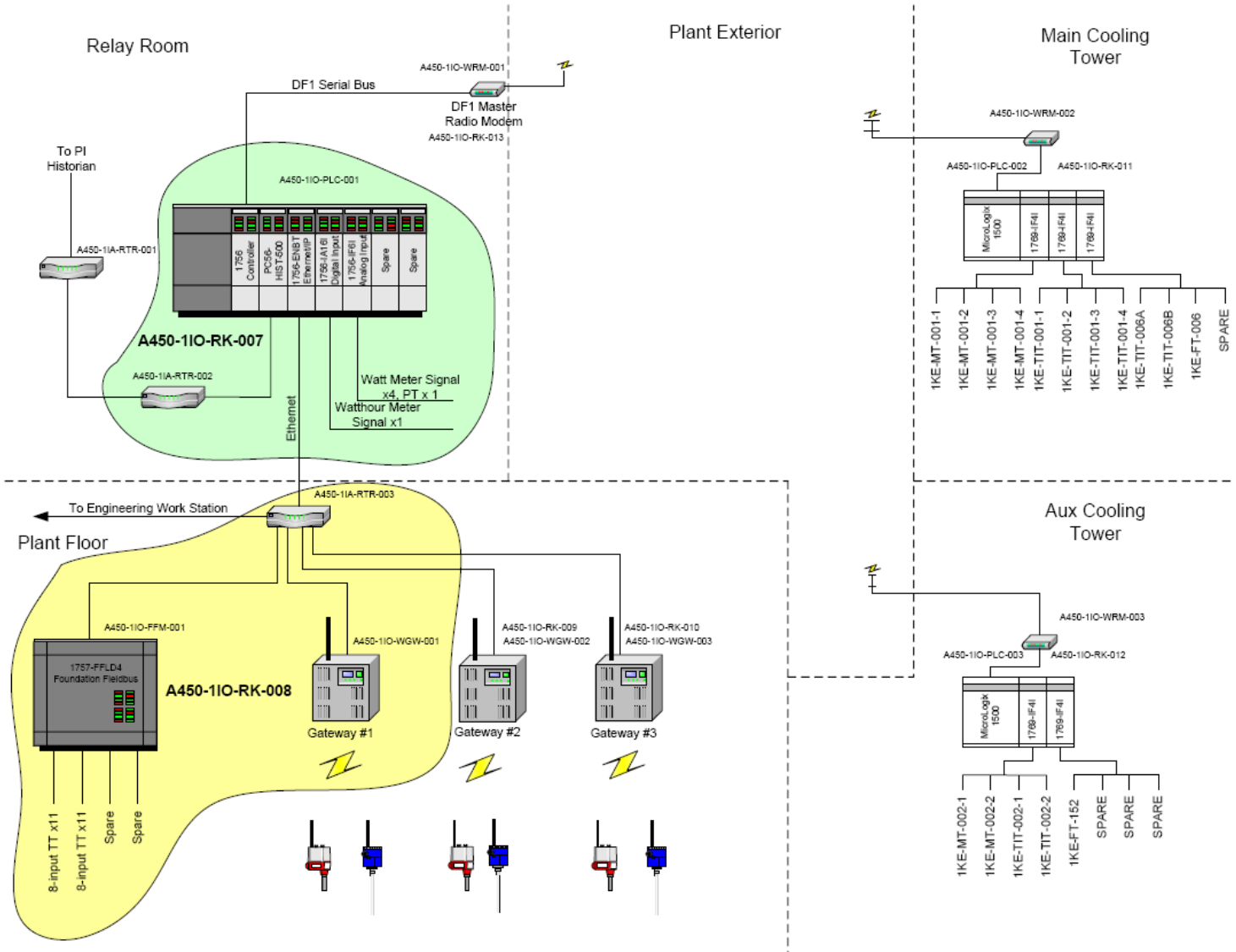
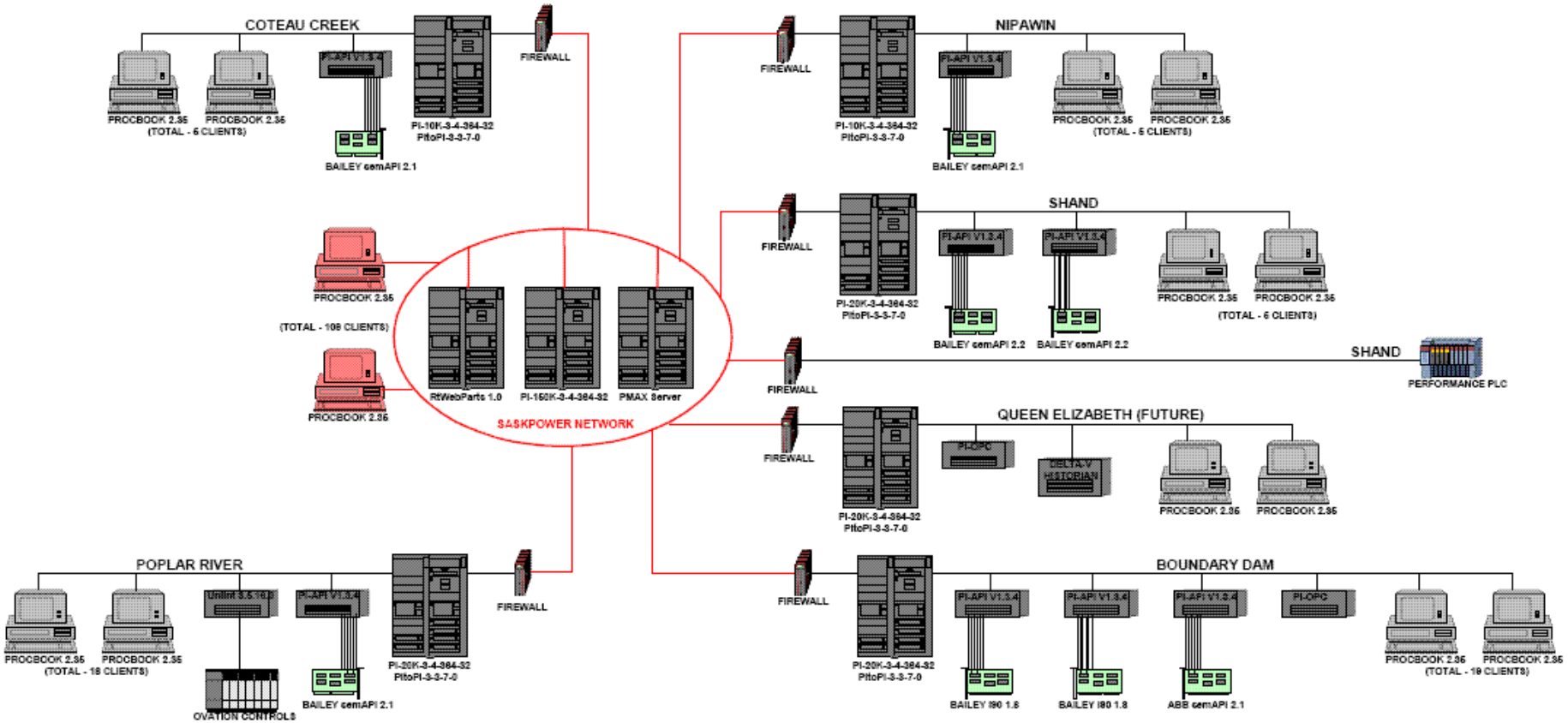
Monitoring Instrument Network:



On-Line Performance Network:



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Pilot site Selection

- Start with base load units.
- PRPS, a 2 unit coal fired facility was constructed in:

  1981 (PR2)

  1983 (PR1)
- DCS upgraded from Bailey Infi90 to Emerson Ovation during major overhaul on:

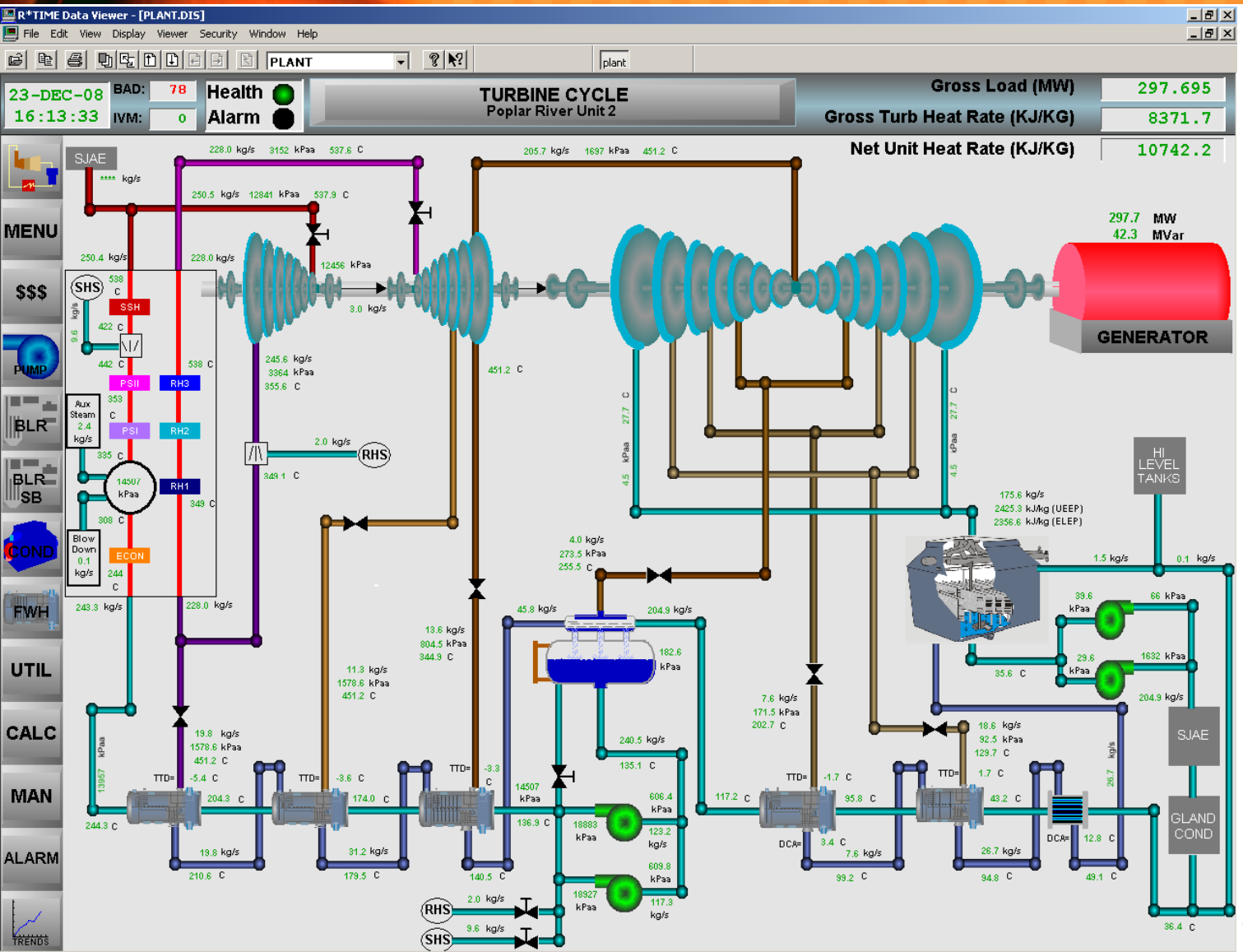
  PR2 (2006)

  PR1 (2008)
- Instrumentation gaps have been filled
- Capacity issues on PR2 boiler (O2 split, low exit temps, sec air system deficiencies)

Project Timeline Summary

- January 2006: Began OLP system replacement research (forced by Emerson controls upgrade).
- April 2006: Hosted demos by 5 Third party OLP vendors. (Attended by PRPS, SHPS, BDPS, OS, BP&P).
- Summer 2006: S. McLeod attended 3 user group meetings (Scientech, General Physics, SmartSignal).
- Fall 2006: Assembled specification, received budget pricing
- January 2007: Submitted CPA.
- March 2007: Hosted demos by 4 Third party OLP vendors. (Attended by PRPS, SHPS, BDPS, QEPS, OS, BP&P).
- April 2007: Updated Instrument Gap Analysis
- April 2007: Managers meeting presentation
- *May 2007: S. McLeod attend user group meetings (NeuCo / Black & Veatch).*
- *Fall 2007: Project Approval, Issue RFP*
- *2008: Pilot system on PR2, Begin Instrumentation upgrades (SHPS, BDPS, QEPS)*
- *2009-2010: Complete instrumentation upgrades, Install systems on PR1, SHPS, BDPS, QEPS*

Thermal Performance Monitoring



PMAX

Heat rates

Mass flows

Energy balances

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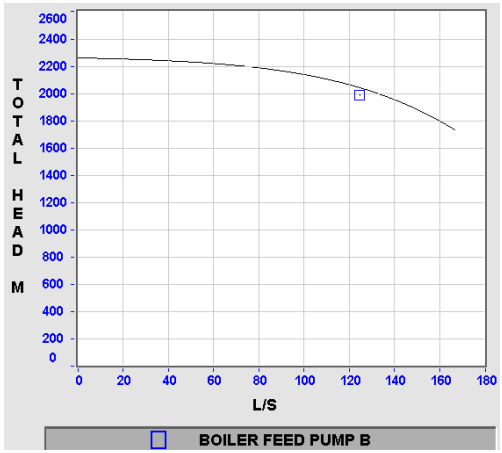
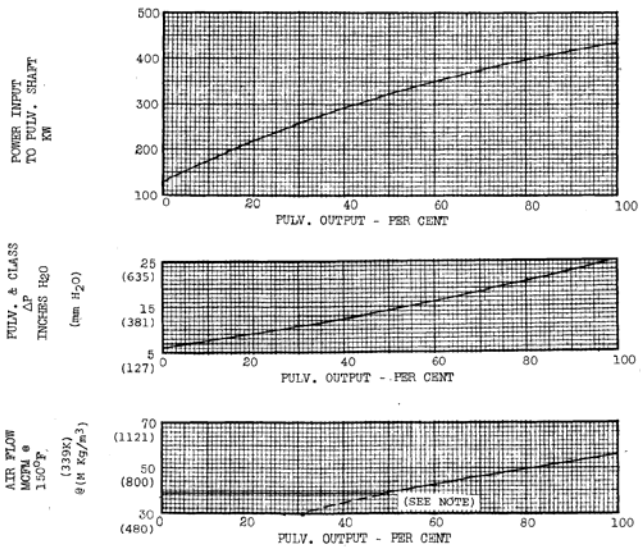
Equipment Performance Monitoring

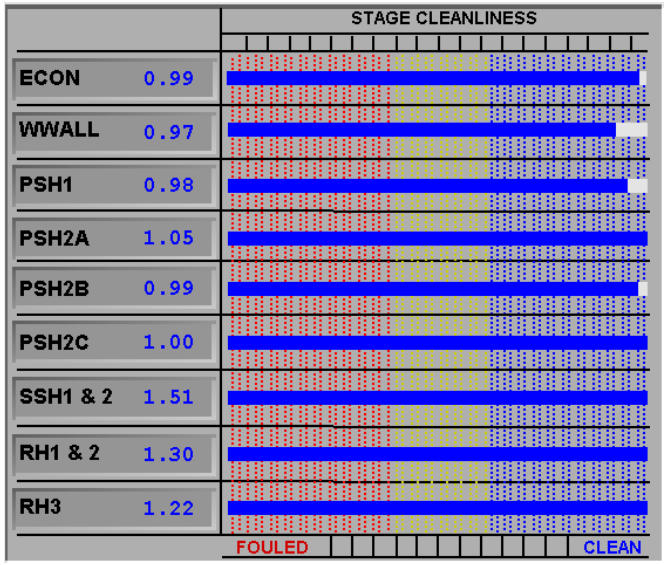
PMAX



Pump Curves



Mill Curves



Boiler Cleanliness

STAGE	EFF (%)	TARGET EFF (%)	Δ EFF. (%)
GOV STAGE	82.2	82.5	0.0
HP1 STAGE	79.0	82.6	-3.5
HP OVERALL	79.7	83.3	-3.8

Turbine Stage Efficiencies

	ACTUAL	EXPECTED	Δ
CLEAN FACTOR	1.10	0.90J	0.20
TEMP (°C)	6.1	15.0	-8.9
PRESS (KPAA)	4.49	5.21	-0.66
SUBCOOLING (°C)	0.00	0.00J	0.00

Condenser Performance

	ACTUAL	EXPECTED	Δ
FFWT (°C)	245.1	241.5	3.7
TTD (°C)	-5.7	-1.2	-4.3
DCA (°C)	6.1	5.6	0.6
T RISE (°C)	40.4	39.6	0.8

FW Heater Performance

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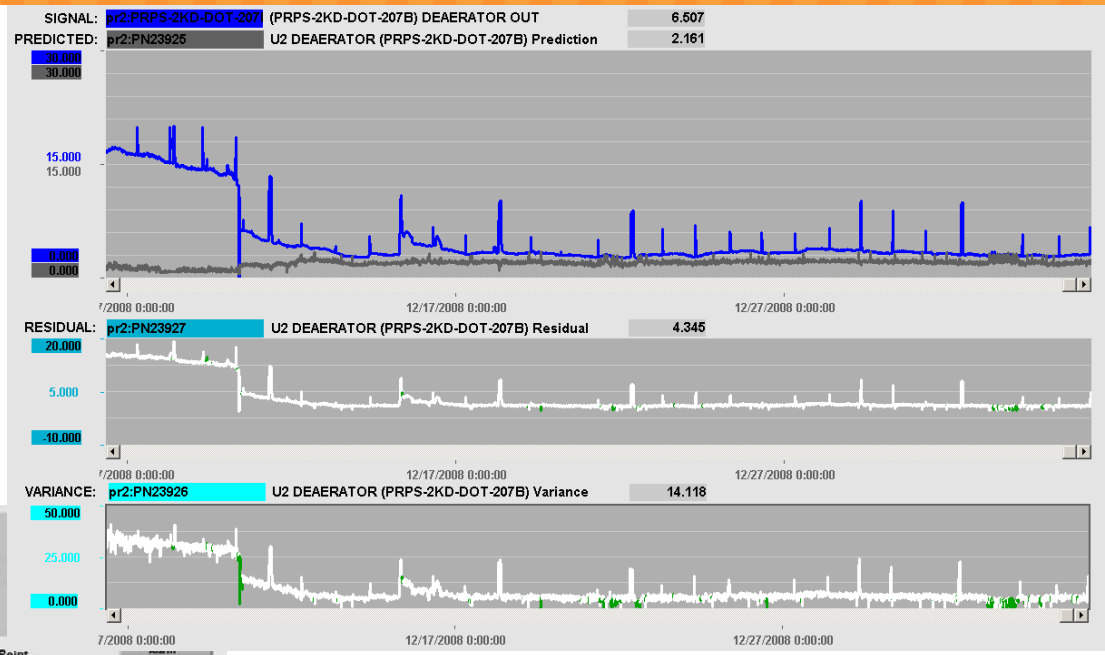
Anomaly Detection

PdP



UNIT pr2
MODEL 2DAHTRp
U2 DEAERATOR
CATEGORY OK
MODEL HEALTH 0.964
MODEL STATUS ABNORMAL
ABNORMAL POINTS 2

PROCESSING RATE 300 seconds
VALIDATION PARAMETER 0.90
TOTAL POINTS 20
CUTOFF POINT PRPS-2EL-SVJT-790
(PRPS-2EL-SVJT-790) SELECTED MEGAWATTS
CUTOFF VALUE 305.44
HIGH CutOff 1000. LOW CutOff 180.
ALARMS X out of Y: X = 10 Y = 12
ALARM ON Residual

GRAPHIC

GROUP PLOTS 4 Point

Page 1 of 1

Status Legend: NORMAL ABNORMAL INACTIVE

INPUT POINT	DESCRIPTION	UNITS	ACTUAL	PREDICTD	VARIANCE	RESIDUAL	RESID HI	RESID LO	SIG ACT	TREND
PRPS-2EL-SVJT-790	(PRPS-2EL-SVJT-790) SELECTED MEGAWA	MW	305.443	299.335	0.294	3.482	0.00	0.00	Yes	
PRPS-2SD-DVF-194	(PRPS-2SD-DVF-194) CEP DISCHARGE FL	KG/S	209.395	209.640	0.586	5.040	0.00	0.00	Yes	
PRPS-2SJ-CVFT-033	(PRPS-2SJ-CVFT-033) COMPENSATED FW	KG/S	250.817	246.815	0.156	1.753	0.00	0.00	Yes	
PRPS-2SJ-TT-210	(PRPS-2SJ-TT-210) DEA FW IN TEMP	C	117.664	117.812	0.108	-0.149	0.00	0.00	Yes	
PRPS-2SJ-TT-215	(PRPS-2SJ-TT-215) DEA FW OUT TEMP	C	134.982	134.958	0.016	0.024	2.00	-2.00	Yes	
PRPS-2KD-DOT-207A	(PRPS-2KD-DOT-207A) DEAERATOR IN DI	ug/L	10.826	5.1627	3.477	5.609	2.00	-2.00	Yes	
PRPS-2KD-DOT-207B	(PRPS-2KD-DOT-207B) DEAERATOR OUT D	ug/L	6.507	2.2316	12.587	4.275	0.30	-0.30	Yes	
PRPS-2SN-TT-277	(PRPS-2SN-TT-277) HP HTR 4 DRAINS T	C	140.355	140.671	0.188	-0.316	0.00	0.00	Yes	
PRPS-2SN-ZT-276A	(PRPS-2SN-ZT-276A) HP HTR 4 NORMAL	%	58.875	60.271	0.123	-0.364	0.00	0.00	Yes	
PRPS-2SE-PT-247	(PRPS-2SE-PT-247) DEA EXTRAC PRES	KPA	276.099	277.853	0.261	2.702	5.00	-5.00	Yes	
PRPS-2SE-TT-249	(PRPS-2SE-TT-249) DEA EXTRAC TEMP	C	255.042	253.856	0.284	1.185	5.00	-5.00	Yes	
PRPS-2SE-ZIT-247A	(PRPS-2SE-ZIT-247A) DEA BSTM STOP V	%	100.015	99.659	0.773	0.356	0.30	-0.30	Yes	
PRPS-2SJ-LCV-201	(PRPS-2SJ-LCV-201) DEA LVL CV	%	49.629	51.614	0.158	-0.609	0.00	0.00	Yes	
PRPS-2SJ-LIKPV-201	(PRPS-2SJ-LIKPV-201) DA LVL PROCESS	cm	270.297	269.974	0.481	0.734	2.00	-2.00	Yes	
PRPS-2SJ-LT-201-A	(PRPS-2SJ-LT-201-A) DEA LVL A	CM	273.730	273.824	0.049	-0.094	2.00	-2.00	Yes	
PRPS-2SJ-LT-201-B	(PRPS-2SJ-LT-201-B) DEA LVL B	CM	268.896	269.366	0.299	-0.470	2.00	-2.00	Yes	
PRPS-2SJ-LT-201-C	(PRPS-2SJ-LT-201-C) DEA LVL C	CM	269.171	269.564	0.281	-0.393	2.00	-2.00	Yes	
PRPS-2SJ-ZT-034	(PRPS-2SJ-ZT-034) LOW LOAD FW CV PO	%	4.832	2.2129	4.048	2.619	0.00	0.00	Yes	
PRPS-2SJ-ZT-201	(PRPS-2SJ-ZT-201) DEA LVL CV POSN	%	49.313	51.178	0.158	-0.616	2.00	-2.00	Yes	
PRPS-2SJ-PT-212	(PRPS-2SJ-PT-212) DEA STORAGE TANK	KPA	184.161	184.299	0.534	5.451	5.00	-5.00	Yes	

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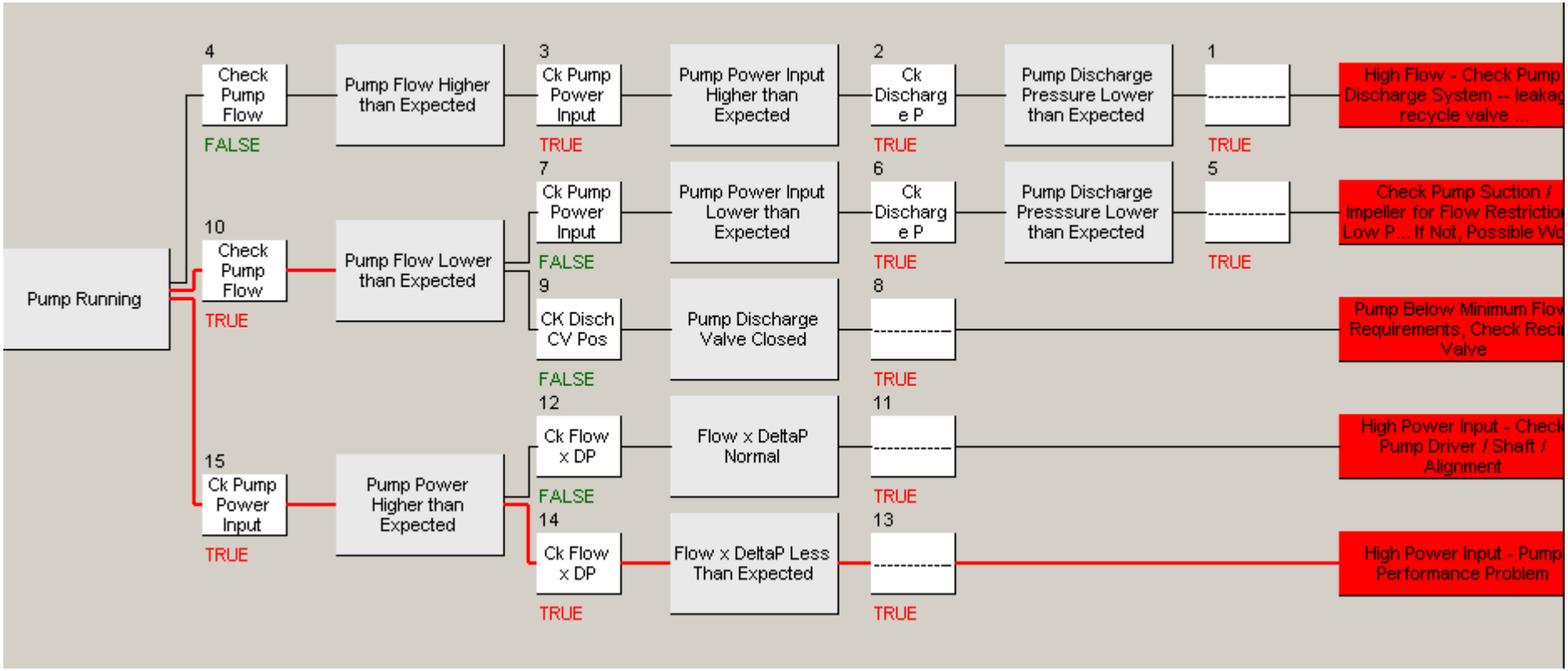
Rules Engine



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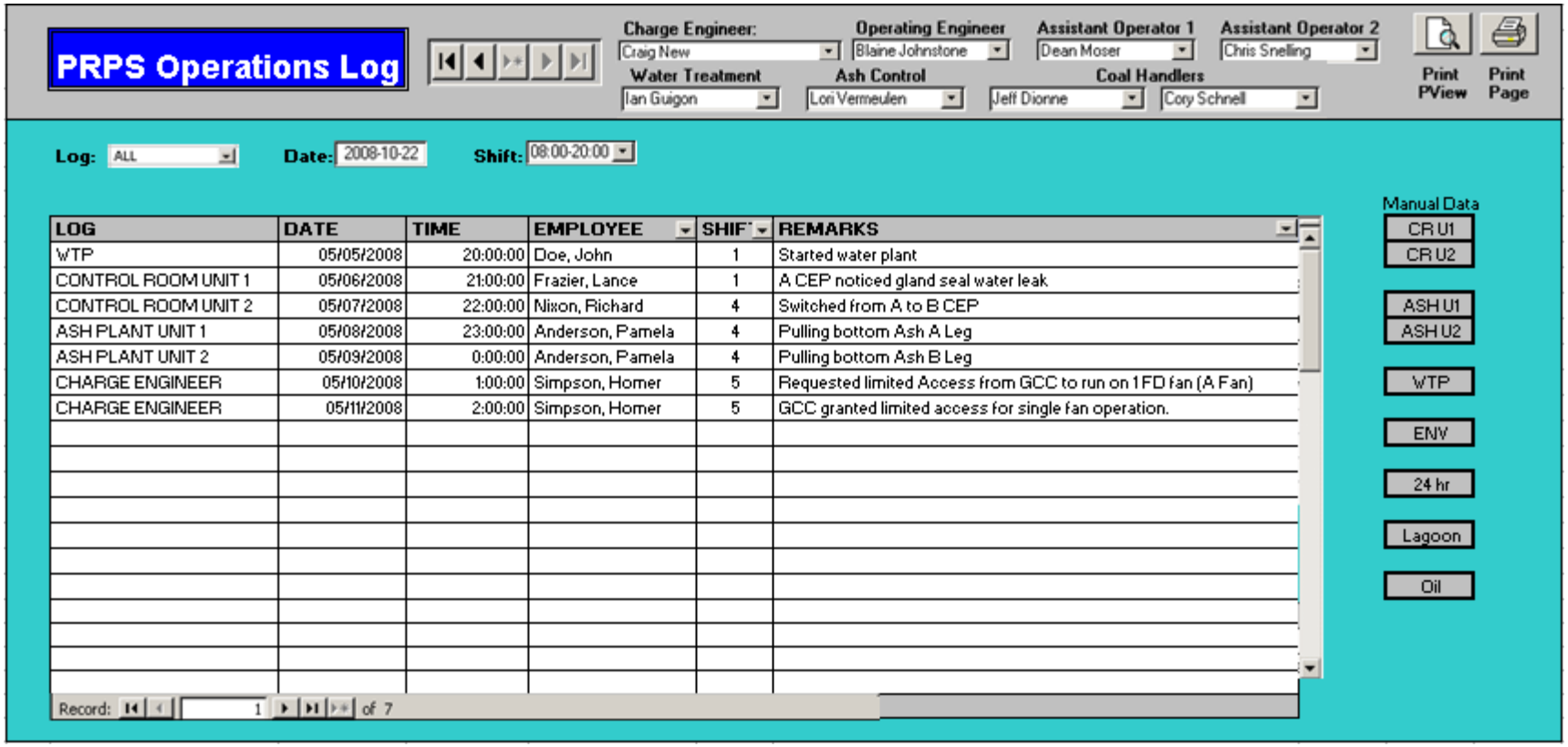
Operator Log System



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Fleet Management Display

Alarm Management

New Response | New Response to Response

Plant	Unit	Alarm Source	Alarm Description	Target	Actual	Heat Rate Loss (kJ/kWh)	Capacity Loss (MWh)	Economic Loss ($/hr)	# Days in Alarm	Date Alarm Generated	Assessment	Alarm Bucket	Links to Diagnostic Tree
PRPS	PR2	PMAX	FWH #4 TTD Degradation	-1.4 C	6.0 C	35	-0.4	$ (189.34)	123	07/04/2008	Since TTD ↑ and TR ↓ , then PARTITION PLATE FAILURE. Need to inspect heater internals.	Maintenance w Unit Derate	#4 FWH Perf
PRPS	PR1	PMAX	HP Turbine Efficiency Degradation	88%	86%	49	-0.8	$ (30.10)	87	08/09/2008	Suspect increase packing leakage through N2 packing.	Maintenance w Unit Outage	HP Turb Perf
SHPS	SH1	PMAX	Condenser Cleanliness Degradation	85%	68%	108	-1.1	$ (99.00)	45	09/20/2008	Condenser tubes have macro-fouled. Need to schedule tube cleaning.	Maintenance w Unit Outage	Cond Perf
PRPS	PR1	Manual	Transmission line limitation forcing unit derate	315 MW	305 MW		-10		204	04/14/2008		Operational Task	
PRPS	PR2	PdP	A FD Fan motor bearing temp increase	75.0 C	88.0 C	4560	-150	$ (6,750.00)	3	11/01/2008	Sleeve bearing showing early signs of failure. Risk of 50% derate.	Maintenance w Unit Derate	FD Fan Cond
▼ 04/01/2008			John Duff	Requested operator to go check bearing.									
► 2008-04-01			Joe Blow	Checked bearing on April 1 @ 13:00, and is running hot.									
▼ 04/23/2008			John Doe	Took oil sample from bearing and sent for analysis									
► 2008-04-01			Mike Boyette	Oil sample results attached									
► 2008-04-01			John Doe	Discussion on oil sample results.									
PRPS	PR2	PdP	B BPF motor bearing thermocouple out of calibration	75.0 C	88.0 C	0	0	$ -	3	11/01/2008	Sleeve bearing showing early signs of failure. Risk of 50% derate.	Instrument Fault	BFP Cond

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Findings: 2B BFP capacity deterioration

PdP

PMAX

UNIT	pr2	PROCESSING RATE	300 seconds
MODEL	2bBFPpm	VALIDATION PARAMETER	0.90
2B BFP W MOTOR		TOTAL POINTS	28
CATEGORY	OK	CUTOFF POINT	PRPS-2SJ-JT-030B
MODEL HEALTH	0.953	(PRPS-2SJ-JT-030B) BFP 2B POWER	
MODEL STATUS	ABNORMAL	CUTOFF VALUE	3214.47
ABNORMAL POINTS	12	HIGH CutOff 10000. LOW CutOff 1500.	
		ALARMS X out of Y: X = 10 Y = 12	
		ALARM ON	Residual

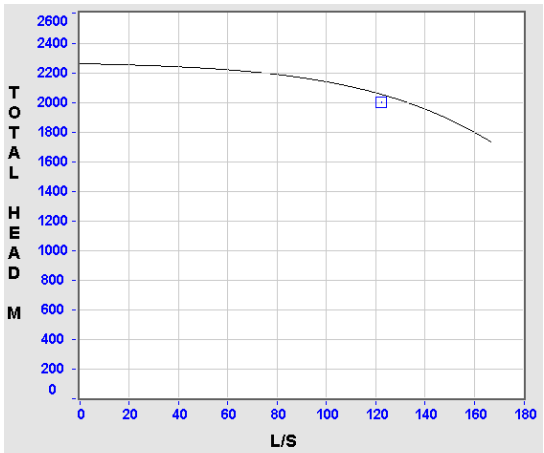
GRAPHIC

GROUP PLOTS (RADIAL, LINEAR) 4 Point

PdP ARCHITECT | ASSESSMENT | ASSIGN CATEGORY | Alarm Acknowledge | Page 1 of 2

Status Legend: NORMAL ABNORMAL INACTIVE

INPUT POINT	DESCRIPTION	UNITS	ACTUAL	PREDICTD	VARIANCE	RESIDUAL	RESID HI	RESID LO	SIG ACT	TREND
PRPS-2SJ-JT-030B	(PRPS-2SJ-JT-030B) BFP 2B POWER	KW	3214.465	3153.04	0.421	82.172	50.00	-50.00	Yes	
PRPS-2SJ-IT-030B	(PRPS-2SJ-IT-030B) BFP 2B CURRENT	Amps	498.514	487.485	0.408	11.029	10.00	-10.00	Yes	
PRPS-2SJ-FCV-033B	(PRPS-2SJ-FCV-033B) MAIN FW CV 2B	%	68.182	67.108	0.215	2.354	0.00	0.00	Yes	
PRPS-2SJ-ZT-033B	(PRPS-2SJ-ZT-033B) MAIN FW CV 2B PO	%	69.125	65.966	0.363	3.972	3.00	-3.00	Yes	
PRPS-2SJ-DVF-220B-1	(PRPS-2SJ-DVF-220B-1) COMPENSATED B	kg/s	115.544	118.840	0.118	-1.626	3.00	-3.00	Yes	
PRPS-2SJ-DVF-220B-2	(PRPS-2SJ-DVF-220B-2) COMPENSATED B	kg/s	115.284	120.513	0.241	-3.162	3.00	-3.00	Yes	
PRPS-2SJ-FT-220B-1	(PRPS-2SJ-FT-220B-1) BFP 2B SUCTION	cmWC	336.731	360.285	0.222	-12.701	0.00	0.00	Yes	
PRPS-2SJ-FT-220B-2	(PRPS-2SJ-FT-220B-2) BFP 2B SUCTION	cmWC	335.220	370.038	0.415	-23.811	0.00	0.00	Yes	
PRPS-2SJ-PT-032B	(PRPS-2SJ-PT-032B) BFP 2B DISCHARGE	KPAG	18928.90	19324.0	1.089	-551.471	300.00	-300.00	Yes	
PRPS-2SJ-PT-221B	(PRPS-2SJ-PT-221B) BFP 2B SUCTION P	KPAG	516.444	505.427	0.338	10.163	10.00	-10.00	Yes	
PRPS-2SJ-TT-583B	(PRPS-2SJ-TT-583B) BFP 2B PUMP THRS	C	44.376	45.279	0.616	-0.934	3.00	-5.00	Yes	
PRPS-2SJ-TT-578B	(PRPS-2SJ-TT-578B) BFP 2B PUMP DE B	C	58.673	68.666	8.935	-9.993	3.00	-5.00	Yes	
PRPS-2SJ-TT-579B	(PRPS-2SJ-TT-579B) BFP 2B PUMP NDE	C	52.066	52.082	0.102	-0.138	3.00	-5.00	Yes	
PRPS-2SJ-TT-580B	(PRPS-2SJ-TT-580B) BFP 2B OIL CLR O	C	37.646	39.870	0.789	-2.269	2.00	-3.00	Yes	
PRPS-2SL-PT-574B-1	(PRPS-2SL-PT-574B-1) BFP 2B LUBE OI	kPa	111.069	110.177	0.225	0.911	2.00	-2.00	Yes	
PRPS-2SL-PT-574B-2	(PRPS-2SL-PT-574B-2) BFP 2B LUBE OI	kPa	112.099	111.811	0.074	0.307	2.00	-2.00	Yes	
PRPS-2SJ-TT-030B1	(PRPS-2SJ-TT-030B1) BFP 2B MTR DE B	C	58.505	58.264	0.200	0.242	3.00	-5.00	Yes	
PRPS-2SJ-TT-030B2	(PRPS-2SJ-TT-030B2) BFP 2B MTR NDE	C	54.736	55.153	0.370	-0.493	3.00	-5.00	Yes	
PRPS-2SJ-TT-030B3	(PRPS-2SJ-TT-030B3) BFP 2B MTR WDG	C	95.035	88.379	1.160	6.687	3.00	-5.00	Yes	
PRPS-2KO-PDCV-316B	(PRPS-2KO-PDCV-316B) BFP 2B GSW CV	%	60.000	54.291	2.474	5.709	0.00	0.00	Yes	



BOILER FEED PUMP B

IN SERVICE?	YES
SUCT PRESS (KPAA)	607.8
DISCH PRESS (KPAA)	19020.3
FLOW (KG/S)	115.2
FLOW (L/S)	122.8
POWER (KW)	3216.4

	ACTUAL	EXPECTED	HR EFF	MW EFF
ENTHALPY RISE (KJ/KG)	27.9	23.9	-2.8	0.1

	ACTUAL	EXPECTED	Δ	ALARM LIMIT
HEAD	2001.8	2037.2	-52.1	50.0J
EFF (%)	70.3	81.4	-11.0	5.0J

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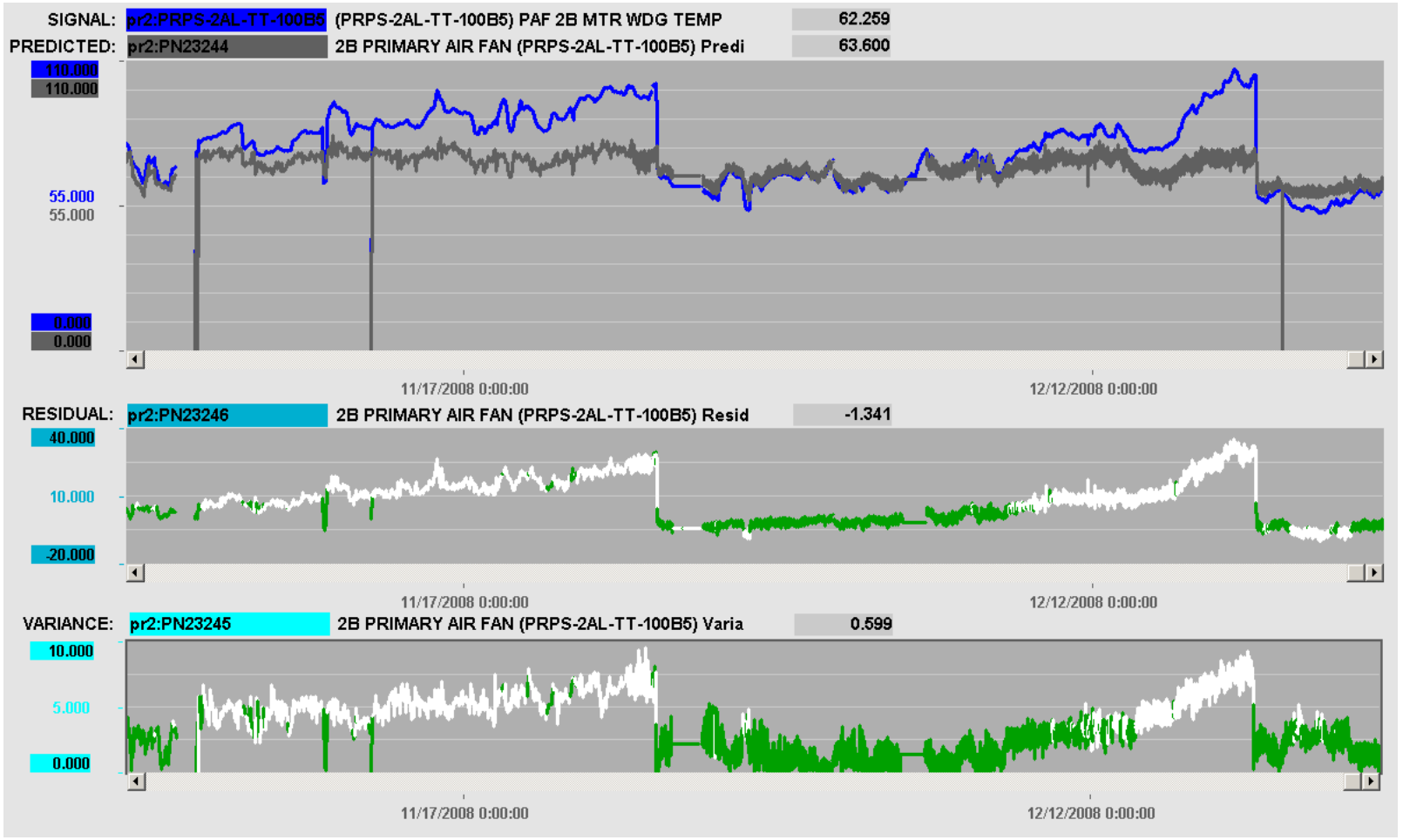
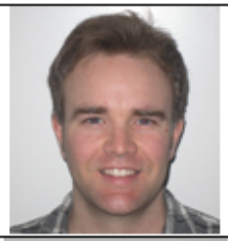
Findings: 2B PA Fan motor issue



Program Scorecard update

- ☑ Automate engineering calculations
- ☑ Data Validation & replacement
- ☑ Automate anomaly detection
- ☑ What if modeling (turbine & boiler)
- ☑ System Maintainability
- ☑ Instrumentation gap remediation
- ☑ Pilot new tools at one site to prove Real Time concepts
- ☑ Production Performance Group provide on-going program leadership, maintenance, and continuous improvement
- ☐ Standardize & Network Operator logs system
- ☐ Common dashboard for KPIs visible to entire company
- ☐ Consolidate tools sets where practical
- ☐ Educate employees about the bottom-line impacts they can have.

Anticipated Effects on Group

	**W.P. (Perry) Hill** Supervisor 566-3339 phill@saskpower.com Plant Contact: Shand		**S.W. (Scott) McLeod** Performance Specialist II 566-2243 smcleod@saskpower.com Plant Contact: Poplar River, Queen Elizabeth
	**D.E. (Dan) Hemingway** Performance Specialist II 566-2868 dhemingway@saskpower.com Plant Contact: (reassigned to the SPOAD project)		**A. (Alyssa) McLaughlin** Performance Engineer I 566-3171 amclaughlin@saskpower.com Plant Contact: Boundary Dam B & C Plant
	**D. (David) Mah** Performance Specialist II 566-3338 dmah@saskpower.com Plant Contact: None (Full-time results support)		**J. (Jason) Wasilieff** Performance Engineer I 566-3589 jwasilieff@saskpower.com Plant Contact: Boundary Dam A Plant
	**D.J. (Dwayne) Selensky** Chemical Performance Specialist II 566-2282 dselensky@saskpower.com Plant Contact: All (Chemistry issues)		**A. (Arlen) Reed** Performance Specialist I 566-2998 areed@saskpower.com Plant Contact: All (Chemistry issues)

- Remote Monitoring (faster)
- Field testing (less)
- Statistical Reporting (auto)
- Site meetings with plants
- Monitoring tools maintenance (model tuning)

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Project Next Steps

- Evaluate Fleet Management Display
- Evaluate Operator logs system
- Evaluate Web-client
- Evaluate server (likely migrate to dedicated server)
- Boiler What-if modeling built into PMAX
- Completion of punchlist items by Scientech
- Finalize overall system configuration
- Complete overall system evaluation
- Contract Scientech to configure other SaskPower plants

Questions???

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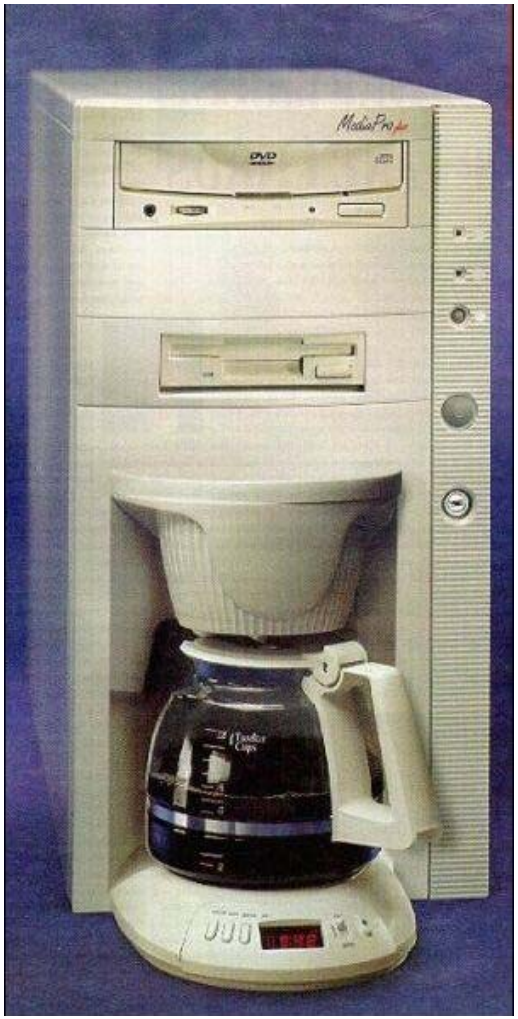
Break!



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