SIEMENS

GWC
SEP 02 2008

August 26, 2008

Mr. George Cross
INTERMOUNTAIN POWER SERVICE CORP
850 W BRUSH WELLMAN RD
DELTA, UT 84624-9546

RE: Consolidation and name change of Siemens Energy entities in the U.S.

Dear Mr. Cross,

As you may know, effective January 1 of this year, Siemens initiated a worldwide re-organization effort with the clear goal to further strengthen its customer focus by providing an even more efficient organizational structure to foster less complexity and faster responsiveness to our customers' needs. As a result, we are consolidating the Power Generation and Power Transmission and Distribution businesses and portions of the Energy & Automation business into a single group, known as the "Siemens Energy Sector." As part of this initiative, Siemens is merging some of its existing operating companies into a single corporation.

Siemens Power Transmission and Distribution, Inc. (SPTD), Siemens Power Generation, Inc. (SPGI), Siemens Industrial Turbomachinery, Inc. (SITI), Advanced Burner Technologies Corp. (ABT) and S/D Engineers, Inc. (S/D) are all Siemens companies. Please be advised that effective October 1, 2008 ("Effective Date"), the above mentioned legal entities will merge, and SPGI will be the surviving corporation. Also on the same date, the SPGI company name will be changed to Siemens Energy, Inc. to better reflect the comprehensive scope of our Energy business.

You can continue to count on us to provide the same high level of quality and service to which you are accustomed from Siemens Energy. Notice is also being provided to your Accounts Payable and other relevant departments in order to provide and request updated documentation necessary for our records.

If you have any questions or concerns, please do not hesitate to contact me directly. As always, we at Siemens stand ready to support you and your business needs.

Thank you,

Joel Vatsky
President

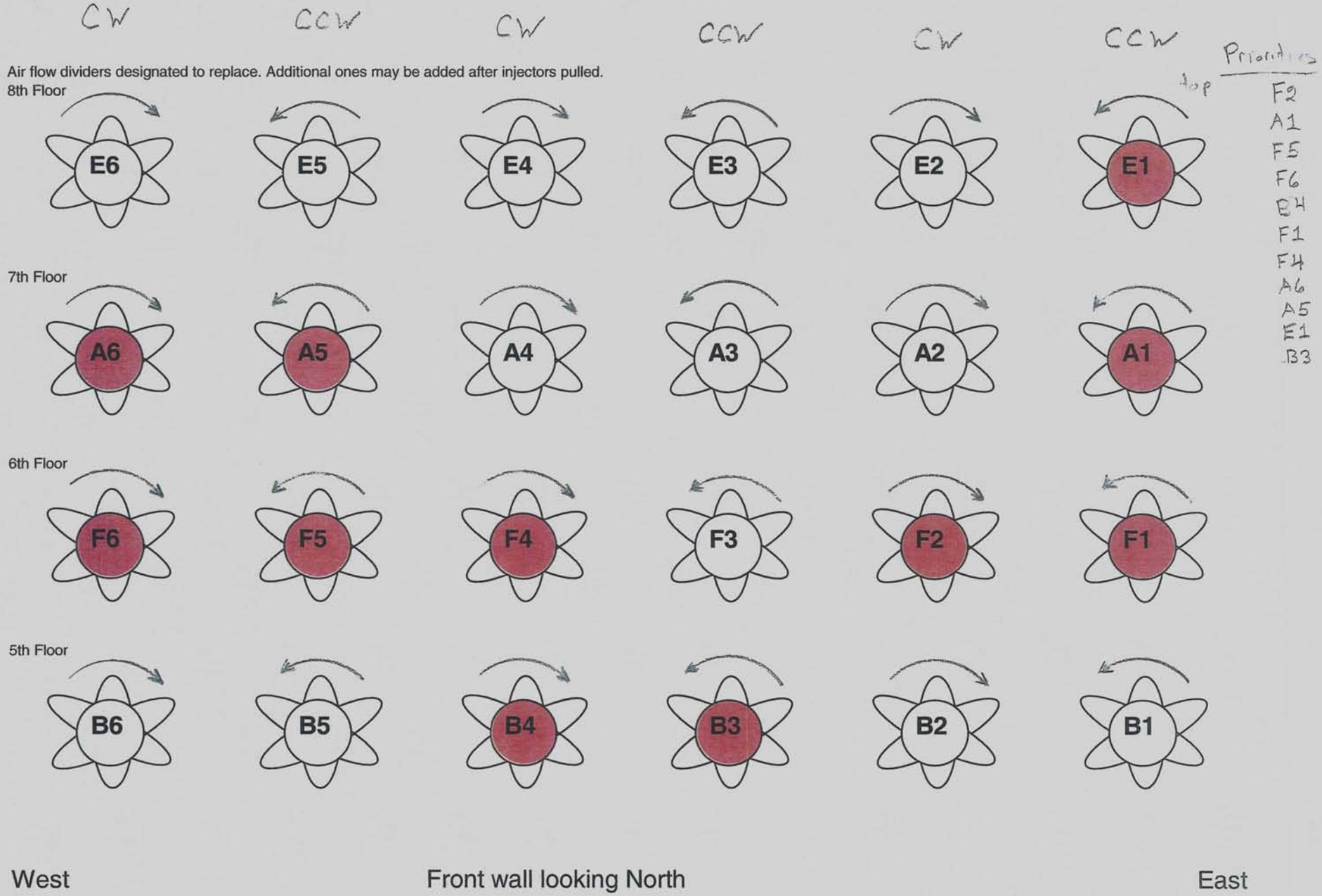
Siemens Power Generation, Inc.
Environmental Systems & Services

271 Route 202/206
PO Box 410
Pluckemin, NJ 07978

Tel: (908) 470-0470
Fax: (908) 470-0479

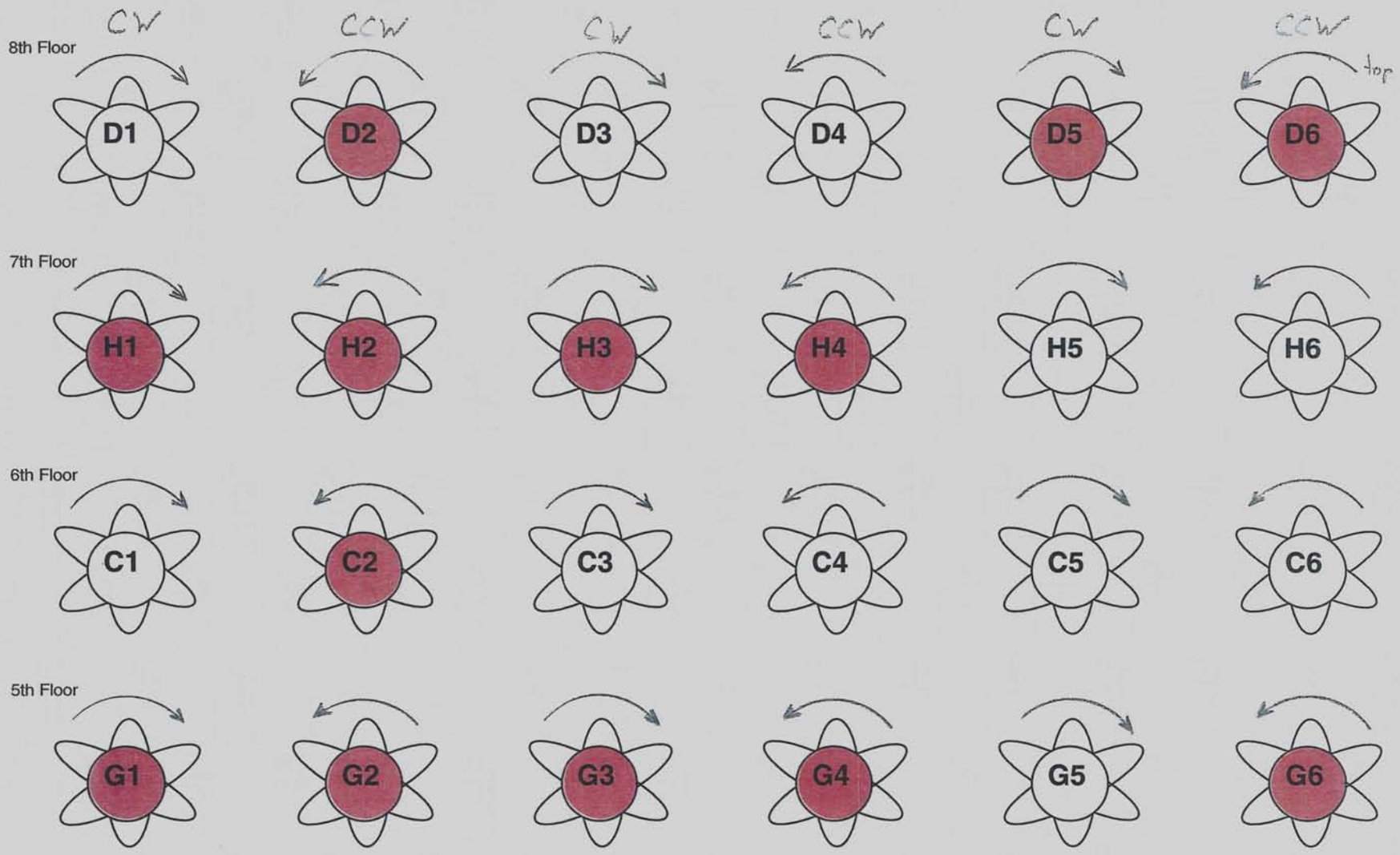
IP7021453

Air flow dividers designated to replace. Additional ones may be added after injectors pulled.



C:\GC\ABT burner\2008 outage work\ABTcasing repair.xls

IP7021454



Priorities

G2
D5
G1
D2
D6
C2
G4
G6
H2
H4
G3
H1
H2

East

Rear Wall Looking South

West

C:\GC\ABT burner\2008 outage work\ABTcasing repair.xls

IP7021455

priority		Front Wall	Back Wall
	F2	F2	G2
	G2	A1	D5
	A1	F5	G1
	D5	F6	D2
	G1	B4	D6
	D2	F1	C2
	D6	F4	G4
	F5	A6	G6
	F6	A5	H3
	B4	E1	H4
	F1	B3	G3
	F4		H1
	C2		H2
	A6		
	G4		
	G6		
	H3		
	H4		
	A5		
	E1		
	G3		
	B3		
	H1		
	H2		

old burners to use if pals don't arrive
D3, D5, D6, H2, H3, G3 (have PI 2000 tip 33", 40" total)

TOPS 35500

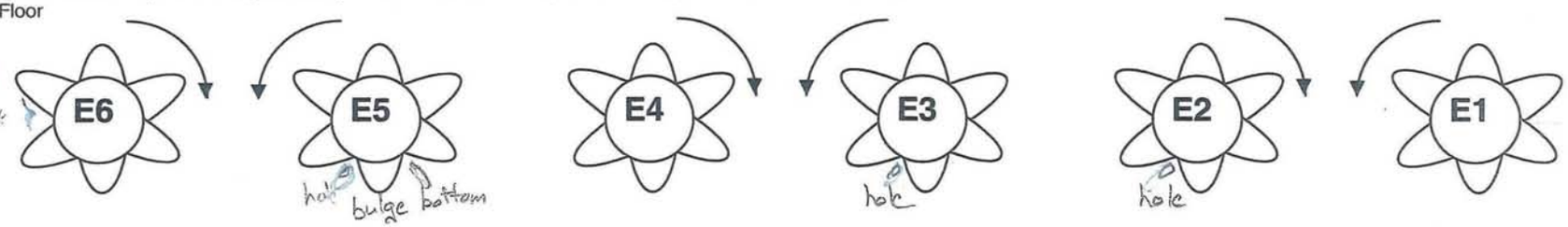
IP7021456

Tips removed and replaced designated in yellow, all others were repaired with segment wear liners on all 6 pedals.

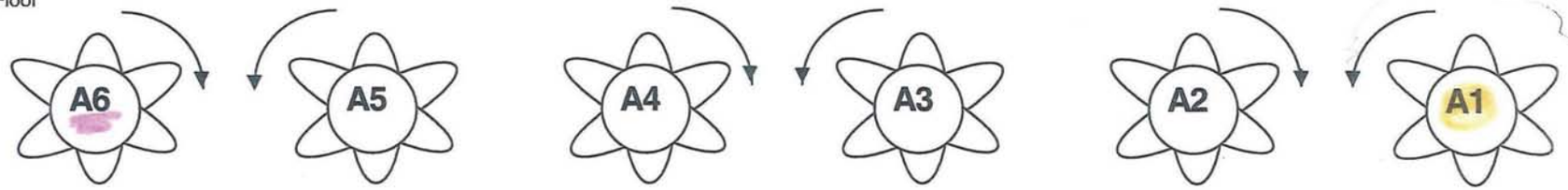
8th Floor

9-19-07

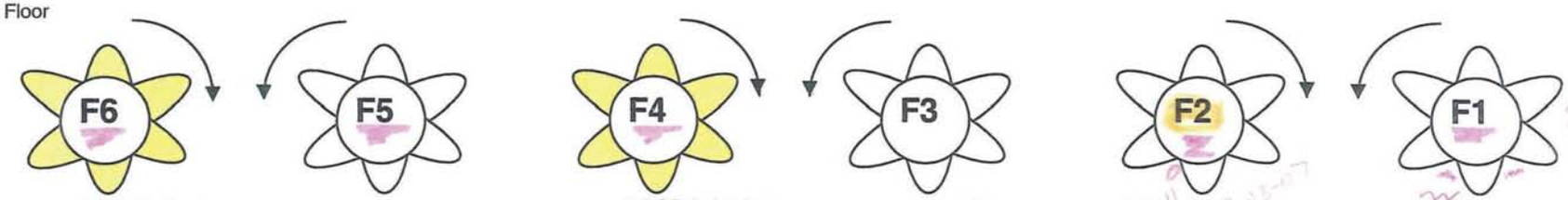
1-14-08 Check



7th Floor



6th Floor



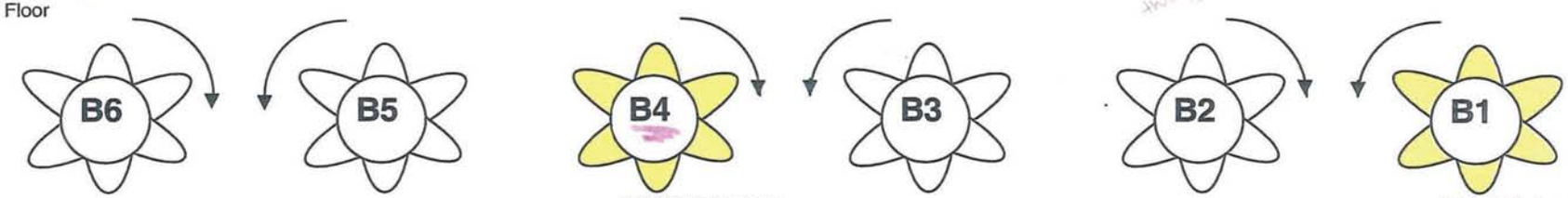
33" SS tip laydown
40" total

33" SS tip laydown
40" total

new nozzle

Small hole through 8-13-07

5th Floor



33" SS tip laydown
40" total

33" SS tip laydown
40" total

West

Front wall looking North (Tips to have air sleeve moved back.) Tip to be replaced

East

15 [illegible]

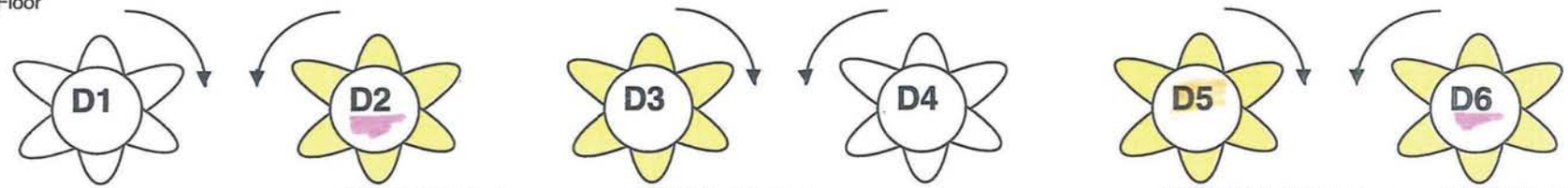
33 [illegible] ART [illegible]

C:\GC\ ART [illegible] ART tip wear [illegible]

IP7021457

Out of round 11-27-07

8th Floor



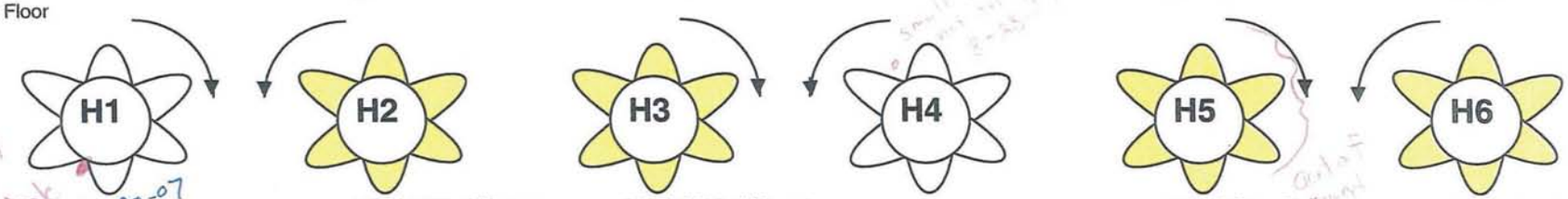
33" SS tip laydown
40" total

33" PI 2000 old burner
40" total

33" PI 2000 old burner
40" total

33" PI 2000 old burner
40" total

7th Floor



8-28-07 hole 12-20-07

33" PI 2000 old burner
40" total

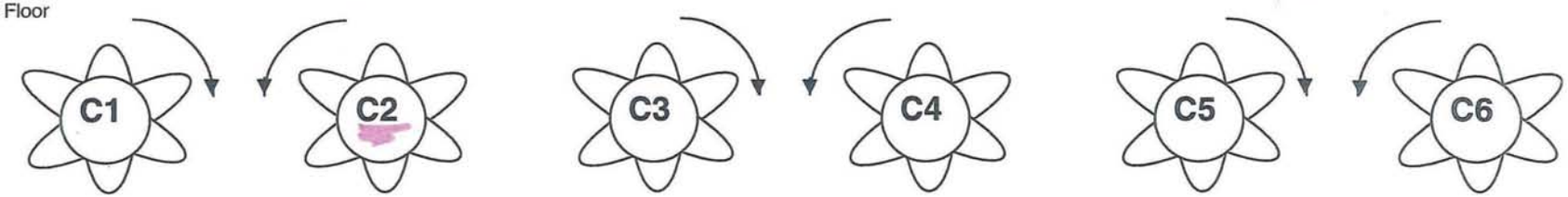
33" PI 2000 old burner
40" total

42" SS from PI

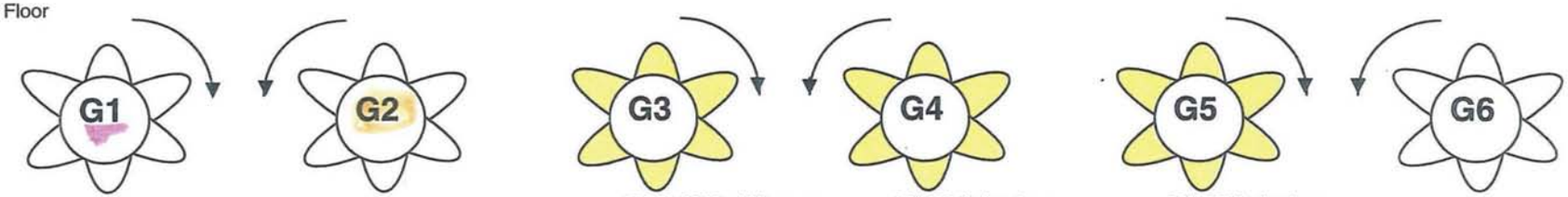
Out of round 8-28-07

40" SS tip laydown

6th Floor



5th Floor



33" PI 2000 old burner
40" total

33" SS tip laydown
40" total

33" SS tip laydown
40" total

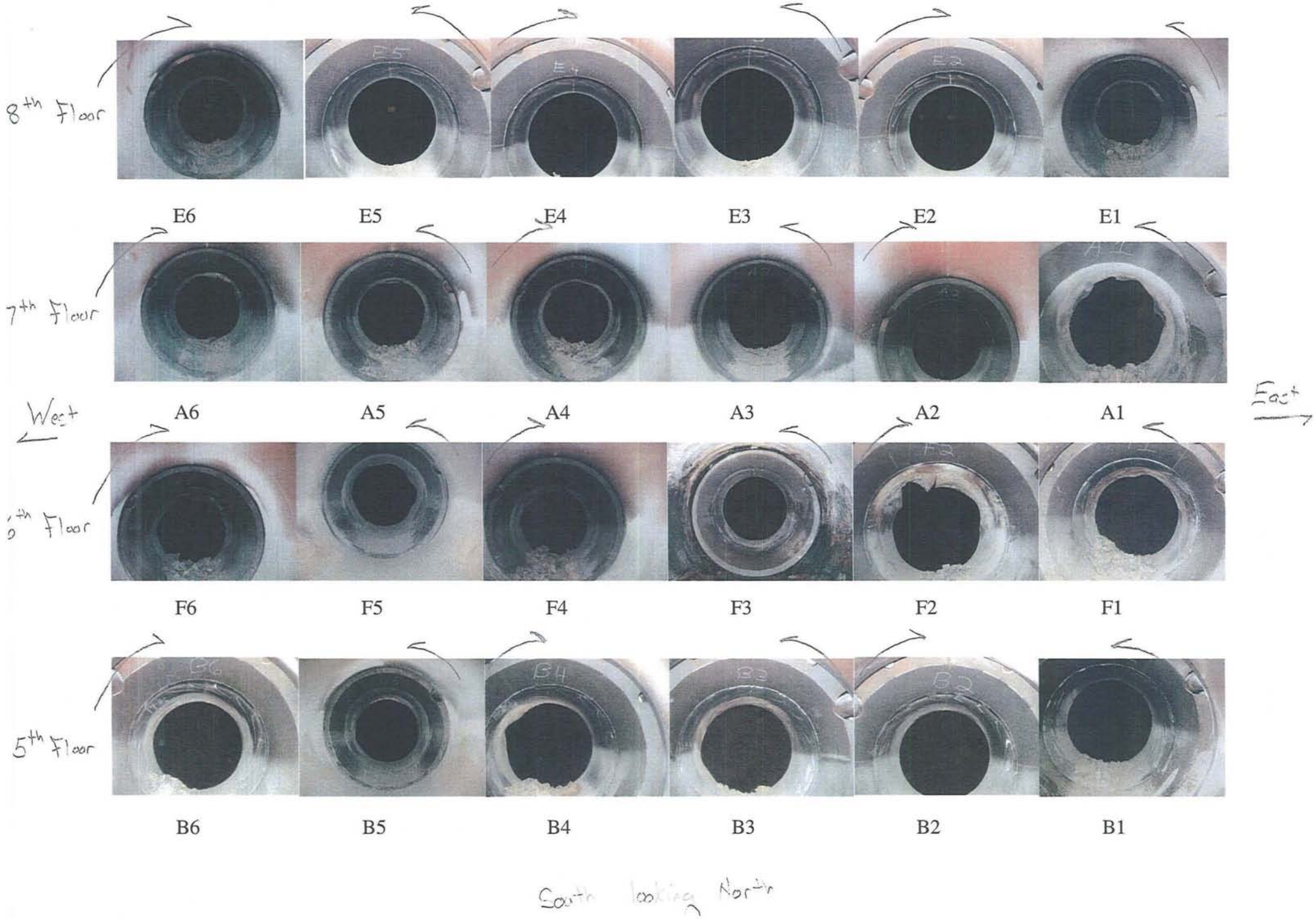
East

Rear Wall Looking South (Tips to have air sleeve moved back) Tip to be replaced

West

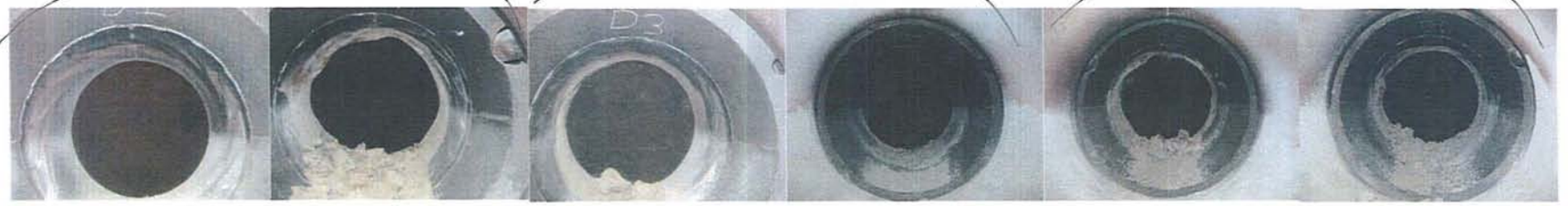
5's - 1 F2
4's - 3 D5, G2, A1
3's - 10

IP7021458


8th Floor
E6
E5
E4
E3
E2
E1
7th Floor
A6
A5
A4
A3
A2
A1
West
East
6th Floor
F6
F5
F4
F3
F2
F1
5th Floor
B6
B5
B4
B3
B2
B1
South looking North

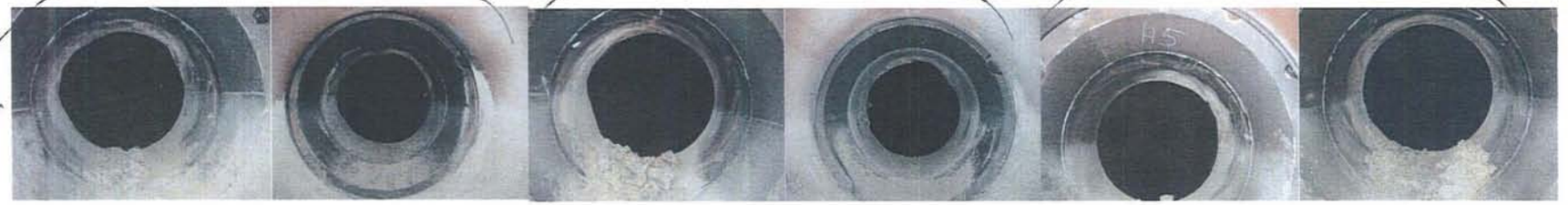
IP70214459

8th Floor



D1 D2 D3 D4 D5 D6

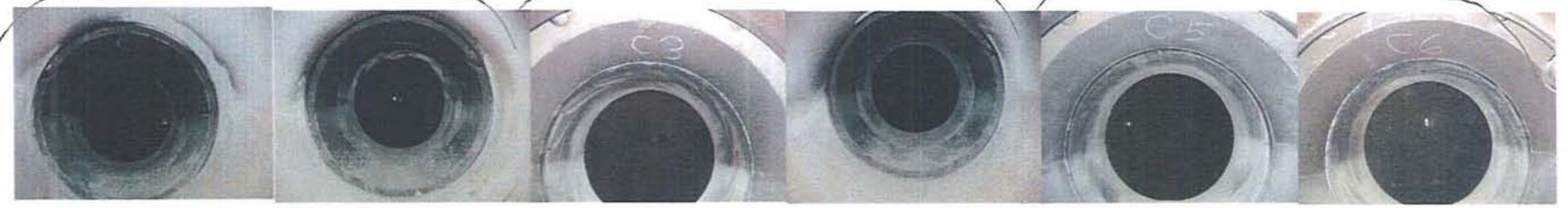
7th Floor



East West

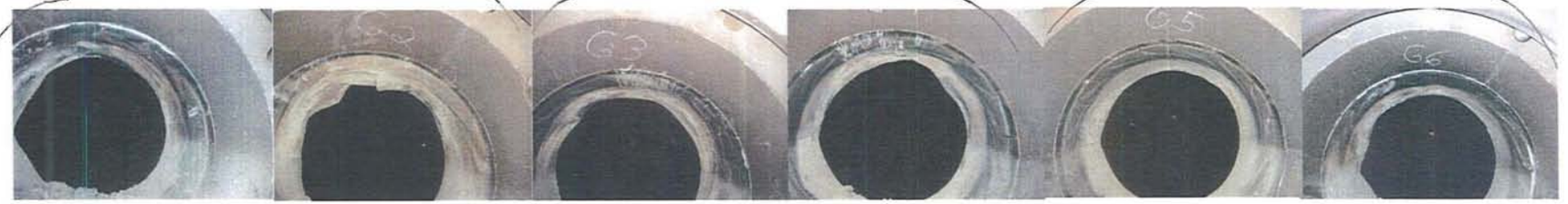
H1 H2 H3 H4 H5 H6

6th Floor



C1 C2 C3 C4 C5 C6

5th Floor



G1 G2 G3 G4 G5 G6

North looking South

IP70021460

burner casing (1) Good (5) bad

* A1	4	B1	1	C1	1	D1	1
A2	1	B2	1	C2	3	D2	3
A3	1	B3	2	C3	1	D3	2
A4	2	B4	3	C4	1	D4	1
A5	2.5	B5	2	C5	1	* D5	4
A6	3	B6	1	C6	1	D6	3
	13.5		10		8		14

E1	2	F1	3	G1	3	H1	2
E2	1	** F2	5	* G2	4	H2	2
E3	1	F3	1	G3	2	H3	2-3
E4	1	F4	3	G4	2-3	H4	2-3
E5	1	F5	3	G5	2	H5	1
E6	2	F6	3	G6	2-3	H6	2
	8		18		15		12

20 bolts top and bottom equally spaced

top o o o o

18 with 1s

5's - 1
4's - 3
3's - 10
2.5's - 5
2's - 11
1's - 18

worst F
G
D
A
H
B
best C,E

Status

Are bends/angles laminar

What size is thermowell. Any drawings.

Is there a way to cool where temperature measurements are. Old burners had no way to cool

Burner casing - see photo repair instruction and material quote or should we go third party.

Any other work on burner casing anticipated

Check on threat parts

IP7021461

Parts $877,500 - Siemens Injector & Flat back elbows

$57,240 - Power & Industrial Air Flow Divider Cylinder

Labor $250,000 - AP&F

Other $525 shipping tip
11,128.20 tip analysis by Thielsch

$250,000 labor $579,000
$877,500 parts
$525 shipping
11,128.20 Tip Analysis

TOPS 35500

PURCHASING DIRECT REQUISITION LINE ENTRY PU0326

Requisition No: 243799 Line: 1 of 1

1 Send Req For Approval: Y

2 Blanket Order Number: Blnk Ln No:

3 Item Description: Air Flow Divider Cylinder, 33-3/4" OD x 33" ID x 28" long, with one beveled end, fabricated from 253MA, replacement air sleeve on damaged ABT burners, Power and Industrial Q08-0050 Rev 1 option 2

4 Account Number: 00-2SGX-402 MATERIAL, ADN & BTRM

5 Buyer Number: BUYER 'X' WILL BE ASSIGNED

6 Unit of Measure: EA EACH

7 Quantity Required: 24

8 Estimated Unit Cost: 2,385.00000

9 Date Required: 03/28/08

10 Purchase Priority: 4 ROUTINE EMB: M

12 Recommended Vendor: Name: POWER&INDUSTRIAL

13 Deliver To: Contact Garry Christensen

14 General Notes: Part to fix existing burner, piece will be cut, rolled and welded and beveled. Contact Garry

WHICH ONE (<RTN>=CONTINUE>> ?

D70371 13:28 29 JAN 2008 Intermountain Power Service Corp. USER.LIVE.DATA

IP7021463

POWER & INDUSTRIAL SERVICES CORPORATION
95 Washington Street, P.O. Box 211, Donora, PA 15033

724-379-4477
800-676-7116
Fax 724-379-4408
www.piburners.com

QUOTATION **January 28, 2008** **P&I Q08-0050 Rev 1**

Customer: Intermountain Power Service Corp.
Plant: Intermountain Power Project
Code: IPPIPP

Phone: (435) 864-6486
Fax: (435) 864-6670
E-mail: garry-c@ipsc.com

Attention: Garry Christensen

Subject: Air Flow Divider Cylinder.

Power & Industrial Services is pleased to present the following quotation:

Item	Description	P&I P/N	Quantity	Unit Price
OPT 1	**Air Flow Divider Cylinder, 33-3/4" OD x 33" ID x 28" Long, with One Beveled End, Cast of PI-2000.** Cylinder will be cast at 34" OD and machined to 33-3/4" OD as there is not an existing mold to cast 33-3/4" OD.	TBD	48	$3,490.00
OPT 2	**Air Flow Divider Cylinder, 33-3/4" OD x 33" ID x 28" Long, with One Beveled End, Fabricated from 253MA.**	TBD	48	$2,385.00

Delivery: 7 -9 Weeks ARO
FOB: SPFC - Shipping Point, Freight Collect
Terms: Net 30 Days

NOTES:

Prices are valid for an order based on the exact quantities as shown. Due to the current volatility of raw material costs, prices are subject to change at the time of order acceptance. After order acceptance prices will be firm through delivery. We regreet any inconvenience this may create for you.

Please call if you have any questions or need additional information. Thank you for your interest in Power & Industrial Services.

Sincerely Yours,

Lawrence G. Shekell

Lawrence G. Shekell

LS / rcd

IP7021464

POWER & INDUSTRIAL SERVICES CORPORATION
95 Washington Street, P.O. Box 211, Donora, PA 15033

724-379-4477
800-676-7116
Fax 724-379-4408
www.piburners.com

QUOTATION **January 25, 2008** **P&I Q08-0050**

Customer: Intermountain Power Service Corp.
Plant: Intermountain Power Project
Code: IPPIPP

Phone: (435) 864-6486
Fax: (435) 864-6670
E-mail: garry-c@ipsc.com

Attention: Garry Christensen

Subject: Air Flow Divider Cylinder.

Power & Industrial Services is pleased to present the following quotation:

Item	Description	P&I P/N	Quantity	Unit Price
1	**Air Flow Divider Cylinder, 33-3/4" OD x 33" ID x 28" Long, with One Beveled End, Cast of PI-2000.** Cylinder will be cast at 34" OD and machined to 33-3/4" OD as there is not an existing mold to cast 33-3/4" OD.	TBD	48	$3,490.00

Delivery: 7 -9 Weeks ARO
FOB: SPFC - Shipping Point, Freight Collect
Terms: Net 30 Days

NOTES:

Prices are valid for an order based on the exact quantities as shown. Due to the current volatility of raw material costs, prices are subject to change at the time of order acceptance. After order acceptance prices will be firm through delivery. We regreet any inconvenience this may create for you.

Please call if you have any questions or need additional information. Thank you for your interest in Power & Industrial Services.

Sincerely Yours,

Lawrence G. Shekell

Lawrence G. Shekell

LS / rcd

IP7021465

POWER & INDUSTRIAL SERVICES CORPORATION
95 Washington Street, P.O. Box 211, Donora, PA 15033

724-379-4477
800-676-7116
Fax 724-379-4408
www.piburners.com

QUOTATION **January 25, 2008** **P&I Q08-0050**

Customer: Intermountain Power Service Corp.
Plant: Intermountain Power Project
Code: IPPIPP

Phone: (435) 864-6486
Fax: (435) 864-6670
E-mail: garry-c@ipsc.com

Attention: Garry Christensen

Subject: Air Flow Divider Cylinder.

Power & Industrial Services is pleased to present the following quotation:

Item	Description	P&I P/N	Quantity	Unit Price
1	**Air Flow Divider Cylinder, 33-3/4" OD x 33" ID x 28" Long, with One Beveled End, Cast of PI-2000.** Cylinder will be cast at 34" OD and machined to 33-3/4" OD as there is not an existing mold to cast 33-3/4" OD.	TBD	48	$3,490.00

Delivery: 7 -9 Weeks ARO
FOB: SPFC - Shipping Point, Freight Collect
Terms: Net 30 Days

NOTES:

Prices are valid for an order based on the exact quantities as shown. Due to the current volatility of raw material costs, prices are subject to change at the time of order acceptance. After order acceptance prices will be firm through delivery. We regreet any inconvenience this may create for you.

Please call if you have any questions or need additional information. Thank you for your interest in Power & Industrial Services.

Sincerely Yours,

Lawrence G. Shekell

Lawrence G. Shekell

LS / rcd

IP7021466

Air Flow divider 33 1/2" ? measure length OD ID
width
thickness

rods 6

how attached

SA 240

piece 28" length GA .250 RA 253 MA
HT - 830574 - 2B
2" stitch weld 18 welds RAPO T51397

OD 33 3/4" ID 33 1/4" mc 33 1/2 used 48" X 120" piece
℄

32 bolts .73" OD
in Fuel injector flange

3 pieces at throat in year 0

diameter 33 3/4" OD
33 1/4" ID

1/2" thick
28" length 33 1/2" CL

to be stitch welded
so don't need weld prepping end

IP7021467

INTERMOUNTAIN POWER SERVICE CORPORATION

Date: 28-Jan-08
Req./PA No: ????
P.O. No:
Vendor:
Terms:
FOB:
Ship Via:
Conf. To:

☐ REQUISITION FOR CAPITAL EQUIPMENT

☒ PURCHASE AUTHORIZATION FOR EXPENSE ITEMS

Purpose of Materials, Supplies or Services:

Purchase air flow divider cylinder for burner repair on Unit 2 burners Spring 2008 planned outage

put in electronic req # 243799

Suggested Vendor: Power & Industrial
95 Washington Street
PO Box 211 Donora, PA 15033

Account No. 00-2SGX-402
Work Order No. 06-03474
Project No. IGS07-02

Qty	Unit	Description Noun Adjective	Catalog #	Seller or Manufacturer	Unit Cost	Extension
24	ea	Air Flow Divider Cylinder, 33-3/4" OD x 33" ID			$2,385.00	$57,240.00
		x 28" long, with one beveled end, fabricated from				
		253MA.				
		TOTAL ESTIMATED COST				$57,240.00

Remarks: See attached quote. option 2, Unit price same for 24.

Delivery requested by [Date] 03-28-08 Originator Garry Christensen

Dept. Mgr/Supt. Date Station Manager Date Operating Agent Date

IP7021468

AP&F CONSTRUCTION
excellence in action

November 21, 2007

Garry Christensen
Intermountain Power Agency
850 West Brush Wellman Road
Delta, UT 84624

Garry,

We appreciate the opportunity to submit a proposal to replace 48 Burner Elbows and Burner Injectors as per bid documents. The estimated cost to perform this work will be $181,973.65.

We again want to thank you for giving us the opportunity to submit this proposal and as always, we will provide quality work, on time. If you have any questions or need additional information, please feel free to call.

Sincerely,

Ted Unsworth

APP&F Site Services Contract
45603

Following same conditions

1230 West 2600 South, Woods Cross, UT 84087
P 801.397.2763 **F** 801.397.1899
www.apfpower.com

From: Les Lovell
To: Garry Christensen
Date: 11/28/2007 10:00 AM
Subject: AP&F release: 08-45603-544

The Contract Release 08-45603-544, to AP&F, has been faxed, for Spring Outage Elbow & Burner injector work.

Les Lovell

INTERMOUNTAIN POWER SERVICE CORPORATION

November 28, 2007

Mr. Aram H. Benyamin
Operating Agent for the Intermountain Power Project
Los Angeles Department of Water and Power
111 North Hope Street
P.O. Box 51111, Room 1263
Los Angeles, CA 90051-0100

Requisition 234399 - Low NOx Burner Equipment

Dear Mr. Benyamin:

Attached for your review and approval is Requisition 234399 to provide Low NOx Burner equipment. This work will be source-directed to Siemens Power Generation per an agreement reached during a meeting with Siemens and IPSC on October 31, 2007.

This requisition has been reviewed and approved by IPSC's Management. Your approval to proceed is requested by Monday, December 3, 2007. Please fax your approval to Nancy Bennett at (435) 864-6678.

If you have any questions regarding this request, please contact Jerry Hintze, ext. 6460 or Nancy Bennett, ext. 6538.

Sincerely,

George W. Cross

George W. Cross
President and Chief Operations Officer

NB
Attachment

c: George W. Cross w/o Attachment
Wes Bloomfield w/o Attachment
Jerry Hintze w/o Attachment
~~Gary Christensen~~ w/o Attachment
File

850 West Brush Wellman Road Delta Utah 84624 Telephone [illegible]

INTERMOUNTAIN POWER SERVICE CORPORATION

☒ REQUISITION FOR CAPITAL EQUIPMENT

☐ PURCHASE AUTHORIZATION FOR EXPENSE ITEMS

Date: 07-Nov-07	
Req./PA No: 234399	
P.O. No:	08-64792
Vendor:	9119
Terms:	61
FOB:	
Ship Via:	
Conf. To:	

Purpose of Materials, Supplies or Services:

Purchase of fuel injectors, x-vanes, and flat back elbows for Unit 2 burner outage repairs Spring 2008.

Suggested Vendor: Siemens Power Generation
440 Alafaya Trail MC Q1-101
Orlando, FL 32826

Account No. 00-2SGX-402
Work Order No. 06-03474
Project No. IGS07-02

Qty	Unit	Description Noun Adjective	Catalog #	Seller or Manufacturer	Unit Cost	Extension
48	ea	Fuel Injectors			$12,864.58	$617,500.00
48	ea	x-vane			$1,354.17	$65,000.00
48	ea	flat back elbows			$4,062.50	$195,000.00
		TOTAL ESTIMATED COST				$877,500.00

Remarks: Repairs and material cost agreement from October 31, 2007 meeting with Siemens (Tom Cochran, Bob Allen, John Gallagher) and IPSC (George Cross, Dennis Killian, Jerry Hintze, Garry Christensen) at IPSC.

Delivery requested by [Date] 03-28-08 Originator Garry Christensen

Dept. Mgr/Supt. Date Station Manager Date Operating Agent Date

IP7021472

IPSC CAPITAL BUDGET 2007-2008
CAPITAL PROJECTS
($1,000's)

				2007-08							Justification		
Project #	Page #	Title	2006-07	Eng. Labor	IPSC Labor	Contractor	Material	Total	2008-09	Project Total	Basis	B/C Ratio	Rate of Return
IGS03-06*	39	Modicon Upgrade	240	40	60	0	280	380	380	1,215**	Obsolescence		
IGS04-02*	41	Concrete Water Lines Repair and Protection	2,450	15	5	1,500	1,700	3,220	0	11,730**	Economic	5.27	31%
IGS05-06*	45	BFPT Controls Upgrade	760	10	0	670	0	680	0	1,480**	Economic	3.63	28%
IGS05-08*	48	Replace Obsolete Vibration Monitoring Equipment	200	3	0	197	0	200	200	600*	Obsolescence		
IGS06-06	50	Auxiliary Cooling for Step-Up Transformers	25	5	0	10	10	25	0	50	Economic	20.45	152%
IGS07-01	4	Miscellaneous Capital Projects	0	9	17	0	41	67	0	67	See List		
IGS07-02	[redacted]	[redacted]	0	2	0	[redacted]			0	[redacted]	Obsolescence		
IGS07-03	54	Sludge Conditioning Modifications	0	15	5	800	1,100	1,920	0	1,920	Obsolescence		
IGS07-04	56	PLC Upgrade to DCS I/O	0	20	100	1,810	20	1,950	1,800	3,750	Obsolescence		
IGS07-05	58	Stack Mercury Analyzer	0	15	10	1,500	0	1,525	0	1,525	Regulatory		
IGS07-06	60	Cooling Tower Fan Stack Repair	0	5	0	750	0	755	0	755	Economic	2.43	19%
IGS07-07	62	External Horizontal Chimney Repair	0	1	0	599	0	600	0	600	Regulatory		
IGS07-08	64	Wastewater Line Replacement	0	10	0	84	91	185	0	185	Economic	8.70	63%
IGS07-09	66	Scrubber Spray Lateral Removal System	0	1	0	18	92	111	18	165**	Regulatory		
IGS07-10	68	Replace Opacity Monitors	0	5	2	0	100	107	0	107	Regulatory		
IGS07-11	70	Replace Feedwater Heater Alternate Drain Valve Level Controls	0	2	20	0	80	102	102	368**	Obsolescence		
IGS07-12	72	Site HVAC Controls Upgrades	0	5	0	95	0	100	85	185	Obsolescence		
IGS07-13	74	Replace Flyash Silo Feeder Isolation Valves	0	1	15	0	32	48	0	48	Regulatory		
IGS07-14	76	Lube Oil Filtration System for Pulverizer Gearbox	0	1	5	0	18	24	24	48	Economic	3.70	32%
IGS07-15	78	Safety Showers for Ash Water Recycle Pump	0	1	0	23	12	36	0	36	Regulatory		
IGS07-16	80	Fall Arrest System U1&U2 Crane Bays	0	1	5	0	12	18	0	18	Regulatory		
IGS Unidentified Capital Purchases			0	5	10	15	15	45	0	45			
IGS Totals			**3,675**	**172**	**254**	**8,548**	**5,703**	**14,677**	**2,609**	**27,476**			
ICS07-01	81	Replace Converter Station Stainless Steel Cooling Towers	0	2	0	348	0	350	0	350	Obsolescence		
ICS07-02	82	Converter Station 125 Volt Batteries and Chargers	0	2	5	138	0	145	0	145	Obsolescence		
ICS Unidentified Capital Projects			0	1	2	0	12	15	0	15			
Total ICS Capital Projects			**0**	**5**	**7**	**486**	**12**	**510**	**0**	**510**			
Total Capital Projects			**3,675**	**177**	**261**	**9,034**	**5,715**	**15,187**	**2,609**	**27,986**			

Notes:
1. * Multi-Year Project
2. **Project Total includes funds from budget years not shown on table, see detailed justification form

IP7021473

TERMOUNTAIN POWER SERVICE CORPORATION

☒ REQUISITION FOR CAPITAL EQUIPMENT

☐ PURCHASE AUTHORIZATION FOR EXPENSE ITEMS

Date: 27-Nov-07
Req./PA No: 234399
P.O. No:
Vendor:
Terms:
FOB:
Ship Via:
Conf. To:

Purpose of Materials, Supplies or Services:

Purchase of fuel injectors, x-vanes, and flat back elbows for Unit 2 burner outage repairs Spring 2008.

Suggested Vendor: Siemens Power Generation
440 Alafaya Trail MC Q1-101
Orlando, FL 32826

Account No. 00-2SGX-402
Work Order No. 06-03474
Project No. IGS07-02

Qty	Unit	Description Noun Adjective	Catalog #	Seller or Manufacturer	Unit Cost	Extension
48	ea	Fuel Injectors			$12,864.58	$617,500.00
48	ea	x-vane			$1,354.17	$65,000.00
48	ea	flat back elbows			$4,062.50	$195,000.00
		TOTAL ESTIMATED COST				$877,500.00

Remarks: Repairs and material cost agreement from October 31, 2007 meeting with Siemens (Tom Cochran, Bob Allen, John Gallagher) and IPSC (George Cross, Dennis Killian, Jerry Hintze, Garry Christensen) at IPSC.

Delivery requested by [Date] 03-28-08 Originator Garry Christensen

Dept. Mgr/Supt. Date Station Manager Date Operating Agent Date

IP7021474

PURCHASING WORK RELEASE/REQ/SERVICE ENTRY PU2001

Requisition No: 241992
1 WO Number: 06-03474-0 2 Crew: 3 Equip No: 2SGA--A
4 Action Code: 5 PD REPAIR
WO Priority 3A OPERATIONAL EQUI
5 Requisition Lines

	Ln No	Contract Number	Item Description	Qty Required	Estimated Unit Cost	Date Required
1:	1	S045603	REPLACE EXISTING BURNER	48	5,208.33000	03/01/08

WHICH ONE (F=FILE, E=EXIT) ? f
Requisition Number Is 241992 (RTN)(PU0057)

IP7021475

PURCHASING WORK RELEASE/REQ/SERVICE ENTRY PU2001

Requisition No: 241992
1 WO Number: 06-03474-0 2 Crew: 3 Equip No: 2SGA--A
4 Action Code: 5 PD REPAIR
WO Priority 3A OPERATIONAL EQUI
5 Requisition Lines

	Ln No	Contract Number	Item Description	Qty Required	Estimated Unit Cost	Date Required
1:	1	S045603	REPLACE EXISTING BURNER	48	5,208.33000	03/01/08

WHICH ONE (F=FILE, E=EXIT) ?
D70371 15:13 26 NOV 2007 Intermountain Power Service Corp. USER.LIVE.DATA

IP7021476

INTERMOUNTAIN POWER SERVICE CORPORATION

☒ REQUISITION FOR CAPITAL EQUIPMENT

☐ PURCHASE AUTHORIZATION FOR EXPENSE ITEMS

Date: 27-Nov-07
Req./PA No: 234410
P.O. No:
Vendor:
Terms:
FOB:
Ship Via:
Conf. To:

Purpose of Materials, Supplies or Services:

Removal of existing Unit 2 burner elbows and burner injectors and installation of new injectors and elbows supplied by Siemens during Spring 2008 planned outage.

Req# 241992

Req# ~~241970~~

Suggested Vendor: AP&F
1230 West 2600 South
Woods Cross, UT 84087

Account No. 00-2SGX-402
Work Order No. 06-03474
Project No. IGS07-02

Qty	Unit	Description Noun / Adjective	Catalog #	Seller or Manufacturer	Unit Cost	Extension
48	ea	Replace existing burner elbow and burner injector			$5,208.33	$250,000.00
		with new injector and elbow supplied by Siemens.				
		Same conditions as under site services contract				
		with AP&F #45603.				
				OST		$250,000.00

Instead of existing manual req. An electronic req was submitted 241992 under service contract 45603 per Dem Lind/ Jerry Hintze

Remarks: Installation of the new bu[illegible] r elbows on Unit 2 supplied by Siemens per October 31, 2007 meetin[illegible]
AP&F phone 801-397-2763, Fax 801-39[illegible], email: www.apipower.com

ivery requested by [Date] 03-01-08 Originator Garry Christensen

Dept. Mgr/Supt. Date Station Manager Date Operating Agent Date

IP7021477

Intermountain Generating Station
Unit 2 Burner Injector and Burner Elbow Replacement

Project Description
Replacement of all 48 burner elbows and burner injectors.

The existing burner injectors and burner elbows will be replaced with new injectors and sweep elbows provided by Siemens. The replaced injectors and elbows will be removed from the unit to a designated area. Burners are located on the 5th through the 8th level on the unit.

Scope of Work.:

1. Removal of old burner elbow on all 48 burners. (Just like 2006 outage)
    a. Removal of welded TC from burner pipe.
    b. Install needed rigging for burner pipe support.
    c. Burner elbow removal by row.
    d. Removal of old elbows to designated area outside of unit.

2. Removal of old burner injector on all 48 burners. (Just like 2006 outage, 2000 # each)
    a. Removal of lagging and insulation needed to unbolt injector.
        i. Can happen at earlier sequence.
    b. Unbolt injector and pull out of burner.
    c. Removal of old injectors to designated area outside of unit.

3. Clean up burner casing prior to installation of new injector.
    a. Guzzle up all ash in burner casing and all ash that has fallen into burner secondary air opening.
    b. Repair burner casings as needed. ** Inspection 2 years ago showed damage on several burner casings per row. We will not know the extent of repairs needed until injector pulled.

4. Installation of 48 new burner injectors.
    a. Mobilize new burner injectors to appropriate burner rows.
    b. Install new burner injectors by sliding into burner casing and bolting up to burner housing with gasket material.
    c. Install insulation and lagging. (Can be installed after elbow installation)

5. Installation of 48 new flat back burner elbows.
    a. Mobilize new burner flat back elbows to appropriate burner rows.
    b. Position and bolt up 48 new burner elbows with gasket material.

6. General cleanup following.

7. Schedule:
    a. Injectors and flat back elbows:
        i. Start of work: March 28, 2008 or as soon as required materials are on site.

ii. Completion: Installation and inspections of burner injector and elbows by April 21, 2008 at 07:00

8. Materials:
   a. Materials to be supplied by Siemens.
      i. Burner fuel injector.
      ii. Flat back elbows with x-vane.
   b. Materials supplied by IPSC or Siemens.
      i. Gasket material for burner elbow flanges.
      ii. Gasket material for injector to burner housing.
      iii. 253 MA material to repair burner casings.
   c. The contractor shall be responsible for providing all additional parts, tools, and/or materials including insulation and lagging required for the completion of this job.

Garry Christensen - Spare Parts Pricing

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 4/14/2008 9:19 AM
Subject: Spare Parts Pricing
Attachments: SP1270.pdf

Garry,

In response to your recent pricing request:

1. The flatback flange with integral fuel distributor is Part #ABT-522-A03-0

   Price for one assembly is $5,940 plus shipping costs.

2. The throat casting segment is Part #03008-300-A12-D01.

   One complete throat, consisting of 6 castings shipped loose is offered at $4,100 plus shipping costs.

Shipment could be made within approx. 10-12 weeks ARO.

TERMS: Siemens Selling Policy 1270 - July 1, 2006 (attached)

Purchase Orders for spare parts can be placed directly with ABT.

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A SIEMENS Company
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Monday, April 07, 2008 6:02 PM
To: Tichy, Ken V O6473
Subject: RE: Arrival of shipment #4

Ken, shipment #4 arrived this afternoon.
Planning has asked me to get a part number and price for the replaceable piece in the elbow. The flange on the elbow with the x-vane attached. We would also like part number and pricing of a full section of throat pieces. They are just looking to have them on hand for future work.
Regards,

Garry Christensen
Intermountain Power Service Corp.

IP7021480

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 4/7/2008 7:28 AM
Subject: RE: Arrival of shipment #2

Agreed. Last 2 trucks are still on schedule to leave NJ on 4/9 and 4/11.

I received a call over the weekend re weld procedures, unfortunately for some reason the message did not come through on my cell phone voice mail until Sunday. I called as soon as I got it yesterday and advised to use either 253MA Rod or 309L Rod. Let me know if this needs to be discussed further. Sorry for any delay in responding.

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A SIEMENS Company
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Monday, April 07, 2008 9:13 AM
To: Tichy, Ken V O6473
Subject: RE: Arrival of shipment #2

We received shipment #3 Sunday April 6. We should probably be seeing shipment #4 today if it left Friday.
Regards,

Garry Christensen
Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

>>> "Tichy, Ken V O6473" <ken.tichy@siemens.com> 4/4/2008 11:33 AM >>>
Confirming that Trucks #3 & 4 are on the road.

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A SIEMENS Company
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Tichy, Ken V O6473
Sent: Wednesday, April 02, 2008 1:50 PM
To: 'Garry Christensen'
Subject: RE: Arrival of shipment #2

Garry,

Following up on your e-mail this morning.

Current Ship Dates:

8 Units 4/3/08 (was 4/4).

8 Units 4/4/08 (was 4/7).

8 Units 4/9/08 (was 4/11).

8 Units 4/11/08 (was 4/14).

Looks like we've gained 2-3 days from my previous estimate. Hopefully there will be no more hiccups and we can hold these.

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A SIEMENS Company
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Wednesday, April 02, 2008 9:19 AM
To: Tichy, Ken V O6473
Subject: Arrival of shipment #2

Ken, shipment #2 arrived this morning. Trucking dispatcher said that shipment #3 should leave tomorrow and shipment #4 on Friday. This would be great. He said they now have two drivers per load so they can drive around the clock. This will save a couple of days each shipment. That will help. We may make it yet. Thanks for your help. If this is true, let me know.
Regards,

Garry Christensen
Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 4/2/2008 11:50 AM
Subject: RE: Arrival of shipment #2

Garry,

Following up on your e-mail this morning.

Current Ship Dates:

8 Units 4/3/08 (was 4/4).

8 Units 4/4/08 (was 4/7).

8 Units 4/9/08 (was 4/11).

8 Units 4/11/08 (was 4/14).

Looks like we've gained 2-3 days from my previous estimate. Hopefully there will be no more hiccups and we can hold these.

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A SIEMENS Company
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Wednesday, April 02, 2008 9:19 AM
To: Tichy, Ken V O6473
Subject: Arrival of shipment #2

Ken, shipment #2 arrived this morning. Trucking dispatcher said that shipment #3 should leave tomorrow and shipment #4 on Friday. This would be great. He said they now have two drivers per load so they can drive around the clock. This will save a couple of days each shipment. That will help. We may make it yet. Thanks for your help. If this is true, let me know.
Regards,

Garry Christensen
Intermountain Power Service Corp.
Performance Engineer

850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 3/31/2008 6:44 AM
Subject: RE: Injector Shipment

I gave them an incentive to hit or improve upon the 4/4 and 4/7 dates.

Tomorrow morning we will have all the castings in the shop for shipment #5. I have 5 left to get from the foundry to the liners. They are all poured and being cleaned and prepped - these will all be there by midweek and hopefully lined and at the fab shop by Friday. My prediction is 4/11 and 4/14 for the last two shipments. This is just a prediction based on the way things have been flowing - I will firm it up as soon as I can. We will have these shipments expedited to get there as fast as they can.

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A SIEMENS Company
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Saturday, March 29, 2008 9:10 AM
To: Tichy, Ken V O6473
Subject: RE: Injector Shipment

With the shipment on 4/7/08 we will only have two more left. Hopefully the last two can make it out in time. Keep us informed. Today (3/29/08) we are starting to pull all elbows and injectors. We are still planning on getting all here in time but we have a contingency plan in-case. The sooner we know, the better so we won't waste time and money fixing a burner row or two of injectors. Thanks for the update.
Regards,

Garry Christensen
Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 3/28/2008 9:18 AM
Subject: RE: Thermocouple Shipment

Garry,

Here's the up to the minute status:

8- Pcs. Ship 3/28/08

8- Pcs. Ship 4/4/08

8- Pcs. Ship 4/7/08

I will expedite the 4/7 shipment to get it there as fast as possible.

Will provide more updates when I have them.

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A SIEMENS Company
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Tichy, Ken V O6473
Sent: Thursday, March 27, 2008 10:16 AM
To: 'Garry Christensen'
Subject: RE: Thermocouple Shipment

Unfortunately no, it's scheduled for tomorrow. I realize this puts your installer behind the 8 ball. As soon as I have more information this morning I'll let you know.

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A SIEMENS Company

271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Thursday, March 27, 2008 8:50 AM
To: Tichy, Ken V O6473
Subject: RE: Thermocouple Shipment

Did shipment #2 leave on the 24th ?

>>> "Tichy, Ken V O6473" <ken.tichy@siemens.com> 3/27/2008 6:30 AM >>>
They have the plant address. I think the FEDEX site just shows the terminal that the final delivery is made from.

The last report was Shipment #3 is not leaving until next week. I'm trying to get a firm schedule now that we have all the disasters behind us.

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A SIEMENS Company
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Thursday, March 27, 2008 7:37 AM
To: Tichy, Ken V O6473
Subject: Re: Thermocouple Shipment

Ken, I printed out the tracking document on the TC's and it has as destination to Salt Lake City, Utah. I hope you have sent them to be delivered here. I haven't heard word on the injectors. If shipment #2
left Monday they should be here anytime. Also is shipment #3 leaving

today? Let me know the latest. Thanks

Garry Christensen
Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

>>> "Tichy, Ken V O6473" <ken.tichy@siemens.com> 3/27/2008 2:45 AM >>>
Please see attached file for tracking # and status.

KT

From: Tichy, Ken V O6473
Sent: Mon 3/24/2008 8:20 AM
To: Garry Christensen
Subject: RE: Burners

Garry,

Below is a summary of what my engineering group gave me regarding the TC's. I have asked the TC supplier to provide the expected onsite date
and will forward upon receipt.

We locate the TC's on the parts of the burner that are expected to experience the highest temperatures. This way we know if the burner is
experiencing temperatures higher than what would be expected under normal operating conditions. These TC locations are not necessarily in
the air flow path. The thermocouple on the nozzle casting will benefit
somewhat from opening the sleeve damper. The barrel thermocouple is not
in the air flow path and will not be affected by secondary air flow.

The site pipe for the observation glass terminates upstream of the secondary air spin vanes. See attached pdf file. The static pressure in
this location is about 1" less than windbox pressure when the burner is
in service. Subsequently air will blow out when the glass is removed.

As far as the ash in the out of service burner barrels, it sounds like the cooling position of the secondary air dampers is set too low. The burners toward the center of they unit may not be getting adequate cooling air flow and the ash from the furnace may be blowing back in.

If the cooling position is currently 10% open, maybe 20% should be used.
The dampers should be open slightly on out of service burners to provide some air flow. I believe this is a B&W unit with a segregated windbox - are the mass SA dampers at the windbix inlet fully closed when
a burner row is out of service?

KT

From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Thu 3/20/2008 2:21 PM
To: Tichy, Ken V O6473
Subject: RE: Burners

Ken, we have as high as 760 - 780 F range secondary air depending on the
temperature of ambient air. Typical is around 720 - 730 F range.
Previous experience has shown that when alarm points did come in that raising/opening up registers had little effect dropping the temperatures
due to the location of the thermocouples. These burners also like to vortex back on itself as demonstrated by positive pressure when opening
in-service burner observation windows and ash buildup in the out-of-service burner barrels.
Regards,

Garry Christensen
Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

>>> "Tichy, Ken V O6473" <ken.tichy@siemens.com> 3/20/2008 11:27 AM
>>>
Gasket material for all 48 fuel injectors/elbows will be on the next truck.

The following table provides guidelines for TC alarm points.

These may need to be adjusted somewhat once typical operating

conditions are determined.

The burner barrel temperatures listed below are based on a secondary air operating temperature of 645°F which I pulled from some old design documents. I do not know if this is where you typically run, so we may
have to look at this further.

Let me know if you have questions/concerns based on plant experience.

Alarm Point

Location

In-Service Burner

Out-of-Service Burner

Burner Tip

800°F

1400°F

Burner Barrel

650°F

650°F

Best Regards,

Kenneth V. Tichy, P.E.

Project Manager

Advanced Burner Technologies

A SIEMENS Company

271 Route 202/206

PO Box 410

Pluckemin, NJ 07978

ken.tichy@siemens.com

PHONE: 908.212.0571

FAX: 908.470.0479

CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Thursday, March 20, 2008 11:53 AM
To: Tichy, Ken V O6473
Subject: Burners

Ken, when is the gasket material coming? Also, what are the temperature limits we should set for these TC's? The TC's are still located where they get no air flow. The air sleeve keep the air outside
of this area. Thanks

Regards,

Garry Christensen

Intermountain Power Service Corp.

Performance Engineer

850 W. Brush Wellman Road

Delta, Utah 84624-8546

garry-c@ipsc.com (mailto:garry-c@ipsc.com)

Telephone (435) 864-6486

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 3/24/2008 6:21 AM
Subject: RE: Burners
Attachments: 03008-100-A00-D0-R03.pdf

Garry,

Below is a summary of what my engineering group gave me regarding the TC's. I have asked the TC supplier to provide the expected onsite date and will forward upon receipt.

We locate the TC's on the parts of the burner that are expected to experience the highest temperatures. This way we know if the burner is experiencing temperatures higher than what would be expected under normal operating conditions. These TC locations are not necessarily in the air flow path. The thermocouple on the nozzle casting will benefit somewhat from opening the sleeve damper. The barrel thermocouple is not in the air flow path and will not be affected by secondary air flow.

The site pipe for the observation glass terminates upstream of the secondary air spin vanes. See attached pdf file. The static pressure in this location is about 1" less than windbox pressure when the burner is in service. Subsequently air will blow out when the glass is removed.

As far as the ash in the out of service burner barrels, it sounds like the cooling position of the secondary air dampers is set too low. The burners toward the center of they unit may not be getting adequate cooling air flow and the ash from the furnace may be blowing back in. If the cooling position is currently 10% open, maybe 20% should be used. The dampers should be open slightly on out of service burners to provide some air flow. I believe this is a B&W unit with a segregated windbox - are the mass SA dampers at the windbix inlet fully closed when a burner row is out of service?

KT

From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Thu 3/20/2008 2:21 PM
To: Tichy, Ken V O6473
Subject: RE: Burners

Ken, we have as high as 760 - 780 F range secondary air depending on the temperature of ambient air. Typical is around 720 - 730 F range. Previous experience has shown that when alarm points did come in that raising/opening up registers had little effect dropping the temperatures due to the location of the thermocouples. These burners also like to vortex back on itself as demonstrated by positive pressure when opening in-service burner observation windows and ash buildup in the out-of-service burner barrels.
Regards,

Garry Christensen
Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)

Telephone (435) 864-6486

>>> "Tichy, Ken V O6473" <ken.tichy@siemens.com> 3/20/2008 11:27 AM
>>>
Gasket material for all 48 fuel injectors/elbows will be on the next truck.

The following table provides guidelines for TC alarm points.

These may need to be adjusted somewhat once typical operating conditions are determined.

The burner barrel temperatures listed below are based on a secondary air operating temperature of 645°F which I pulled from some old design documents. I do not know if this is where you typically run, so we may have to look at this further.

Let me know if you have questions/concerns based on plant experience.

Alarm Point

Location

In-Service Burner

Out-of-Service Burner

Burner Tip

800°F

1400°F

Burner Barrel

650°F

650°F

Best Regards,

Kenneth V. Tichy, P.E.

Project Manager

Advanced Burner Technologies

A SIEMENS Company

271 Route 202/206

PO Box 410

Pluckemin, NJ 07978

ken.tichy@siemens.com

PHONE: 908.212.0571

FAX: 908.470.0479

CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Thursday, March 20, 2008 11:53 AM
To: Tichy, Ken V O6473
Subject: Burners

Ken, when is the gasket material coming? Also, what are the temperature limits we should set for these TC's? The TC's are still located where they get no air flow. The air sleeve keep the air outside of this area. Thanks

Regards,

Garry Christensen

Intermountain Power Service Corp.

Performance Engineer

850 W. Brush Wellman Road

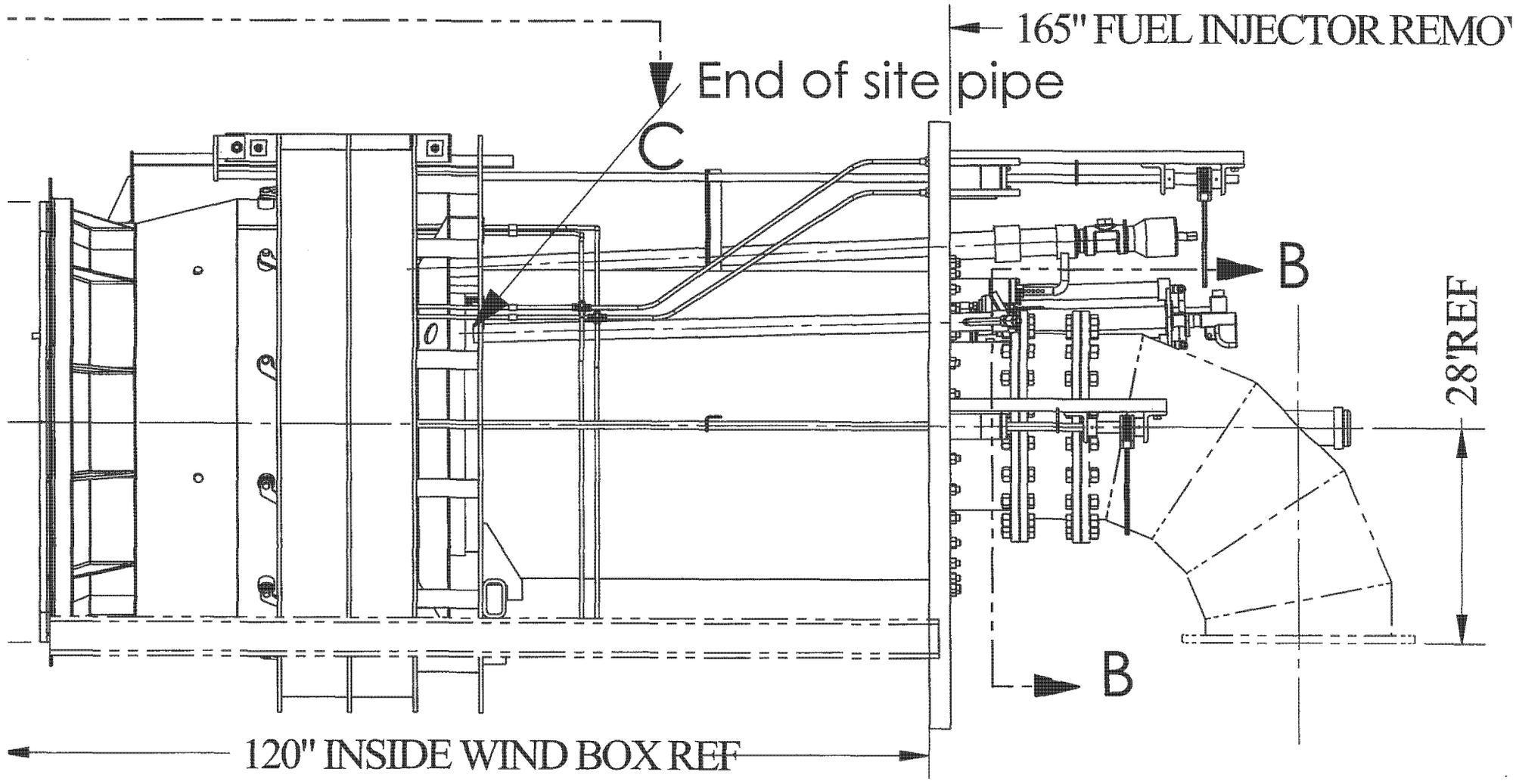
Delta, Utah 84624-8546

garry-c@ipsc.com (mailto:garry-c@ipsc.com)

Telephone (435) 864-6486

SECTION C-C
VIEW IS
03008-400-A00-D0
ONLY

SCALE 1 : 12
BODY THERMOCOUPLE LOCATION



IP70214498

Garry Christensen - RE: Burners

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 3/20/2008 11:27 AM
Subject: RE: Burners

Gasket material for all 48 fuel injectors/elbows will be on the next truck.

The following table provides guidelines for TC alarm points.

These may need to be adjusted somewhat once typical operating conditions are determined.

The burner barrel temperatures listed below are based on a secondary air operating temperature of 645°F which I pulled from some old design documents. I do not know if this is where you typically run, so we may have to look at this further.

Let me know if you have questions/concerns based on plant experience.

	Alarm Point	
Location	In-Service Burner	Out-of-Service Burner
Burner Tip	800°F	1400°F
Burner Barrel	650°F	650°F

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A SIEMENS Company
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Thursday, March 20, 2008 11:53 AM
To: Tichy, Ken V O6473
Subject: Burners

Ken, when is the gasket material coming? Also, what are the temperature limits we should set for these TC's? The TC's are still located where they get no air flow. The air sleeve keep the air outside of this area. Thanks
Regards,

Garry Christensen
Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road

IP7021499

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 3/20/2008 7:26 AM
Subject: RE: Update 03-17-08

Next shipment of 8 fuel injectors, and all thermocouples will be on the road early next week. The 3rd shipment of fuel injectors should be later in the week. I will give you a further update early next Thursday. I will be out of town for the next few days but staying in touch with the fabricators daily.

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A SIEMENS Company
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Monday, March 17, 2008 3:17 PM
To: Tichy, Ken V O6473
Subject: Update 03-17-08

Ken, for your information, the rest of the flat-back elbows arrived Friday 3-15-08. I received a call from the driver of the first 8 injectors this morning. He was around Denver and expects to arrive tomorrow 3-18-08. I will let you know if this happens.
Regards,

Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 3/13/2008 3:29 PM
Subject: RE: Reply 03-13-08

I don't think the driver left until the 11th so even better.

As many fuel injectors as possible would also help me sleep better at night - it hasn't been a pleasant month.

We missed something in translation on my last e-mail - I'm currently only thinking I can get 2 truckloads (16 injectors) to site prior to the outage start. The next shipment won't leave early in the week either - I'm waiting to hear when. The others will follow quickly but until we get the parts backlog back up we're not working very efficiently as it's basically one by one instead of working 8 injectors at a time in assembly line fashion with a dedicated crew.

The main quality issue found was loss of thickness in one area of the casting. They were still able to make castings but at a 50% reject rate.

This was ultimately determined to have been caused by a problem with the wooden core box which was addressed by repair of that item.

The other problem experienced was excessive surface porosity. I'm told by my casting inspector that porosity on the casting surface is a normal occurrence for a sand casting and this is typically addressed at the foundry during the cleaning process - many times via weld repair depending on the extent of the issue. In this case it was excessive and not addressed. I do not know if this was a result of my expediting and them trying to push castings out the door.

As soon as I get some better schedule projections I will let you know.

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A SIEMENS Company
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Thursday, March 13, 2008 4:27 PM
To: Tichy, Ken V O6473
Subject: Reply 03-13-08

Ken, thanks for the update. I received a call today from the truck driver with the elbows and he said that

he would be delivering tomorrow (Friday). He made better time if he left on the 10th. As many injectors as soon as possible will really help us. Should we still expect at minimum 32 injectors here by the 28th? I have informed our installers that the first shipment should be here early next week and that another shipment will be on its way the first of next week. As soon as you can give me your best time frame let me know. We are curious as to what the quality issues at the foundry were. Perhaps you could expound.
Regards,

Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

Garry Christensen - RE: Arrival of 1st load of 24 elbows

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 3/13/2008 10:48 AM
Subject: RE: Arrival of 1st load of 24 elbows
Attachments: Shipment of 24 elbows 3-11-08.pdf; Fuel Injector Shipment 3-13-08.pdf

Garry,

Attached is paperwork for this week's 2 shipments. You will note that we're only able to put 8 fuel injectors on each truck. Sorry I did not get you this update sooner, I was out of the office. I hope to have another shipment of fuel injectors next week. That's the best I am going to be able to guarantee in assisting the staging effort prior to the outage given the 4-5 day transit time. The current shipment of fuel injectors includes one of each thermocouple which we utilized for a fit-up test. The balance of thermocouples - 47 of each – are scheduled to ship Friday 3/14/08. I am currently waiting for a status update on these.

I've been holding off on schedule updates as we had some issues I was trying to get my arms around. Last week we ran into some quality issues at the foundry which required rework on both foundry mold tooling and completed castings. We lost a few days of productivity addressing the problems and we now have a positive flow of parts again. I'm trying to finalize a better handle on things today, my current concern is the last 16 fuel injectors as these are the ones which are currently waiting on castings.

Will advise further as I receive updates.

KT

From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Mon 3/10/2008 12:35 PM
To: Tichy, Ken V O6473
Subject: Arrival of 1st load of 24 elbows

Ken, the shipment of elbows just got unloaded. Is our next shipment the load of injectors you said would be shipped tomorrow or Wednesday? Let me know how schedule is looking. Also, do the injectors have marked on them somewhere if they are clockwise or counterclockwise? The burner had it on but I do not remember seeing it on the injector.
Regards,

Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

IP7021503

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Original Bill of Lading, the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

From Casale Industries Inc.
At 400 South Ave.
Garwood, N.J. 07027

CONSIGNEE AND DESTINATION
Intermountain Power Service Corp.
850 West Brush Wellman Road
Delta, Utah. 84624-9546

DATE

SHIPPER'S NO. 4911

CARRIER

CARRIER'S NO.

BY Harvey Trucking

ROUTE

DELIVERING CARRIER

CAR OR VEHICLE INITIALS & NO.

NO. PACKAGES	HM	DESCRIPTION OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS	*WEIGHT	CLASS OR RATE	✓
4		Fuel Injectors c/w.	2,500/each		
4		FUEL INJECTORS. cc/w.			
2		THERMOCOUPLES.			
		ABT PO# A07-008-414			
		Deliveries made Mon-Fri			
		0700 thru 1600 local time			
		Contact Garry Christensen			
		435-864-6486			
		* 3rd Party Billing - ABT-271 Route 202/206 *			
		P.O. Box 410			
		Pluckemin, N.J. 07978			

Subject to Section 7 of conditions of bill of lading, if this shipment is to be delivered to the consignee without recourse on the consigner, the consigner shall sign the following statement.
The carrier shall not make delivery of this shipment without payment of freight and other lawful charges.

Per _____ (Signature of Consignor)

If charges are to be pre-paid write or stamp here, "To be Prepaid."

Received $ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier.

Per _____

(The signature here acknowledges only the amounts prepaid).

Charges Advanced:

$ _____

When transporting hazardous materials include the technical or chemical name (or a.e.s. not otherwise specified) or generic description of material with appropriate UN or NA number as defined in US DOT Emergency Response Communication Standard (HM-126C). Provide emergency response phone number in case of incident or accident. (In box at right)

EMERGENCY RESPONSE PHONE NO.

SHIPPERS CERTIFICATION: This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in the proper condition for transportation according to the applicable regulations of the Department of Transportation. SIGNATURE _____ TITLE _____

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight".
† Shipper's imprints in lieu of a stamp; not a part of the Bill of Lading approved by the Interstate Commerce Commission.
Note - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____

THIS SHIPMENT IS CORRECTLY DESCRIBED.

CORRECT WEIGHT IS _____ LBS.

†The fibre boxes used for this shipment conform to the specifications set forth in the box makers certificate thereon, and all other requirements of the Consolidated Freight Classification.

Per _____ Shipper

C.O.D. SHIPMENT
C.O.D. Amt _____
Collection Fee _____
Total Charges $0.00

Shipper, Per _____ Agent, Per _____

TOTAL P.02

IP7021504

BILL OF LADING

27-368
JMS Job#

Mercer
(Name of Carrier)

3/11/08
Date

TO: Consignee Intermountain Power Service Corp	FROM: Shipper **JMS FABRICATED SYSTEMS**
Street 850 West Brush Wellman Road	Street **647 Donohoe Road**
Destination Delta, Utah Zip Code 84624-9546	Origin **Latrobe, PA** Zip Code **15650**
Cust. PO# A07-008-410	Vehicle Number / EMERGENCY RESPONSE PHONE NO.

Contact: Garry Christensen PH: (435) 864-6486

Delivers shall be made MONDAY - FRIDAY 0700 - 1600 Local time

No. Shipping Units	+ HM	Kind of Packaging, Description of Articles, Special Marks and Exceptions	Weight (Subject to Correction)	Rate	CHARGES (for Carrier use only)
24		Flat Backs	40,000#		
		"LOAD MUST BE TARPED"			
		Prepay & Add			

REMIT C.O.D. TO: ADDRESS

COD Amt. $

C.O.D. FEE: PREPAID ☐ COLLECT ☐

"If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight".

+Shipper's imprint in lieu of stamp; not a part of bill of lading approved by the Interstate Commerce Commission.

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding.

$ _____ per _____

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:

The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

TOTAL CHARGES $

FREIGHT CHARGES
Check Appropriate Box:
☐ Freight prepaid ☐ Collect

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of receipt by the carrier of the property described in the Original Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder, shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classifications in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

"This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation."

SHIPPER Diane Jones	CARRIER MERCER #7981
PER	PER [signature] DATE 3-11-08

Permanent post office address of shipper

+ MARK WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS.
For further details on SHIPPING HAZARDOUS MATERIALS see Federal Regulations 49 CFR Part 172.

IP7021505

TRUCK #2

JMS FABRICATED SYSTEMS
647 DONOHOE ROAD
LATROBE, PA 15650

PH: 724-832-3640 FAX: 724-832-3680
E-MAIL: jims@jmsind.net

PACKING LIST

JMS Job #27-368A

SHIP TO:

INTERMOUNTAIN POWER SERVICE CORP
850 WEST BRUSH WELLMAN ROAD
DELTA, UTAH 84624-9546

P.O. # A07-008-410

SHIP VIA: MERCER

QUANTITY ORDERED	QUANTITY SHIPPED	DESCRIPTION
48	24	Item # 1 DESC.: COMPLETE ELBOW ASSEMBLIES ABT DWG NO.: 07008-522-A00-0

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 3/7/2008 11:09 AM
Subject: RE: elbows

I'm heading to the shop now. We have a shipment of fuel injectors leaving Tuesday or Wednesday next week. Let me know what you were thinking for the installation - I have a tentative plan to be there for a few days but if you are looking for a full time installation adviser let me know. If this is required I'd have to have look at availability of personnel.

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A SIEMENS Company
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Friday, March 07, 2008 12:44 PM
To: Tichy, Ken V O6473
Subject: elbows

Ken, just to let you know that the elbows per the driver will be here Monday the 10th. I will let you know if that happens. I hope you will have a more firm time frame on the rest of the parts. Also, is someone coming out for the installation and startup and if so, who?

Driver Jeff Davis 304-629-1342 if you need to talk with him.

Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

From: "Larry Shekell" <lshekell@Piburners.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 3/7/2008 11:51 AM
Subject: RE: air flow divider cylinder for Intermountain Power

Garry,

They shipped Thursday and should be at your plant early next week.

Thanks for the order.

Larry

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Friday, March 07, 2008 12:53 PM
To: Larry Shekell
Subject: air flow divider cylinder for Intermountain Power

Larry, let me know when they get shipped. We need them here still by the 28th of March. Thanks!

Regards,

Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

Garry Christensen - RE: Burner elbows and injectors for Intermountain Power

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 2/26/2008 11:26 AM
Subject: RE: Burner elbows and injectors for Intermountain Power

Garry,

I received your voice mail and e-mail last week. I agree to ship what we can when we can if there is any advantage to be gained by doing so. Our original plan was 4 trucks – 12 injectors per truck at approximately $3,000 - $4,000 per load. It remains to be seen if we can actually get 12 on a truck. Based on the current parts progress, the first truck and probably the second truck will be a full load. We'll see what happens from there per the progress shown below.

Following for your information is a schedule status as of this morning.

THERMOCOUPLES:

Thermocouples are expected to ship on or before 3/21/08.

ELBOWS:

Current schedule:

24 on one truck – leaving fab. shop in PA on or before 3/7/08 (full truck)
24 on one truck – leaving fab. shop in PA on or before 3/14/08 (full truck)

FUEL INJECTOR BARRELS:

All 48 fuel injector barrels are fabricated and lined.

FUEL INJECTOR COMPONENTS:

Fabrication of other fuel injector components continues – my estimate is that they were in excess of 80% complete on these miscellaneous parts as of my weekly visit to the fab. shop on the morning of 2/21.

11 lined tips were received last week at the fabrication shop. My weekly visit to the shop this Thursday will give me some feel for what kind of time and manpower it will take for final assembly. It will be at least another week before I can narrow in on what we can do with regard to overtime and firm delivery schedule.

FUEL INJECTOR CASTING AND LINING:

The critical path remains the burner tip castings with internal tungsten carbide spray lining. We remain on track to have all parts cast and lined by 3/14.

We are currently pouring castings as fast as they can line them so a steady flow of parts is ongoing. The fab. shop should now be working with a backlog (rather than waiting on parts) for the duration of the project.

FUEL INJECTOR FINAL FABRICATION:

Complete fabrication and delivery of the first 24 fuel injectors remains expected by 3/28.

I remain optimistic that we will be able to get fuel injectors through the shop and utilize overtime to improve upon the schedule shown in my e-mail of 2/8.

As we discussed on 2/12, it remains too early to call with any degree of confidence. I will be discussing manpower with the fabrication shop over the next 2 weeks.

IP7021509

As soon as I have better information with regard to updated delivery dates I will let you know.

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A **SIEMENS** *Company*
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Friday, February 08, 2008 10:56 AM
To: Tichy, Ken V O6473
Cc: Dean Wood; George Cross; Jerry Hintze; Wes Bloomfield; Allen, Robert J O642
Subject: RE: Burner elbows and injectors for Intermountain Power

Ken, thanks for the update. It was agreed upon early that all parts would be onsite by March 28, 2008. Our outage starts the morning of the 29th and the injector/elbow work is to be completed by April 21, 2008. Removing the elbows and pulling the injectors has to happen the first week so air flow divider repair work can proceed in preparation for installing the new injectors. April 7 is the drop dead date for all parts to be onsite. If this is not achievable we need to know. We can not afford to pull all the elbows and injectors at the start of the outage hoping that the parts will arrive in time. Your help in making this project a success is appreciated. Please keep us informed with a weekly status.

Best Regards,

Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

>>> "Tichy, Ken V O6473" <ken.tichy@siemens.com> 2/8/2008 8:12 AM >>>
Greetings Gary,

I apologize for not getting back to you sooner. I was traveling earlier in the week and I have been collecting the latest schedule information from the various fabrication shops since I returned. The current status is as follows:

Thermocouples are expected to ship on or before 3/21/08.

30 fuel injector elbows are fabricated and are in the process of ceramic lining.

IP7021510

The remaining 18 will be fabricated as the first 30 are lined with lining of these 18 to follow.

The completed elbows are expected to be ready to ship to you on or efore 3/15.

All fuel injector barrels are fabricated. Fabrication of other fuel injector components is ongoing while these items are out for ceramic lining.

At this time 32 fuel injector barrels have been ceramic lined and returned to the fabrication shop.

The balance will be back in the shop by 2/15.

The critical path is the burner tip castings with internal tungsten carbide spray lining.

The first 2 castings were inspected and approved by ABT at the foundry on 1/25.

Current Production Schedule is as follows:

A total of 17 castings will be poured and lined by 2/22.

12 more by 2/29.

The remaining 19 will follow with last item lined by 3/14.

Complete fabrication and delivery of the first 24 fuel injectors is expected by 3/28.

I expect to make a subsequent shipment the week of 4/7 with the final shipment of fuel injectors expected to be on site by 4/18.

Best Regards,

Kenneth V. Tichy, P.E.

Project Manager

Advanced Burner Technologies

IP7021511

A SIEMENS Company

271 Route 202/206

'O Box 410

Pluckemin, NJ 07978

ken.tichy@siemens.com

PHONE: 908.212.0571

FAX: 908.470.0479

CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Monday, February 04, 2008 11:47 AM
To: Tichy, Ken V O6473
Subject: Burner elbows and injectors for Intermountain Power

Ken, my name is Garry Christensen and I am over the burners here at Intermountain. I was given your name as the Project Manager for our injectors and elbows which are scheduled to be delivered by the 28th of March. I would like to keep an open dialogue as to their progress in manufacturing and possible delivery dates. Please reply back with your ›hone number, etc. I look forward to working with you.

Intermountain Power Service Corp.

Performance Engineer

850 W. Brush Wellman Road

Delta, Utah 84624-8546

garry-c@ipsc.com (mailto:garry-c@ipsc.com)

Telephone (435) 864-6486

IP7021512

Garry Christensen - RE: Burner elbows and injectors for Intermountain Power

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 2/18/2008 9:47 AM
Subject: RE: Burner elbows and injectors for Intermountain Power

Garry,

Following for your information is a schedule status as of this morning.

THERMOCOUPLES:

Thermocouples are expected to ship on or before 3/21/08.

ELBOWS:

30 fuel injector elbows are fabricated and are in the process of ceramic lining.

The remaining 18 are in fabrication and will be lined over the next 10 days.

All 48 elbows are expected to be ready to ship on or before 3/14.

FUEL INJECTOR BARRELS:

All 48 fuel injector barrels are fabricated and lined.

FUEL INJECTOR COMPONENTS:

Fabrication of other fuel injector components continues.

FUEL INJECTOR CASTING AND LINING:

The critical path remains the burner tip castings with internal tungsten carbide spray lining.

The first 11 castings have been sent to the lining shop.

5 are already lined and will ship to the burner fabricator today for final assembly of the first fuel injectors.

A total of 22 castings are scheduled to be poured and shipped for lining by 2/22.

12 more are scheduled to be at the lining shop by 2/29.

All tip castings are scheduled to be complete and lined by 3/14.

FUEL INJECTOR FINAL FABRICATION:

Complete fabrication and delivery of the first 24 fuel injectors remains expected by 3/28.

Based on the schedule for castings we should be able to get fuel injectors through the shop and utilize overtime to improve upon the schedule shown in my e-mail of 2/8.

As we discussed on 2/12, it remains too early to call with any degree of confidence. Once we have the first set of castings in the shop his week, I will start to get an idea of how long the final assembly process will take and how we can effectively schedule shop time & overtime to improve delivery as much as possible.

As soon as I have better information with regard to updated delivery dates I will let you know.

IP7021513

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A **SIEMENS** *Company*
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Friday, February 08, 2008 10:56 AM
To: Tichy, Ken V O6473
Cc: Dean Wood; George Cross; Jerry Hintze; Wes Bloomfield; Allen, Robert J O642
Subject: RE: Burner elbows and injectors for Intermountain Power

Ken, thanks for the update. It was agreed upon early that all parts would be onsite by March 28, 2008. Our outage starts the morning of the 29th and the injector/elbow work is to be completed by April 21, 2008. Removing the elbows and pulling the injectors has to happen the first week so air flow divider repair work can proceed in preparation for installing the new injectors. April 7 is the drop dead date for all parts to be onsite. If this is not achievable we need to know. We can not afford to pull all the elbows and injectors at the start of the outage hoping that the parts will arrive in time. Your help in making this project a success is appreciated. Please keep us informed with a weekly status.

Best Regards,

Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

>>> "Tichy, Ken V O6473" <ken.tichy@siemens.com> 2/8/2008 8:12 AM >>>
Greetings Gary,

I apologize for not getting back to you sooner. I was traveling earlier in the week and I have been collecting the latest schedule information from the various fabrication shops since I returned. The current status is as follows:

Thermocouples are expected to ship on or before 3/21/08.

IP7021514

30 fuel injector elbows are fabricated and are in the process of ceramic lining.

The remaining 18 will be fabricated as the first 30 are lined with lining of these 18 to follow.

The completed elbows are expected to be ready to ship to you on or before 3/15.

All fuel injector barrels are fabricated. Fabrication of other fuel injector components is ongoing while these items are out for ceramic lining.

At this time 32 fuel injector barrels have been ceramic lined and returned to the fabrication shop.

The balance will be back in the shop by 2/15.

The critical path is the burner tip castings with internal tungsten carbide spray lining.

The first 2 castings were inspected and approved by ABT at the foundry on 1/25.

Current Production Schedule is as follows:

A total of 17 castings will be poured and lined by 2/22.

12 more by 2/29.

The remaining 19 will follow with last item lined by 3/14.

Complete fabrication and delivery of the first 24 fuel injectors is expected by 3/28.

I expect to make a subsequent shipment the week of 4/7 with the final shipment of fuel injectors expected to be on site by 4/18.

Best Regards,

Kenneth V. Tichy, P.E.

Project Manager

IP7021515

Advanced Burner Technologies

A SIEMENS Company

'71 Route 202/206

PO Box 410

Pluckemin, NJ 07978

ken.tichy@siemens.com

PHONE: 908.212.0571

FAX: 908.470.0479

CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Monday, February 04, 2008 11:47 AM
To: Tichy, Ken V O6473
Subject: Burner elbows and injectors for Intermountain Power

Ken, my name is Garry Christensen and I am over the burners here at Intermountain. I was given your name as the Project Manager for our injectors and elbows which are scheduled to be delivered by the 28th of March. I would like to keep an open dialogue as to their progress in manufacturing and possible delivery dates. Please reply back with your phone number, etc. I look forward to working with you.

Intermountain Power Service Corp.

Performance Engineer

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Delta, Utah 84624-8546

garry-c@ipsc.com (mailto:garry-c@ipsc.com)

Telephone (435) 864-6486

IP7021516

February 13, 2008 Conference call with Ken Tichy Project Manager for ABT.
Location - Garry Christensen's office phone
Attendees - Jerry Hintze, Garry Christensen IPSC, Ken Tichy ABT

Ken Tichy was contacted by phone under the request of Jerry Hintze. The timetable of the injectors was discussed. Ken stated that the casting and coating of the tips is really the controlling item. Throwing more manpower on the tip work will not shorten the time. Ken did state that all the elbows should be shipped by the end of February. Jerry Hintze asked Ken if they were working 24/7 on the injectors and if not, could they. Jerry also discussed with Ken a possible option which would involve IPSC paying for extra labor to insure their arrival in time. Ken said he did not think this was an option and would look further into this option. Ken said that all the tips should be cast by the end of February and at that time he would have a better idea as to completion times.

From: Garry Christensen
To: Ken V O6473 Tichy
Subject: RE: Burner elbows and injectors for Intermountain Power

Ken, thanks for the update. It was agreed upon early that all parts would be onsite by March 28, 2008. Our outage starts the morning of the 29th and the injector/elbow work is to be completed by April 21, 2008. Removing the elbows and pulling the injectors has to happen the first week so air flow divider repair work can proceed in preparation for installing the new injectors. April 7 is the drop dead date for all parts to be onsite. If this is not achievable we need to know. We can not afford to pull all the elbows and injectors at the start of the outage hoping that the parts will arrive in time. Your help in making this project a success is appreciated. Please keep us informed with a weekly status.

Best Regards,

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The completed elbows are expected to be ready to ship to you on or before 3/15.

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At this time 32 fuel injector barrels have been ceramic lined and returned to the fabrication shop.

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Best Regards,

Kenneth V. Tichy, P.E.

Project Manager

Advanced Burner Technologies

A SIEMENS Company

271 Route 202/206

PO Box 410

Pluckemin, NJ 07978

ken.tichy@siemens.com

PHONE: 908.212.0571

FAX: 908.470.0479

CELL: 908.391.2175

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Sent: Monday, February 04, 2008 11:47 AM
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Intermountain Power Service Corp.

Performance Engineer

850 W. Brush Wellman Road

Delta, Utah 84624-8546

garry-c@ipsc.com (mailto:garry-c@ipsc.com)

Telephone (435) 864-6486

CC: Dean Wood; George Cross; Jerry Hintze; Robert J Allen; Wes Bloomfield

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 2/8/2008 8:13 AM
Subject: RE: Burner elbows and injectors for Intermountain Power

Greetings Gary,

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Project Manager

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PHONE: 908.212.0571

FAX: 908.470.0479

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Sent: Monday, February 04, 2008 11:47 AM
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Intermountain Power Service Corp.

Performance Engineer

850 W. Brush Wellman Road

Delta, Utah 84624-8546

garry-c@ipsc.com (mailto:garry-c@ipsc.com)

Telephone (435) 864-6486

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 2/4/2008 10:51 AM
Subject: Out of Office AutoReply: Burner elbows and injectors for Intermountain Power

I am currently out of the office. I will return on the afternoon of Wednesday 2/6/08.

I will have limited access to e-mail but will try to respond as soon as possible.

If you require immediate assistance please contact me on my cell phone at 908-391-2175.

Ken Tichy

FAX: 908.470.0479
CELL: 908.391.2175

From: Allen, Robert J O642
Sent: Tuesday, December 11, 2007 9:23 AM
To: Tichy, Ken V O6473
Subject: RE: Intermountain Replacement Burners

Ken,
Are these thermocouples any different than what is installed in the existing burners?
Bob Allen

From: Tichy, Ken V O6473
Sent: Monday, December 10, 2007 4:58 PM
To: Allen, Robert J O642
Subject: RE: Intermountain Replacement Burners

Bob,

I need to go ahead with the Intermountain Thermocouple order this week to meet delivery. Att what I will go with unless I hear otherwise.

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A **SIEMENS** *Company*
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

From: Tichy, Ken V O6473

Sent: Friday, November 16, 2007 5:36 PM
To: Allen, Robert J O642
Subject: Intermountain Replacement Burners

Bob,

Can you check with the customer with regard to the thermocouples? In the past we provided a confirm that this arrangement is best for them.

Thanks

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A **SIEMENS** *Company*
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

	PO#	Vend	Req #
27 FEB 2008	08-64792	9119	234399

SIEMENS POWER GENERATION
440 ALAFAYA TRAIL
ORLANDO, FL 32826

* * * S H I P T O * * *
INTERMOUNTAIN POWER SERVICE CORPORATION
850 W. BRUSH WELLMAN RD.
DELTA , UT 84624-9546

X	BEST WAY	AS INVOICED	S/P P.P. & ADD	1	1	NONE

		LINE 1			
48	EA	INJECTORS, FUEL	2SGX-402 06-03474-0	12,864.58	617,499.84
		LINE 2			
48	EA	X-VANE	2SGX-402 06-03474-0	1,354.17	65,000.16
		LINE 3			
48	EA	ELBOWS, FLAT BACK	2SGX-402 06-03474-0	4,062.50	195,000.00

NB

**NOTE: THIS PURCHASE ORDER IS FOR ACCOUNTING
TRACKING PURPOSES ONLY**

REFERENCE ATTACHED SETTLEMENT CONTRACT

DATE REQUIRED 02/27/09

TOTAL COST 877,500.00

NANCY BENNETT 435-864-4414

REVIEWED BY GEORGE CROSS

IP7021527

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Original Bill of Lading, the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

From Casale Industries Inc.
400 South Ave.
At Garwood, N.J. 07027

CONSIGNEE AND DESTINATION
Intermountain Power Service Corp.
850 West Brush Wellman Road
Delta, Utah. 84624-9546

DATE 4-10-08.
SHIPPER'S NO. 4911
CARRIER ↓
CARRIER'S NO.
BY Harvey Trucking
ROUTE
DELIVERING CARRIER
CAR OR VEHICLE INITIALS & NO.

NO. PACKAGES	HM	DESCRIPTION OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS	*WEIGHT	CLASS OR RATE	✓
8		Fuel Injectors	2,500/each		
		(1) CW INJECTOR.			
		(7) CCW INJECTOR.			
		SUNDAY DELIVERY			
		ABT PO# A07-008-414			
		Deliveries made Mon-Fri			
		0700 thru 1600 local time			
		Contact: Garry Christensen			
		(435-864-6486)			
	*	3rd Party Billing - ABT - 271 Route 202/206 *			
		P.O. Box 410			
		Pluckemin, NJ 07978			

Subject to Section 7 of conditions of bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement,
The carrier shall not make delivery of this shipment without payment of freight and other lawful charges.

Per _____ (Signature of Consignor)

If charges are to be pre paid, write or stamp here, "To be Prepaid."

Received $ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier.

Per

(The signature here acknowledges only the amount prepaid).

Charges Advanced:

$

When transporting hazardous materials include the technical or chemical name or a non (not otherwise specified) or generic description of material with appropriate UN or NA number as defined in US DOT Emergency Response Communication Standard (HM-126C). Provide emergency response phone number in case of incident or accident. (in box at right)

EMERGENCY RESPONSE PHONE NO.

SHIPPERS CERTIFICATION: This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in the proper condition for transportation according to the applicable regulations of the Department of Transportation. SIGNATURE _____ TITLE _____

If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight".
† Shipper's imprints in lieu of a stamp; not a part of the Bill of Lading approved by the Interstate Commerce Commission.
Note - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____

C.O.D. SHIPMENT
C.O.D. Amt _____
Collection Fee _____
Total Charges $0.00

THIS SHIPMENT IS CORRECTLY DESCRIBED.
CORRECT WEIGHT IS _____ LBS.

†The fibre boxes used for this shipment conform to the specifications set forth in the box makers certificate thereon, and all other requirements of the Consolidated Freight Classification.

Per _____ Shipper

Shipper, Per _____ Agent, Per _____

IP7021528

Track Shipments/FedEx Kinko's Orders

Detailed Results

Quick Help

Tracking number	149642826-4	**Origin location**	CHICOPEE, MA
Pick up date	Mar 25, 2008	**Destination location**	SALT LAKE CITY, UT
Estimated delivery	Apr 1, 2008	**Service type**	LTL Longhaul
Shpr/rcpt info	View	**Weight**	230.0 lbs.
Status	In transit		

Note: Appointments are required for residential deliveries. Please call the delivering Service Center for appointments and shipments requiring special handling such as liftgate service and limited access deliveries.

Date/Time		Activity	Location	Details
Mar 26, 2008	11:02 PM	**In transit**	CHICAGO HEIGHTS, IL	
	7:55 PM	In transit	TOLEDO, OH	
	10:02 AM	In transit	NEWBURGH, NY	
Mar 25, 2008	9:10 PM	Left origin	CHICOPEE, MA	
	3:44 PM	Picked up	NORTHAMPTON, MA	

E-mail results | Track more shipments/orders

Subscribe to tracking updates (optional)

Your name: Ken Tichy **Your e-mail address:** ken.tichy@siemens.com

E-mail address	Language	Exception updates	Delivery updates
	English	☐	☐
	English	☐	☐
	English	☐	☐
	English	☐	☐

Select format: ◉ HTML ○ Text ○ Wireless

Add personal message:

Not available for Wireless or non-English characters.

☑ By selecting this check box and the Submit button, I agree to these Terms and Conditions

Submit

IP7021529

BILL OF LADING

Mercer
(Name of Carrier)

TO: Consignee Intermountain Power Service Corp	FROM: Shipper **JMS FABRICATED S**
Street 850 West Brush Wellman Road	Street **647 Donohoe Road**
Destination Delta, Utah Zip Code [illegible]	Origin **Latrobe, PA** Zip C
Cust. PO# A07-008-410	Vehicle Number / EMERGENCY RESPC

Contact: Larry Christensen PH: (435) 864-6486

Delivers shall be made MONDAY - FRIDAY 0700 - 1600 hrs [illegible]

No. Shipping Units	+ HM	Kind of Packaging, Description of Articles, Special Marks and Exceptions	Weight (Subject to Correction)	Ra
24		Flat Backs	40,000#	
"LOAD MUST BE TARPED"				
Prepay & Add				

REMIT C.O.D. TO: ADDRESS

COD Amt: $

C.O.D. FEE: PREPAID ☐ COLLECT ☐ $

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight".

+Shipper's imprint in lieu of stamp; not a part of bill of lading approved by the Interstate Commerce Commission.

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding.

$_____ per _____

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:

The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

_____ (Signature of Consignor)

TOTAL CHARGES $

FREIGHT
Check Appropri
☐ Freight prepa

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of receipt by the carrier of the property described in the Original Bill of Lading, th in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above, which said carrier (the wo throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its r another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each pa all or any of said property, that every service to be performed hereunder, shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uni in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipm conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

"This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the a artment of Transportation."

SHIPPER [illegible] CARRIER [illegible]

IP7021530

CALL LOUISVILLE ON UNUSUAL DELAYS Order No._____

TO BE RETAINED BY CONSIGNEE

NON REVENUE BILL
Billing and Collection will be made on REVENUE BILL

MERCER TRANSPORTATION CO.
P.O. BOX 35610
1128 WEST MAIN STREET
Louisville, Kentucky 40232
Phone (502) 584-2301
Long WATS 1-800-626-5375

DELIVERY RECEIPT

Trip No. DWV26997

Pick-up Date 3-4-08

(Consignee's Name and Address)
CENTERMOUNTAIN POWER SERVICE CORP.
350 BRUSHWELLMAN RD.
DELTA UT.

(Shipper's Name and Address)
JMS FABRICATED SYSTEMS
647 DONOHOE RD
LATROBE PA

B/L NO. A07-608-410

Waybill dates, numbers and points of transfer of all previous carriers must be shown in this space. I.C.C. Ruling.

NO. PIECES	DESCRIPTION OF ARTICLES	WEIGHT
24	FLATBACKS Dimension of Material: Height____ Width____ Length____ Release Value $5,000 per ton unless otherwise specifically stated. Verified By Shipper____ And Consignee____	40,000

Received the above described property in good condition except as noted.
CUSTOMER SIGNATURE: X

PRESS FIRMLY, SIGN IN INK
PRINTED NAME: [illegible]

of Delivery	Delivery Driver	Unit No.
3-10-08	JEFFREY L DAVIS	10336

NOTICE: CONTRACTOR SETTLEMENTS WILL BE HELD IF SHORTAGES OR DAMAGES ARE NOT REPORTED TO LOUISVILLE, KY., BEFORE CONSIGNEE SIGNS THESE BILLS!

THANK YOU FOR THE OPPORTUNITY TO HAUL YOUR SHIPMENT.

CALL MERCER TO MOVE YOUR NEXT SHIPMENT 800-626-5375

TWO DECADES OF EXCELLENCE
"THE REASONABLE CHOICE"

PICK-UP OR DELIVERY DETENTION REPORT

LOADING/UNLOADING

Date ____ Day ____

Scheduled Time of Arrival ____ Time Spotted for Work ____

Actual Time of Arrival ____ Time Work Began ____

Person Notified ____ Time Work Completed ____

Time Released by Customer ____

Lunch or Non-Working Periods ____

Customer Signature/Title Driver Signature

CALL LOUISVILLE IF CUSTOMER DOESN'T SIGN

Remarks ____

COPIES: WHITE –LOUISVILLE OFFICE COPY
YELLOW –TO BE RETAINED BY CONSIGNEE
PINK –DRIVER'S COPY

CALL LOUISVILLE ON UNUSUAL DELAYS
1-800-626-5375

IP7021531

JMS FABRICATED SYSTEMS
647 DONOHOE ROAD
LATROBE, PA 15650

PH: 724-832-3640 FAX: 724-832-3680
E-MAIL: jims@jmsind.net

PACKING LIST

JMS Job #27-368

SHIP TO:

INTERMOUNTAIN POWER SERVICE CORP
850 WEST BRUSH WELLMAN ROAD
DELTA, UTAH 84624-9546

P.O. # A07-008-410

SHIP VIA: MERCER

QUANTITY ORDERED	QUANTITY SHIPPED	DESCRIPTION
48	24	Item # 1 DESC.: COMPLETE ELBOW ASSEMBLIES ABT DWG NO.: 07008-522-A00-0

IP7021532

From: "Tichy, Ken V O6473" <ken.tichy@siemens.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
Date: 3/4/2008 6:38 AM
Subject: RE: Shipments
Attachments: First Shipment 24 elbows 3-3-08.pdf

Attached is the packing list and bill of lading for the first shipment (24 elbows) which left Western PA yesterday. I think they should arrive by Friday. This shipment should give us some idea of what to expect for transit times.

Best Regards,

Kenneth V. Tichy, P.E.
Project Manager
Advanced Burner Technologies
A SIEMENS Company
271 Route 202/206
PO Box 410
Pluckemin, NJ 07978
ken.tichy@siemens.com
PHONE: 908.212.0571
FAX: 908.470.0479
CELL: 908.391.2175

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Tuesday, March 04, 2008 8:30 AM
To: Tichy, Ken V O6473
Subject: Re: Shipments

That will work. Let me know when items are shipped. Thanks

>>> "Tichy, Ken V O6473" <ken.tichy@siemens.com> 3/3/2008 7:43 AM >>>
Garry,

I patched together the shipping information below from some previous orders. Are there any reference numbers or a contact name other than yours you would like me to use? I believe all 48 elbows will be shipping this week. One shipment of 24 early in the week and one late in the week. Let me know if you have any comments to the information shown below.

Ship to:

Intermountain Power Service Corporation

850 West Brush Wellman Road

Delta, Utah 84624-9546

Deliveries shall be made Monday through Friday, 0700 through 1600 hrs local time.

Contact: Garry Christensen

Telephone (435) 864-6486

Best Regards,

Kenneth V. Tichy, P.E.

Project Manager

Advanced Burner Technologies

A SIEMENS Company

271 Route 202/206

PO Box 410

Pluckemin, NJ 07978

ken.tichy@siemens.com

PHONE: 908.212.0571

FAX: 908.470.0479

CELL: 908.391.2175

driver
Jeff Davis
304 - 629 - 1342

27-366
JMS Job#
3/4/08
Date

BILL OF LADING

Mercer
(Name of Carrier)

TO: Consignee Intermountain Power Service Corp
Street 850 West Brush Wellman Road
Destination Delta, Utah Zip Code 84624-9546
Cust. PO# A07-008-410

FROM: Shipper JMS FABRICATED SYSTEMS
Street 647 Donohoe Road
Origin Latrobe, PA Zip Code 15650
Vehicle Number
EMERGENCY RESPONSE PHONE NO

Contact: Garry Christensen PH: (435) 864-6486
Delivers shall be made MONDAY - FRIDAY 0700 - 1600 hrs local time

No. Shipping Units	+ HM	Kind of Packaging, Description of Articles, Special Marks and Exceptions	Weight (Subject to Correction)	Rate	CHARGES (for Carrier use only)
24		Flat-Backs	40,000#		
		"LOAD MUST BE TARPED"			
		Prepay & Add			

REMIT C.O.D. TO: ADDRESS

COD Amt $

C.O.D. FEE: PREPAID ☐ COLLECT ☐ $

"If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is 'carrier's or shipper's weight'"

+Shipper's imprint in lieu of stamp; not a part of bill of lading approved by the Interstate Commerce Commission.

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding.
$ PER

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor)

TOTAL CHARGES $

FREIGHT CHARGES
Check Appropriate Box:
☐ Freight prepaid ☐ Collect

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of receipt by the carrier of the property described in the Original Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder, shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classifications in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.
Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.
"This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation."

SHIPPER Jane Ferro
PER

CARRIER
PER DATE

Permanent post office address of shipper

+ MARK WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS.
For further details on SHIPPING HAZARDOUS MATERIALS see Federal Regulations 49 CFR, Part 172.

IP7021535

JMS FABRICATED SYSTEMS
647 DONOHOE ROAD
LATROBE, PA 15650

PH: 724-832-3640 FAX: 724-832-3680
E-MAIL: jims@jmsind.net

PACKING LIST

JMS Job #27-368

SHIP TO:

INTERMOUNTAIN POWER SERVICE CORP
850 WEST BRUSH WELLMAN ROAD
DELTA, UTAH 84624-9546

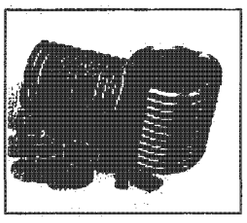
P.O. # A07-008-410

SHIP VIA: MERCER

QUANTITY ORDERED	QUANTITY SHIPPED	DESCRIPTION
48	24	Item # 1 DESC.: COMPLETE ELBOW ASSEMBLIES ABT DWG NO.: 07008-522-A00-0

Heli-Coil Screw Thread Inserts

Go to e-Catalog



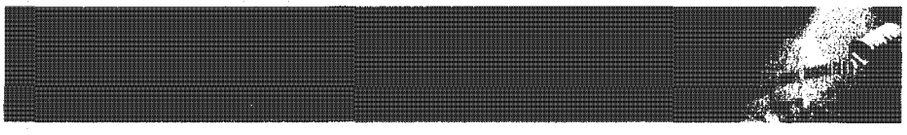
HeliCoil
Screw Thread Inserts

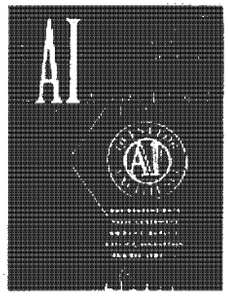
Heli-Coil® inserts are precision formed screw thread coils of stainless steel wire having a diamond shaped cross section.

When they are installed into Heli-Coil® tapped holes, they provide permanent conventional 60' internal screw threads that accommodate any standard bolt or screw.

All related tooling such as STI Taps, hand and power installation tools, gages and tang break-off tools are also available. Typical Applications would include: Automotive,Communication, Aerospace, Military and the Defense industries

HeliCoil AeroSpace Brochure
HeliCoil RoHS Statement
HeliCoil DFARS Statement
HeliCoil Definition Video





AI's readers pick Heli-Coil in the Best of the Best among automotive suppliers, 3 years in a row.

- July 1998
- July 1999
- July 2000

Heli-Coil is the approved Screw-Lock Screw Thread Insert source for Boeing Aircraft per specification **BACI12AE rev B.**

TANGLESS® is a registered trademark of Advanex Inc.

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AP&F suggested next time to have these for elbows and isolation gate cover

IP7021537

Intermountain Generating Station
Unit 2 Burner Injector and Burner Elbow Replacement

Project Description
Replacement of all 48 burner elbows and burner injectors.

The existing burner injectors and burner elbows will be replaced with new injectors and sweep elbows provided by Siemens. The replaced injectors and elbows will be removed from the unit to a designated area. Burners are located on the 5th through the 8th level on the unit.

Scope of Work.:

1. Removal of old burner elbow on all 48 burners. (Just like 2006 outage)
   a. Removal of welded TC from burner pipe.
   b. Install needed rigging for burner pipe support.
   c. Burner elbow removal by row.
   d. Removal of old elbows to designated area outside of unit.
   e. Clean flange mating surface.

2. Removal of old burner injector on all 48 burners. (Just like 2006 outage, 2000 # each)
   a. Removal of lagging and insulation needed to unbolt injector.
      i. Can happen at earlier sequence.
   b. Unbolt injector and pull out of burner. Clean ash before pulling injector out.
   c. Removal of old injectors to designated area outside of unit.

3. Clean up burner casing prior to installation of new injector.
   a. Guzzle up all ash in burner casing and all ash that has fallen into burner secondary air opening.
   b. Repair burner casings as needed. ** Inspection 2 years ago showed damage on several burner casings per row. We will not know the extent of repairs needed until injector pulled.

4. Installation of 48 new burner injectors.
   a. Unload upon arrival and mobilize new burner injectors to appropriate burner rows.
   b. Install new burner injectors by sliding into burner casing and bolting up to burner housing with gasket material.
   c. Install insulation and lagging. (Can be installed after elbow installation)

5. Installation of 48 new flat back burner elbows.
   a. Unload upon arrival and mobilize new burner flat back elbows to appropriate burner rows.
   b. Position and bolt up 48 new burner elbows with gasket material.

IP7021538

6. General cleanup following completion of installation.

7. Painting
   a. After completion of installation (April 21, 2008 at 07:00) IPSC painters to prep elbows and paint. Stencil elbows for identification. i.e. C-1, C-2,....

8. Schedule:
   a. Injectors and flat back elbows:
      i. Start of work: March 28, 2008 or as soon as required materials are on site.
      ii. Completion: Installation and inspections of burner injector and elbows by April 21, 2008 at 07:00

9. Materials:
   a. Materials to be supplied by Siemens.
      i. Burner fuel injector.
      ii. Flat back elbows with x-vane.
   b. Material s supplied by IPSC.
      i. Gasket material for burner elbow flanges.
      ii. Gasket material for injector to burner housing.
      iii. 253 MA material to repair burner casings.
   c. The contractor shall be responsible for providing weld rod, all additional parts, tools, and/or materials including insulation and lagging required for the completion of this job.

IP7021539

From: Will Lovell
To: Christensen, Garry
Date: 4/11/2008 10:34 AM
Subject: BURNER COST

I paid AP&F $58,197.96 on 4/10/08.

total $132,889 up thru 9th 53.16%

AP&F CONSTRUCTION
excellence in action

03/17/08

INTERMOUNTAIN POWER SERVICE CORP
ATTENTION: ACCOUNTS PAYABLE
850 W. BRUSH WELLMAN ROAD
DELTA, UTAH 84624-9546

INVOICE# I544-01

REFERENCE: REPLACE BURNERS AND ELBOWS

RELEASE # 544

LABOR	$2,440.07
SUBCONTRACTORS:	
THERMAL TECH - 03/10/08	$1,865.50
THERMAL TECH - 03/11/08	$1,865.50
THERMAL TECH - 03/12/08	$1,865.50
THERMAL TECH - 03/13/08	$587.00
Mark-up	$494.68

Pd 3/24/08

AUTHORIZATION # 245720
RELEASE #
CONTRACT #
ER #
MIT BY / /

VENDOR # REMIT TO #
VOUCHER #
AMT PAID $
CHECK NO DUE DATE / /

TOTAL	$9,118.25
TAX	$0.00
TOTAL DUE THIS INVOICE	$9,118.25

RECEIVED
MAR 21 2008
IPSC ACCOUNTING

1230 West 2600 South, Woods Cross, UT 84087
P 801.397.2763 F 801.397.1899
www.apfpower.com

IP7021541

AP&F CONSTRUCTION
excellence in action

03/17/08

INTERMOUNTAIN POWER SERVICE CORP
ATTENTION: ACCOUNTS PAYABLE
850 W. BRUSH WELLMAN ROAD
DELTA, UTAH 84624-9546

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THERMAL TECH - 03/13/08	$587.00
Mark-up	$494.68

PAYMENT AUTHORIZATION #_____
WORK RELEASE #_____
SERVICE CONTRACT #_____
WORK ORDER #_____
INVOICE #_____
AMOUNT $_____
DATE TO SUBMIT BY_____/_____/_____

VENDOR #_____ REMIT TO #_____
VOUCHER #_____
AMT PAID $_____
CHECK NO_____ DUE DATE

RECEIVED
MAR 21 2008
IPSC ACCOUNTING

TOTAL	$9,118.25
TAX	$0.00
TOTAL DUE THIS INVOICE	$9,118.25

1230 West 2600 South, Woods Cross, UT 84087
P 801.397.2763 F 801.397.1899
www.apfpower.com

IP7021542

THERMAL TECH INSULATION . .RVICE, LLC

DAILY EXTRA WORK ORDER

PROJECT: IPP Unit 2

DATE: 3-10-08

DESCRIPTION OF WORK: Remove Lagging And Insulation.

P.O. # 071544

LABOR

Class	Name	STRAIGHT TIME Hours	STRAIGHT TIME Rate	OVERTIME Time and a half Hours	OVERTIME Time and a half Rate	OVERTIME Double Time Hours	OVERTIME Double Time Rate	Amount
Fore	L. Crosland	10						616.50
Mech	L. Jacobsen	10						587.00
Mech	D. Thomas	10						587.00

MATERIAL

Quantity	Description	Unit	Amount

1865.50

EQUIPMENT SUMMARY

Name	Hours	Rate	Amount
Truck	10		75.00

Doug Kline

Approved By:

Company:

IP7021543

. P. & F. CONSTRUCTION

DAY: Tuesday
DATE: 3/11/08

JOB NO:

SHIFT: DAYS / NIGHTS

COST CODE

	NAME	CRAFT	Stageing Burner 20 Elbows															TOTAL		
			544																	
			ST	OT	DT	ST	OT	DT	ST	OT	DT	ST	OT	DT	ST	OT	DT	ST	OT	DT
1		BMGF																		
2	M. Peterson	BMF	10																	
3		BMF																		
4		QC																		
5		BMAF																		
6	N. Coombs	BM	10																	
7		BM																		
8		BM																		
9		BM																		
10		BM																		
11		BM																		
12		BM																		
13		BM																		
14		BM																		
15		BM																		
16		BM																		
22		BMAPP																		
23		BMAPP																		
26		LAB																		
27		LAB																		
28		OPER																		
29		SAFETY																		
	TRUCK	1																		
	ELEC. WELDER																			

APPROVED BY Gary L [illegible]

IP7021544

INSULATION SERVICE, LLC

DAILY EXTRA WORK ORDER

PROJECT: IPP Unit 11

DATE: 3-11-08

DESCRIPTION OF WORK: Remove Lagging Burners

P.O. # OTF 544

LABOR

Class	Name	STRAIGHT TIME Hours	STRAIGHT TIME Rate	OVERTIME Time and a half Hours	OVERTIME Time and a half Rate	OVERTIME Double Time Hours	OVERTIME Double Time Rate	Amount
Foire	L. Crosland	10						616.50
Mech	L. Jacobsen	10						582.00
Mech.	D. Thomas	10						582.00

MATERIAL

Quantity	Description	Unit	Amount

1865.50

EQUIPMENT SUMMARY

Name	Hours	Rate	Amount
Truck	10		75.00

Max Peters
Approved By:

MP&F
Company:

IP7021545

A. P. & F. CONSTRUCTION

DAY: Wednesday
DATE: 3 12 08

JOB NO:

SHIFT: DAYS / NIGHTS

COST CODE

	NAME	CRAFT	Staging Burner ST	OT	DT	Elbows ST	OT	DT	Mob ST	OT	DT	ST	OT	DT	ST	OT	DT	TOTAL ST	OT	DT
			544			550														
1		BMGF																		
2	M Peterson	BMF	6			4														
3		BMF																		
4		QC																		
5		BMAF																		
6	M. Coombs	BM	4			6														
7		BM																		
8		BM																		
9		BM																		
10		BM																		
11		BM																		
12		BM																		
13		BM																		
14		BM																		
15		BM																		
16		BM																		
22		BMAPP																		
23		BMAPP																		
26		LAB																		
27		LAB																		
28		OPER																		
29		SAFETY																		
	TRUCK	1																		
	ELEC. WELDER																			
	Forklift	1				8														
	2 Ton Truck																			

APPROVED BY [signature]

IP7021546

THERMAL TECH INSULATION SERVICE, LLC

DAILY EXTRA WORK ORDER

PROJECT: IPP Unit 2.

DATE: 3-12-08

DESCRIPTION OF WORK: Burner Logging

P.O. # 071544

LABOR

Class	Name	STRAIGHT TIME Hours	STRAIGHT TIME Rate	OVERTIME Time and a half Hours	OVERTIME Time and a half Rate	OVERTIME Double Time Hours	OVERTIME Double Time Rate	Amount
Fore	L. Crosland	10						616.50
Mech.	L. Jacobsen.	10						587.00
Mech.	D. Thomas	10						587.00

MATERIAL

Quantity	Description	Unit	Amount

1865.50

EQUIPMENT SUMMARY

Name	Hours	Rate	Amount
Truck	10		75.00

Approved By: [signature]

Company: APF

IP7021547

P. & F. CONSTRUCTION

DAY: Thursday
DATE: 3 13 08
JOB NO:
SHIFT: DAYS / NIGHTS
COST CODE

			Mob			Burner - Mono Rail												TOTAL		
			550			544														
	NAME	CRAFT	ST	OT	DT	ST	OT	DT	ST	OT	DT	ST	OT	DT	ST	OT	DT	ST	OT	DT
1		BMGF																		
2	M Peterson	BMF	6			4														
3		BMF																		
4		QC																		
5		BMAF																		
6	M Combs	BM	— Reported off sick —																	
7		BM																		
8		BM																		
9		BM																		
10		BM																		
11		BM																		
12		BM																		
13		BM																		
14		BM																		
15		BM																		
16		BM																		
22		BMAPP																		
23		BMAPP																		
26		LAB																		
27		LAB																		
28		OPER																		
29		SAFETY																		
	TRUCK	1																		
	ELEC. WELDER	1																		
	Forklift	1																		

APPROVED BY Kelly Howard

IP7021548

ERMAL TECH INSULATION SERVICE, LLC

D. LY EXTRA WORK ORDER

OJECT: IPP Unit 2

DATE: 3-13-08

IPTION OF WORK: Burners

P.O. # 07P 544

LABOR

Class	Name	STRAIGHT TIME Hours	STRAIGHT TIME Rate	OVERTIME Time and a half Hours	OVERTIME Time and a half Rate	OVERTIME Double Time Hours	OVERTIME Double Time Rate	Amount
mech	L. Jacobsen	10						

MATERIAL

Quantity	Description	Unit	Amount

$587.00

EQUIPMENT SUMMARY

Name	Hours	Rate	Amount

Approved By:

Company: APF

IP7021549

Kubota METAL CORPORATION
25 Commerce Road, Orillia, Ontario, Canada L3V 6L6
Phone (705) 325-2781 Fax (705) 325-5887

ALLOY DATA SHEET
HE

HEAT RESISTANT ALLOY

REVISION: 04/91

DESCRIPTION

HE alloy is a two phase Fe-Cr-Ni alloy in which 28% chromium provides good oxidation resistance at temperatures up to 2000 °F. Nickel is higher than in the HC and HD grades resulting in moderate strength without seriously reducing resistance to sulphurous gases. Long term service of HE alloy at 1300 to 1500 °F may result in the transformation of the ferrite in the austenite/ferrite matrix to sigma phase, causing embrittlement of the alloy at room temperature.

COMPOSITION

	C	Mn	Si	Cr	Ni	Mo	P	S
Min %	0.3	0.3	0.35	26	8		-	-
Max %	0.4	1.0	2.0	30	11	0.5	0.04	0.04

APPLICATIONS

Grate bars, dampers, recuperators, molten salt pots , furnace skids and rails, rabble blades, tuyeres, slag tapping blocks, burner nozzles

PRODUCT FORMS

Horizontal and vertical centrifugal castings; static castings.

PHYSICAL PROPERTIES

Density (lbs/in^3)	0.277	
Melting Point(°F)	2650	
Thermal Conductivity	8.5	@ 212°F
(Btu/h/ft^2/ft/°F)	12.4	@ 1000°F
	13.5	@ 1200°F
	14.6	@ 1400°F
	15.9	@ 1600°F
	16.9	@ 1800°F
	18.2	@ 2000°F
Thermal Expansion	9.6	@ 70-1000°F
	9.9	@ 70-1200°F
(10^{-6}in/in °F)	10.2	@ 70-1400°F
	10.5	@ 70-1600°F
	10.8	@ 70-1800°F
	11.1	@ 70-2000°F
Magnetic Permeability	1.3-2.5	

CARBURIZATION RESISTANCE

(Gas-1064 hours @ 1760°F)

ALLOY GRADE	WEIGHT GAIN mg/mm^2
H C	0.69
H D	0.60
H E	**0.54**
H F	0.81

MECHANICAL PROPERTIES (Typical Values)

		70	1400	1600	1800	2000 °F	ASTM Spec A297	
U.T.S.	K.S.I.	95					85	Min.
Y.S.	K.S.I.	45					40	Min.
Elong.	%	20					9	Min.

IP7021550

SERVICE TEMPERATURE

The alloy is suitable for service at temperatures up to approximately 2000 °F.

COMPARATIVE OXIDATION RATES (mm / year)
(500 hour cyclic tests)

GRADE	1832	1922	2012	2102	°F
H D	<0.1	0.25	1.3	5.2	
H E	**<0.1**	**0.26**	**1.05**	**4.3**	
H F	0.86	1.8	3.6	6.7	

WELDABILITY

HE alloy may be welded by the SMAW, GMAW and GTAW processes.

CREEP-RUPTURE PROPERTIES

Long term creep-rupture properties were extrapolated from Larson-Miller Parameter versus stress plots.

RUPTURE-STRESS-KSI

HOURS		1400	1500	1600	1700	1800	°F
100	AVG.	11	7.6	5.3	3.6	2.5	
1,000	AVG.	7.7	4.9	3.1	2.0	1.3	
10,000	AVG.	4.8	2.9	1.8	1.1	0.66	
100,000	AVG.						

CREEP-STRESS-KSI

%/HOUR		1400	1500	1600	1700	1800	1900	2000	°F
0.0001	AVG.	4.0	3.1	2.4	1.8	1.4	0.75	0.4	

Note Creep-rupture stresses are subject to periodic revisions as the results from long term tests become available.

RELATED SPECIFICATIONS

ASTM: A 297 (HE); A608 (HE 35)
Nearest wrought grade: AISI 312. The composition of the wrought grade differs from that of the cast alloy and has different properties. The cast alloy designation should always be used to identify castings.

HEAD OFFICE, FOUNDRY & INTERNATIONAL SALES
Kubota Metal Corporation, Fahramet Division
25 Commerce Road, P.O. Box 1700,
Orillia, Ontario, Canada, L3V 6L6.
Phone (705) 325-2781
Fax (705) 325 5887

ROLLED ALLOYS
The Better Metal People™

DATA SHEET
RA 253 MA®
UNS S30815

THE GLOBAL LEADER IN SPECIALTY ALLOYS

HEAT RESISTANT ALLOYS

IP7021552

ROLLED ALLOYS
The Better Metal People™

RA 253 MA DATA SHEET

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The data and information in this printed matter are believed to be reliable. However, this material is not intended as a substitute for competent professional engineering assistance which is a requisite to any specific application. Rolled Alloys makes no warranty and assumes no legal liability or responsibility for results to be obtained in any particular situation, and shall not be liable for any direct, indirect, special, or consequential damage therefrom. This material is subject to revision with our prior notice.

ROLLED ALLOYS
The Better Metal People™

FEATURES

- Excellent oxidation resistance through 2000°F
- High creep-rupture strength
- Good weldability
- Alkali salt hot corrosion resistance

APPLICATIONS

- Coal burners in power boilers
- Fluidized bed combustor cyclones
- Kilns, rotary calciners
- Furnace fans and dampers
- Superheater tube hangers
- Recuperators
- Thermal oxidizers
- Radiant tubes for steel coil and aluminum annealing
- Expansion bellows
- Land based gas turbine components

CHEMICAL COMPOSITION, %

	Min	Max
Chromium (Cr)	20.0	22.0
Nickel (Ni)	10.0	12.0
Silicon (Si)	1.40	2.00
Carbon (C)	0.05	0.10
Nitrogen (N)	0.14	0.20
Cerium (Ce)	0.03	0.08
Manganese (Mn)	—	0.80
Phosphorus (P)	—	0.040
Sulphur (S)	—	0.030
Iron (Fe)	Balance	

SPECIFICATIONS

UNS S30815 W.Nr./EN 1.4835
ASME Section IX P-No. 8, Group No. 2
ASME
SA-182(F45), SA-213, SA-240,
SA-249, SA-312, SA-358, SA-409, SA-479
ASTM
A167, A 182(F45), A 213, A 240,
A 249, A 276, A 312, A 358, A 409, A 473,
A 479, A 480, A 813 and A 814

PERFORMANCE PROFILE

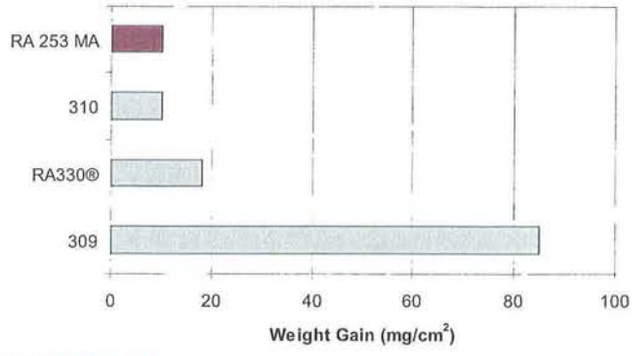
RA 253 MA is a lean austenitic heat resistant alloy with high strength and outstanding oxidation resistance. It offers an excellent combination of high creep strength along with excellent resistance to oxidation, sulfidation, and erosion at high temperatures in an alloy containing just 11% nickel. Because of its lean chemistry, RA 253 MA is very economical compared to most heat resistant alloys.

RA 253 MA obtains its heat resistant properties by tight control of micro alloy additions. The use of cerium in combination with silicon results in superior oxidation resistance to 2000°F (1093°C). Nitrogen, carbon, and cerium combine to provide creep rupture strength that is double that of type 310 stainless at 1600°F (871°C).

OXIDATION

RA 253 MA has exceptional oxidation resistance up to about 2000°F (1093°C). Above this temperature, its oxidation resistance drops off. A combination of rare earths and silicon is responsible for the excellent oxidation resistance of this 21% Cr alloy. The rare earths increase diffusion rate of the silicon to the scale-metal interface. This promotes the development of a continuous SiO_2 subscale, which in turn slows further oxide growth. Rare earth metals also improve adhesion and elasticity of the oxide scale, even under cyclic conditions. These rare earths, primarily cerium, increase the number of nucleation sites for the oxide. This results in a fine grained chromia and silica scale.

2000°F Cyclic Oxidation Testing



SULFIDATION

RA 253 MA has good resistance to hot SO_2 bearing atmospheres, meaning sulfidation under oxidizing conditions. However, RA 253 MA is not resistant to reducing sulfidizing atmospheres, when sulfur is present as H_2S. Note that even though the atmosphere may be oxidizing, the partial pressure of oxygen can be extremely low under solid sulfate deposits. Local sulfidation attack under the deposit can then occur.

Table 1 - Sulfidation Resistance

Alloy	Depth of Atttack	
RA 253 MA	8 mils	(0.20 mm)
RA333®	8 mils	(0.20 mm)
309 Stainless	18 mils	(0.46 mm)
310 Stainless	20 mils	(0.51 mm)
RA330	24 mils	(0.61 mm)

Test samples exposed to an atmosphere containing 13.6% SO_2 at 1850°F (1010°C) for 1860 hours exhibited the following depth of intergranular oxidation and sulfidation.

CARBURIZATION

RA 253 MA has only fair resistance to carburization. Carburization resistance is primarily dependent on the nickel content of a material. Service experience has shown 309 stainless to be slightly better.

Coupons were exposed for 15 weeks of simulated bake cycles 1700-1950°F (930-1065°C) in "green mix" used for production of carbon electrodes. Room temperature tensile tests showed the following ductility:

Table 2 - Carburization Resistance

Alloy	Nickel Weight %	Retention of Ductility, % Reduction of Area
RA 253 MA	11	0.5%
302B Stainless	9	Nil Ductility
800H	32	1.4%
RA330	35	16.6%

HOT SALT CORROSION

Sodium and potassium neutral or chloride salts cause hot corrosion of heat resistant alloys. Traditionally the most resistant alloys have been considered to be those highest in nickel. Exposure in salts for heat treating high speed steel indicate that RA 253 MA may be comparable to alloy 600.

Table 3 - Hot Salt Corrosion

Alloy	Nickel % Weight	Depth of IGA mils (mm)
RA 253 MA	11	6.9 (0.18 mm)
Alloy 600	76	7.5 (0.19 mm)
309 Stainless	13	12.5 (0.32 mm)
RA330	35	13.8 (0.35 mm)

Plate samples exposed 210-252 cycles in preheat salts 1300 and 1500°F (704 and 816°C), high heat salt 2200°F (1200°C), quench in 1100°F (593°C) salt.

IP7021555

Metallic pots for neutral heat treating salts are commonly made of 309 or RA330. The service life of the pot is primarily determined by maintenance, not alloy. Pots must be desludged and rectified regularly. When changing pots, every bit of old spilled salt must be removed from the furnace refractory.

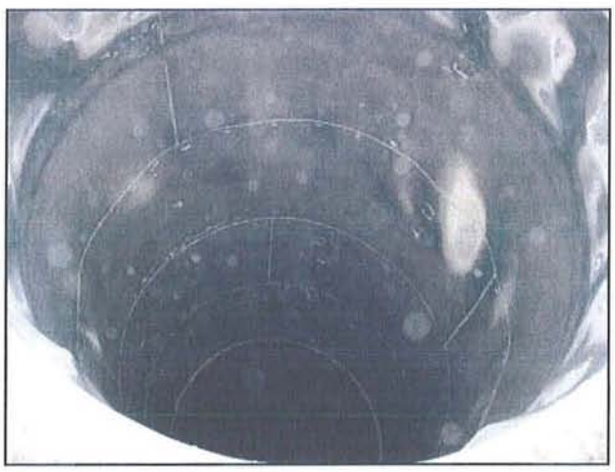
CREEP-RUPTURE PROPERTIES

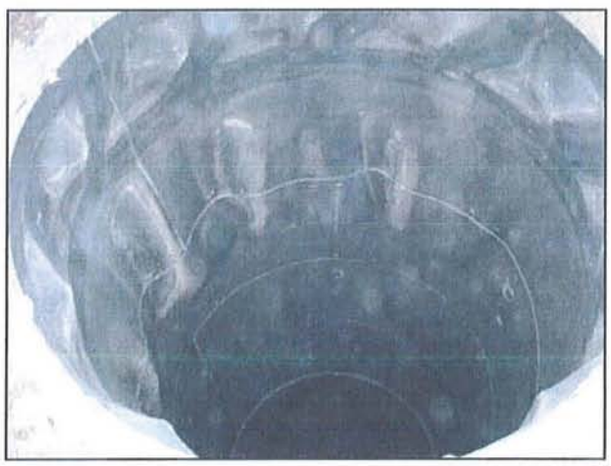
RA 253 MA maintains excellent creep rupture strength up to its upper use limit of 2000°F. Additions of nitrogen, carbon, and cerium all enhance its high temperature strength in comparison to 309 or 310 stainless steels. Above 1600°F, RA 253 MA offers twice the creep strength of types 309 and 310 stainless steel and is actually stronger than the 35% nickel alloy RA330. Over 2.6 million hours of creep and rupture testing were used to generate the graphs and tables in this section. Some tests were run as long as 30,000 hours.

Table 4 - Average Stress for Minimum Creep Rate

Temperature	0.0001%/hr ksi (MPa)	0.00001%/hr ksi (MPa)
1100°F (593°C)	18 (125)	12 (82.7)
1200°F (649°C)	11.6 (80)	8.2 (56.5)
1300°F (704°C)	7.7 (53.1)	5.7 (39.3)
1400°F (760°C)	5.0 (34.5)	3.8 (26.2)
1500°F (816°C)	3.35 (23.1)	2.55 (17.6)
1600°F (871°C)	2.3 (15.9)	1.75 (12.1)
1700°F (927°C)	1.5 (10.3)	1.15 (7.93)
1800°F (982°C)	0.89 (6.14)	0.55 (3.79)
1900°F (1036°C)	0.49 (3.39)	0.32 (2.21)*
2000°F (1093°C)	0.25 (1.72)*	0.15 (1.03)*

*extrapolated





Figures 1 & 2 - RA 253 MA dip tubes in a circulating fluidized bed boiler. These tubes are roughly 8-1/2 feet in diameter and 23 feet long. This power plant originally used type 310 stainless, which required replacement due to distortion shown below after 2 to 3 years of service. RA 253 MA tubes average 5 to 6 years life. These photos were taken after 6 years of service. Operating temperatures are typically 1600°F.

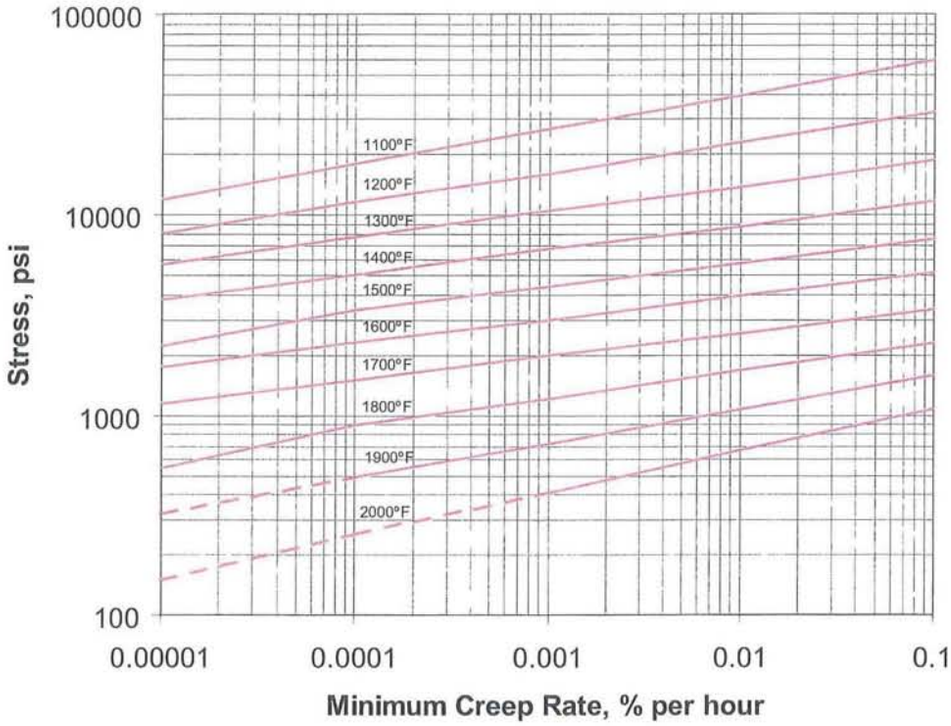
Table 5 - Average Stress to Rupture in Indicated Times

Temperature	1000 hrs ksi (MPa)	10,000 hrs ksi (MPa)	100,000 hrs ksi (MPa)
1100°F (593°C)	32 (221)	22 (152)	15 (103)
1200°F (649°C)	23 (159)	14 (96.5)	8.7 (60.0)
1300°F (704°C)	16 (110)	8.5 (58.6)	4.6 (31.7)
1400°F (760°C)	9.2 (63.4)	5.2 (35.9)	2.9 (20.0)
1500°F (816°C)	6.6 (45.5)	3.75 (25.9)	2.1 (14.5)
1600°F (871°C)	4.4 (30.3)	2.50 (17.2)	1.45 (10.0)
1700°F (927°C)	2.8 (19.0)	1.65 (11.4)	0.97 (6.69)
1800°F (982°C)	1.85 (12.8)	1.15 (7.93)	0.7 (4.83)
1900°F (1036°C)	1.35 (9.31)	0.86 (5.93)	0.54 (3.72)*
2000°F (1093°C)	1.03 (7.03)	0.68 (4.69)	0.44 (3.03)*

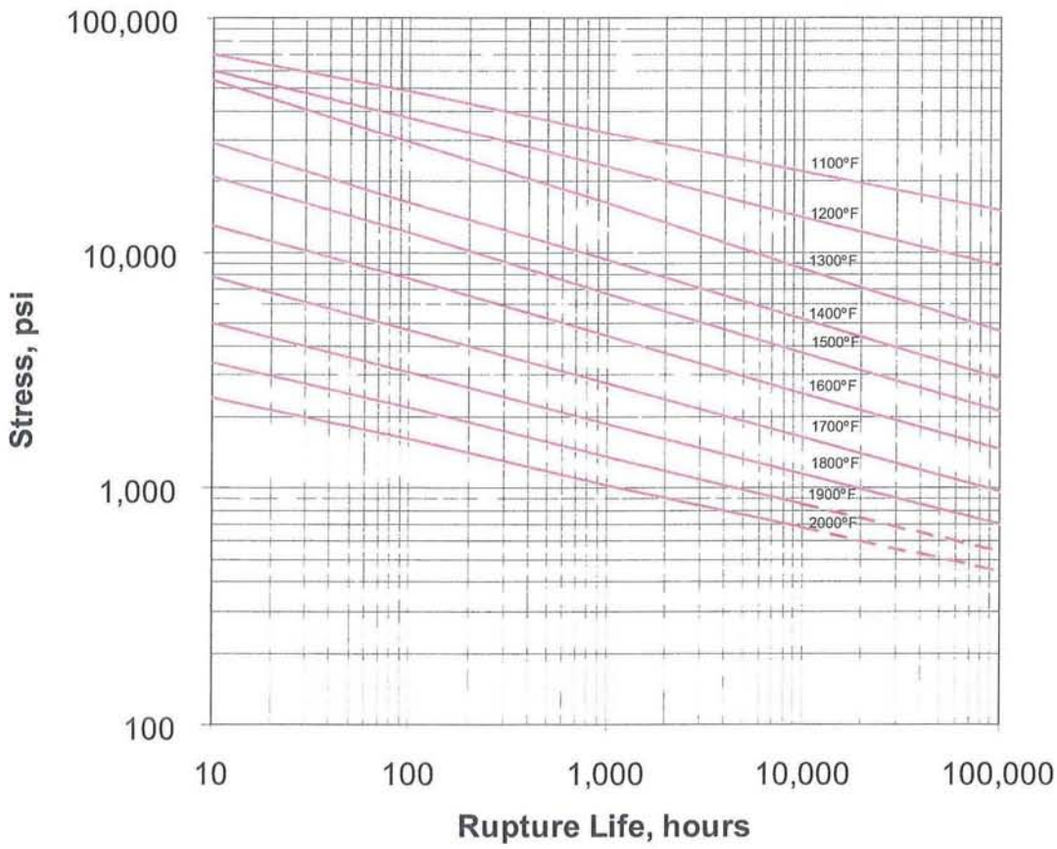
*extrapolated

IP7021556

AVERAGE STRESS FOR MINIMUM CREEP RATE



AVERAGE STRESS TO RUPTURE IN INDICATED TIMES



SIGMA PHASE EMBRITTLEMENT

Like other high chromium austenitic stainless steels, RA 253 MA loses room temperature toughness and ductility after long term exposure to the 1100 - 1600°F (600 - 870°C) temperature range. The effect is primarily on room temperature properties. While operating in the creep-rupture range the metal will have greater ductility and toughness. Charpy impact values after aging at intermediate temperatures are provided in Table 6 for RA 253 MA alloy and type 310 stainless steel for reference.

Table 6 - Aged Charpy V-notch Impact Properties

Alloy	Aging Temperature	Time Hours	Impact Strength ft-lbs (J)
RA 253 MA	Annealed Condition	-	110 (149)
	1292 °F (700 °C)	20,000	3 (4)
	1472 °F (800 °C)	20,000	4 (5)
	1652 °F (900 °C)*	20,000	42 (57)
310 Stainless	Annealed Condition	-	69 (94)
	1292 °F (700 °C)	20,000	3 (4)
	1472 °F (800 °C)	20,000	3 (4)
	1652 °F (900 °C)	20,000	27 (36)

At 1652 °F, charpy values increased versus 10,000 hour exposure

PHYSICAL PROPERTIES

Table 7 - Physical Properties

Density	0.282 lb/in³	7800 kg/m³
Melting Range	2500-2610°F	1370-1435°C
Magnetic Permeability	μ = 1.01 at H = 1000 Oersted	

Table 8 - Coefficient of Thermal Expansion (CTE) from 68°F (20°C)

Temperature	in/in °F x 10^{-6}	m/m °Cx10^{-6}
200 °F (93 °C)	9.06	16.3
400 °F (204 °C)	9.34	16.8
600 °F (316 °C)	9.59	17.3
800 °F (427 °C)	9.81	17.7
1000 °F (538 °C)	9.97	17.9
1200 °F (649 °C)	10.14	18.3
1400 °F (760 °C)	10.3	18.5
1600 °F (871 °C)	10.5	18.9
1800 °F (982 °C)	10.8	19.4

Table 9 - Thermal Conductivity & Specific Heat

Temperature	Thermal Conductivity		Specific Heat	
	Btu · ft/ft² · hr °F	W/m · K	Btu/lb · F	J/Kg · K
68 °F (20 °C)	8.38	14.5	0.105	440
400 °F (204 °C)	10.1	17.5	0.117	490
800 °F (427 °C)	11.7	20.2	0.130	544
1200 °F (649 °C)	13.0	22.5	0.142	595
1400 °F (760 °C)	14.0	24.2	0.149	624
1800 °F (982 °C)	16.6	28.7	0.164	687

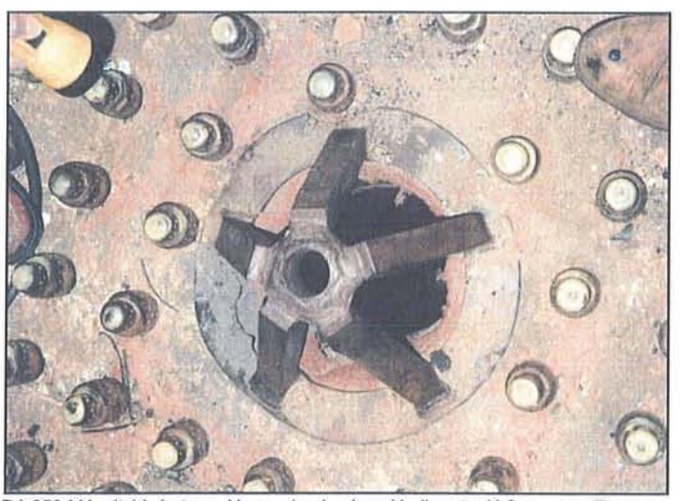
Table 10 - Electrical Resistivity

Temperature	ohm · circ mil/ft	microhm · m
68 °F (20 °C)	505	0.84
400 °F (204 °C)	622	1.03
800 °F (427 °C)	745	1.24
1200 °F (649 °C)	830	1.38
1400 °F (760 °C)	851	1.41
1800 °F (982 °C)	871	1.45

MECHANICAL PROPERTIES

Table 11 - Minimum Tensile Properties (ASTM A 240)

Ultimate Tensile Strength	87,000 psi (600 MPa)
0.2% Yield Strength	45,000 psi (310 MPa)
Elongation, %	40
Reduction of Area, %	50
Hardness	95 Rockwell B (Max)



RA 253 MA witch's hat used in a pulverized coal boiler at a U.S. paper mill to protect an ash chute coming off the boiler. RA 253 MA was selected for its resistance to oxidation, sulfidation, and abrasion resistance in the process temperatures.

Table 12 - Typical Elevated Temperature Tensile Properties

Temperature °F (°C)	Ultimate Tensile Strength ksi (MPa)	0.2% Yield Strength ksi (MPa)	% Elongation	Reduction of Area %
122 (50)	96.2 (663)	44.2 (305)	51	68
212 (100)	90.2 (622)	39.3 (271)	48	65
392 (200)	83.8 (578)	32.2 (222)	46	65
572 (300)	82.4 (568)	29.3 (202)	46	64
752 (400)	79.7 (550)	29.1 (201)	46	60
932 (500)	75.7 (522)	25.5 (176)	44	62
1112 (600)	69.0 (476)	24.2 (167)	43	63
1292 (700)	56.4 (389)	23.0 (159)	44	58
1472 (800)	36.9 (254)	21.5 (148)	—	76
1562 (850)	24.8 (171)	14.6 (101)	—	88
1652 (900)	18.9 (130)	11.6 (80)	—	92
1832 (1000)	10.8 (74.5)	6.2 (42.7)	—	97
2012 (1100)	9.4 (64.8)	4.0 (27.6)	—	97
2192 (1200)	3.7 (25.5)	2.0 (13.8)	—	99

Data for 1562°F (850°C) and above are from a single heat, other data is an average of 2 to 5 heats
Note: Above approximately 1000°F (540°C), short time tensile properties are not a suitable criteria for design. At these temperatures, metals are not elastic and deform slowly over time. Design calculations should utilize time dependent properties such as creep or rupture data.

Table 13 - Poisson's Ratio

Temperature	psi x 10^{-6}	GPa
68°F (20°C)	29.0	200
400°F (204°C)	26.8	185
800°F (427°C)	24.4	168
1200°F (649°C)	21.7	150
1400°F (760°C)	20.2	139
1800°F (982°C)	17.6	121

FABRICATION

Welding

RA 253 MA should be welded with matching welding consumables, which are referred to as RA 253 MA. These are carried in inventory by Rolled Alloys in bare wire for GMAW and GTAW processes, covered electrodes for SMAW, and flux core wire for the FCAW process. Use of the matching filler ensures that the weld joint matches the strength and corrosion resistance of the RA 253 MA base metal. Use of columbium containing filler metals, such as alloy 82, is not suggested due to embrittling phases formed with welding RA 253 MA.

RA 253 MA base metal is listed in ASME Section IX as P group 8.

Preheating and post-heating are not required for welding RA 253 MA. The chemistry of RA 253 MA welding wire and covered electrodes is balanced to contain about 4 to 12 Ferrite Number. This ferrite provides RA 253 MA weld fillers excellent resistance to hot cracking. In that respect, RA 253 MA behaves like other stainless weld fillers, such as 309. The unique addition of cerium to RA 253 MA, both in the base metal and in the weld fillers, is to enhance oxidation resistance. Cerium also makes the weld bead appear a little rough. This is characteristic of weld fillers containing rare earths and is not amenable to improvement by welding procedure. While this has not been a problem in service, a few customers prefer to weld RA 253 MA with RA333 weld fillers.

Interpass temperatures should be kept below 300°F to minimize the likelihood of solidification cracking. Maintaining a low welding heat input with a maximum of 1.5 kJ/mm is suggested.

Shielded Metal Arc Welding (SMAW)

RA 253 MA-17 AC/DC titania electrodes (UNS W30816) may be used with either alternating current or with direct current. For DC welding use reverse polarity (electrode positive). Maintain the arc length as short as possible. A short arc minimizes loss of cerium through the arc and improves penetration. Stringer beads with only a slight weave, not more than twice the electrode diameter are preferred. Starts and craters should be filled in to minimize the possibility of cracking.

All welding flux must be removed from each deposit, between passes and after the final pass. Residual welding flux may corrode the material when placed in high temperature service.

Table 14 - Typical SMAW Parameters

Electrode Diameter	Amperage	Volts
3/32 inch	45-70	24-30
1/8 inch	70-110	24-30
5/32 inch	100-140	24-30

The lower end of the current range is used for out-of-position welding.

Table 15 - Typical Chemistry SMAW weld deposit, Weight %

C	Si	Mn	Cr	Ni	N
0.08	1.5	0.7	22.0	10.5	0.18

RA 253 MA electrodes and flux cored wires are packaged in hermetically sealed containers to assure freedom from contamination and moisture absorption. After opening, electrodes should be stored at 150 to 250°F (65 to 120°C) to prevent the coating from absorbing moisture. Electrodes damaged by exposure to atmospheric humidity should be reconditioned for two to four hours at 500-600°F (260 to 315°C). It is important to heat and cool slowly.

Porosity and excessive weld spatter may result if electrodes are not completely dry.

Flux Cored Arc Welding (FCAW)

The recommended shielding gas for flux cored welding with RA 253 MA consumables is a mixture of 75% argon and 25% carbon dioxide. Shield gas flow rate should be 40 cubic feet per hour. Wire extension should be 0.5 to 1 inch. Unused wire should be stored in a moisture resistant holding environment to prevent moisture pickup by the flux.

Table 16 - Typical Chemistry FCAW weld deposit , Weight %

C	Ce	Si	Mn	Cr	Ni	N
0.06	0.005	1.4	1.0	22.0	10.0	0.15

Table 17 - Typical FCAW Parameters – Flat/Horizontal Position

Wire Diameter	Amperage	Volts
0.045 inch	100-270	23-35

Table 18 - Typical GMAW Parameters

	Diameter inches	Current Amperes	Voltage Volts
Spray Arc	0.039	190-240	25-29
	0.047	210-250	26-30
Pulsed Arc	0.047	I_{peak} = 340-380 I_{bkg} = 100-160 Frequency = 100-120 Hz	

Shielding Gas - 68% Argon, 30% Helium, 2% Carbon Diozide
Gas Flow Rate - 25-34 ft³/hr (12-16 l/min)

Gas Metal Arc Welding (GMAW)

Table 19 - Suggested Shielding Gases for GMAW

Transfer Mode	Shielding Gas Composition
Spray Arc	100% Argon
	81% Argon, 18% Helium, 1% Carbon Dioxide
Globular/Short Circuit	75% Argon, 25% Helium
	90% Argon, 7.5% Helium, 2.5% Carbon Dioxide
	81% Argon, 18% Helium, 1% Carbon Dioxide
Out of Position	68% Argon, 30% Helium, 2% Carbon Dioxide

** Do not use 98%Ar 2%O_2 for welding RA 253 MA. Never use 75% Ar 25%CO_2 for any stainless or heat resistant alloy using the GMAW process.*

Table 20 - Typical Chemistry GMAW weld deposit, Weight %

C	Si	Mn	Cr	Ni	N
0.07	1.6	0.6	21.0	10.0	0.15

Gas Tungsten Arc Welding (GTAW)

100% argon shielding gas is preferred for manual GTAW. Helium may be added to increase speed in automatic welding. Electrodes should be 2% thoriated tungsten (AWS EWTh-2) with direct current straight polarity (electrode negative). For good arc control, grind the electrode tip to a 30 to 60 degree point, with a small flat at the tip. Grind lines should be parallel to the electrode, not circumferential. Finish grind on a 120 grit wheel. Adjust the arc on clean scrap metal, with no scale.

Shielding gas flow should be 25 cubic feet per hour.

Table 21 - Typical GTAW Parameters, Direct Current Electrode Negative

Tungsten Electrode Diameter	Amperage	Volts
0.040 inch	60-80	9-11
0.062 inch	80-110	10-12
0.094 inch	130-160	16-18

Table 22 - Typical Chemistry GTAW weld deposit, Weight %

C	Si	Mn	Cr	Ni	N
0.07	1.6	0.7	21.0	10.0	0.15

Submerged Arc Welding (SAW)

RA 253 MA is sub-arc welded using the neutral basic AvestaFlux® 805 (Basicity index 1.7). This is an agglomerate type welding flux characterized by neat deposit surfaces, a smooth transition zone between the parent and weld metal, easy slag removal and excellent resistance to moisture absorption during storage. Flux consumption of between 0.5 to 0.8 pounds of flux per pound of wire is typical.

Correct joint geometry must be used to avoid hot cracking in sub-arc welding. This means that the width of the joint must be greater than the depth. The width to depth ratio should be between 2 and 3. Interpass temperatures should be kept below 200°F for the SAW process.

Table 23 - Typical SAW Parameters, Direct Current Reverse Polarity (DCRP)

Wire Diameter inch	Current Amps	Voltage Volts	Wire Stickout inch	Travel Speed inch/min
0.062	225-300	29-33	0.75	8-12
0.094	300-400	29-33	1	16-24
0.125	400-450	29-33	1	16-24

Dissimilar Metal Welding

Table 24 - Suggested Fillers for Dissimilar Weld Joints

Base Metal 1	Base Metal 2	Filler Metal
RA 253 MA	Mild Steel	309
	304, 316, 309	RA 253 MA or 309
	310	RA 253 MA
	RA330, RA333, 800H, 600, 601	RA333
	RA 602 CA	RA 602 CA

Forming

RA 253 MA may be formed, sheared, and machined. Alloying with nitrogen results in a high yield point (54,000 psi typical). For this reason, greater force is required and more spring-back may be anticipated than with 304 or 309 stainless. All traces of forming lubricants must be removed prior to welding, annealing, or use in high temperature service.

Forming at room temperature is suggested whenever possible. If hot bending is required, the workpiece should be heated uniformly throughout its section to 2000°F (1100°C), finishing above 1650°F (900°C). Overheating or excessive hold time at starting temperature should be avoided to minimize grain growth.

No forming or bending should be performed in the low ductility range of 1200-1600°F (650-870°C). Forming in this temperature range may cause intergranular tearing in austenitic alloys.

Machining

Heat resistant austenitic alloys are generally more difficult to machine than conventional austenitic stainless steels. Since RA 253 MA is alloyed with nitrogen and rare earth metals, both higher cutting forces and a more rapid tool wear should be expected.

Use the most stable machine tools available. Stainless steels generate high cutting forces and large loads on the tools and the set-up. The set-up of the tools and the work piece must be rigid. The work piece must be adequately supported to avoid deflections by the cutting forces. Extensions on tools should be kept as small as possible. Long tool extensions and/or unstable cutting conditions severely increase the risk of vibration and tool failure.

Always use tools with sharp cutting edges. It is important that the cutting edge is sharp but it must also be strong enough to withstand the cutting forces. Change the insert or regrind the tool at more frequent intervals than for carbon steels. A blunt cutting edge produces higher cutting forces and a thicker strain hardened layer than a sharp edge. This applies especially to high alloy stainless steels. For cemented carbide tools, it is important that the edge chamfer is small enough to give a cutting edge that is effectively "sharp". Do not use a larger nose radius than necessary as this may cause vibrations.

Use a depth of cut that is deep enough to let the cutting edge work below the strain hardened layer created by previous passes or operations.

Use the correct cutting speed. Too slow of a cutting speed increases the risk of built-up edge formation, tool failure and may result in a poor surface finish of the machined surface.

When cutting fluid is used it should always be applied liberally to the cutting zone. If possible use cutting oils and emulsions with EP-additives.

The machining data given below represents general guidelines or starting values. These may need to be adjusted to the actual conditions of a specific machining operation. They are based on a tool life of approximately 15 minutes for cemented carbide tools and approximately 40 minutes for high-speed steel tools.

Table 25 - Turning, Longitudinal and Face Turning

	Cemented Carbide		High Speed Steels
	Roughing	Finishing	Finishing
Cutting Speed ft/min	295-395	395-525	46-59
Feed, inch/turn	0.012-0.024	0.002-0.012	0.02-0.008
Depth of cut, inches	0.08-0.20	0.02-0.08	0.2-0.08
Cemented Carbide Grade	C5, C6	C6, C7	-

Notes: Use coated cemented carbide inserts with positive chipbreaker styles. Use as small an entering angle as possible during roughing. Use cutting fluid. When roughing, SPUN and TPUN geometries may be used with good results. When face turning large workpieces use a tougher cemented carbide grade.

Table 26 - Drilling, Twist with High Speed Steels

Drill Diameter inch	Cutting Speed feet/minute	Feed inch/rev
1/32, 1/8	16-26	0.0015
1/4	16-26	0.003
3/8	26-33	0.005
5/8	26-33	0.008
3/4	26-33	0.010
1-1/4	26-33	0.012
1-1/2	26-33	0.013

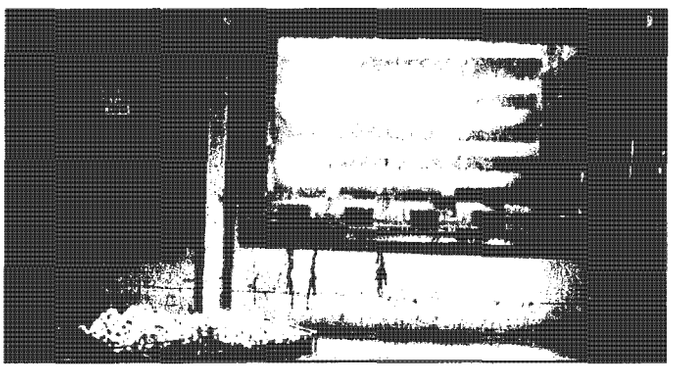
Heat Treatment

Solution annealing of RA 253 MA is performed at 1920 to 2100°F plus one hour per inch of thickness (1050 to 1150°C) for 5 to 20 minutes, rapid air cool or water quench. Plate is most commonly annealed at about 1960 to 2000°F (1070 to 1100°C).

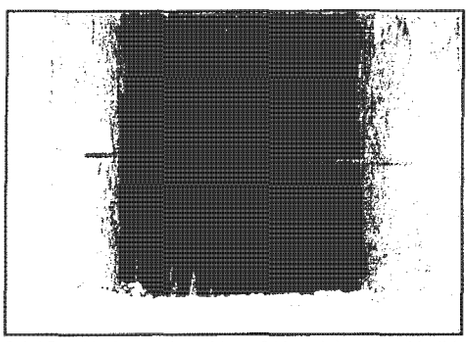
About 70% of residual stresses may be relieved by holding between 1560 to 1740°F (850 to 950°C) for about 15 minutes followed by an air cool.

After severe cold work (more than 10-20% cold work) it is desirable to solution anneal for maximum creep rupture strength. This is appropriate for service above 1450°F (800°C).

Coal fired power plant using a pressurized fluidized bed combustion (PFBC) boiler. RA 253 MA used for the cyclones (pictured), and gas collecting pipe for this project at American Electric Power (AEP) TIDD project in Brilliant, OH. Cyclones separate out particulate from the exhaust gases, which are fed into a gas turbine. Combustion temperatures were 1500-1600°F. RA 253 MA selected for its excellent strength and its resistance to wastage by the combined effects of oxidation, sulfidation and abrasion.



RA 253 MA radiant U-tubes mounted horizontally in a heat treat furnace. Typical operating temperature was 1800°F. Exothermic atmosphere used for annealing. Tubes were fabricated with a 6" OD x 11ga wall firing leg and a 5-1/8" OD x 11ga wall exhaust leg. Picture shown after 10 months in service. RA 253 MA replaced RA330.



RA 253 MA pipe replaced type 310 stainless steel in this recuperator system off of a zinc galvanizing line. Estimated process temperatures were 1600°F (average) and 1750°F maximum. The recuperator used 2" SCH40 pipe. 310 and 316 sainless pipe used in the front three rows, the inlet for hot exhaust gases, of the recuperator failed from scaling in less than 1 year. RA 253 MA was installed and photos show its condition after 2 years in service. Latest inspection reported no RA 253 MA after four years of service.

253 MA is a registered trademark of Outokumpu Stainless
RA330 and RA333 are registered trademarks of Rolled Alloys

DATA SHEET
RA 253 MA
UNS S30815

CORPORATE OFFICE

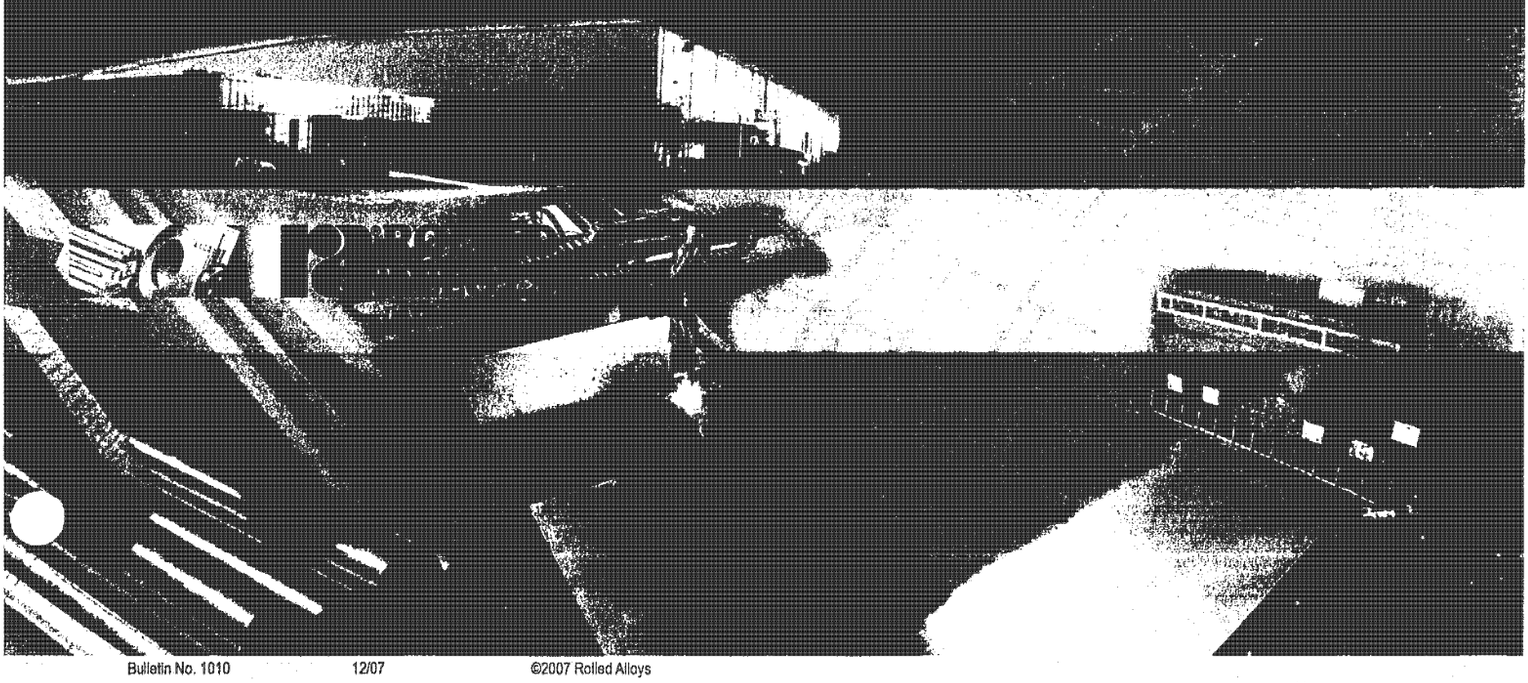
ROLLED ALLOYS
125 WEST STERNS RD
TEMPERANCE, MICHIGAN 48182
1-800-521-0332
1-734-847-0561
FAX: 1-734-847-6917
E-MAIL: SALES@ROLLEDALLOYS.COM
WWW.ROLLEDALLOYS.COM

NORTH AMERICAN LOCATIONS:

CALIFORNIA • CONNECTICUT • ILLINOIS • OHIO • OKLAHOMA • TEXAS
ALBERTA • ONTARIO

GLOBAL LOCATIONS:

CHINA • ENGLAND • FRANCE • GERMANY • THE NETHERLANDS • SCOTLAND • SINGAPORE • SPAIN



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IP7021563

1775 Annual Book of ASTM Standards
Ferrous Castings; Ferroalloys
Volume 01.02

TABLE 1 Chemical Requirements

Grade	Type	Composition, %							
		Carbon	Manganese, max	Silicon, max	Phosphorus, max	Sulfur, max	Chromium	Nickel	Molybdenum, max[A]
HF	19 Chromium, 9 Nickel	0.20–0.40	2.00	2.00	0.04	0.04	18.0–23.0	8.0–12.0	0.50
HH	25 Chromium, 12 Nickel	0.20–0.50	2.00	2.00	0.04	0.04	24.0–28.0	11.0–14.0	0.50
HI	28 Chromium, 15 Nickel	0.20–0.50	2.00	2.00	0.04	0.04	26.0–30.0	14.0–18.0	0.50
HK	25 Chromium, 20 Nickel	0.20–0.60	2.00	2.00	0.04	0.04	24.0–28.0	18.0–22.0	0.50
HE	29 Chromium, 9 Nickel	0.20–0.50	2.00	2.00	0.04	0.04	26.0–30.0	8.0–11.0	0.50
HT	15 Chromium, 35 Nickel	0.35–0.75	2.00	2.50	0.04	0.04	15.0–19.0	33.0–37.0	0.50
HU	19 Chromium, 39 Nickel	0.35–0.75	2.00	2.50	0.04	0.04	17.0–21.0	37.0–41.0	0.50
HW	12 Chromium, 60 Nickel	0.35–0.75	2.00	2.50	0.04	0.04	10.0–14.0	58.0–62.0	0.50
HX	17 Chromium, 66 Nickel	0.35–0.75	2.00	2.50	0.04	0.04	15.0–19.0	64.0–68.0	0.50
HC	28 Chromium	0.50 max	1.00	2.00	0.04	0.04	26.0–30.0	4.00 max	0.50
HD	28 Chromium, 5 Nickel	0.50 max	1.50	2.00	0.04	0.04	26.0–30.0	4.0–7.0	0.50
HL	29 Chromium, 20 Nickel	0.20–0.60	2.00	2.00	0.04	0.04	28.0–32.0	18.0–22.0	0.50
HN	20 Chromium, 25 Nickel	0.20–0.50	2.00	2.00	0.04	0.04	19.0–23.0	23.0–27.0	0.50
HP	26 Chromium, 35 Nickel	0.35–0.75	2.00	2.50	0.04	0.04	24–28	33–37	0.50

[A] Castings having a specified molybdenum range agreed upon by the manufacturer and the purchaser may also be furnished under these specifications.

SUPPLEMENTARY REQUIREMENTS

The following supplementary requirements shall not apply unless specified in the purchase order. A list of standardized supplementary requirements for use at the option of the purchaser is included in Specification A 781/A 781M. Those which are ordinarily considered suitable for use with this specification are given below. Others enumerated in A 781/A 781M may be used with this specification upon agreement between the manufacturer and purchaser.

S1. Magnetic Particle Examination

S2. Radiographic Examination

S3. Liquid Penetrant Examination

S4. Ultrasonic Examination

S5. Examination of Weld Preparation

S6. Certification

TABLE 2 Tensile Requirements

Grade	Type	Tensile Strength, min		Yield Point, min		Elongation in 2 in. [50 mm], min, %[A]
		ksi	[MPa]	ksi	[MPa]	
HF	19 Chromium, 9 Nickel	70	485	35	240	25
HH	25 Chromium, 12 Nickel	75	515	35	240	10
HI	28 Chromium, 15 Nickel	70	485	35	240	10
HK	25 Chromium, 20 Nickel	65	450	35	240	10
HE	29 Chromium, 9 Nickel	85	585	40	275	9
HT	15 Chromium, 35 Nickel	65	450	...	...	4
HU	19 Chromium, 39 Nickel	65	450	...	...	4
HW	12 Chromium, 60 Nickel	60	415	...	...	...
HX	17 Chromium, 66 Nickel	60	415	...	...	...
HC	28 Chromium	55	380	...	...	...
HD	28 Chromium, 5 Nickel	75	515	35	240	8
HL	29 Chromium, 20 Nickel	65	450	35	240	10
HN	20 Chromium, 25 Nickel	63	435	...	...	8
HP	26 Chromium, 35 Nickel	62.5	430	34	235	4.5

[A] When ICI test bars are used in tensile testing as provided for in this specification, the gage length to reduced section diameter ratio shall be 4 to 1.

S7. Prior Approval of Major Weld Repairs

S8. Marking

S9. Tension Test

S9.1 One tension test shall be made from material representing each heat. The bar from which the test specimen is taken shall be heat treated in production furnaces to the same procedure as the castings it represents. The results shall conform to the requirements specified in Table 2.

S9.2 Test bars shall be poured in separately cast keel blocks similar to Fig. 3 of Test Methods and Definitions A 370 or Fig. 1 of Specification A 447/A 447M.

S9.3 Tension test specimens may be cut from heat-treated castings; or from as-cast castings if no heat treatment is specified for the castings, instead of from test bars when agreed upon between the manufacturer and the purchaser.

S9.4 Test specimens shall be machined to the form and dimensions of the standard round 2-in. [50-mm] gage length specimen shown in Fig. 6 of Test Methods and Definitions A 370 and shall be tested in accordance with Test Methods and Definitions A 370.

S9.5 If the results of the mechanical tests for any heat do not conform to the requirements specified, the castings may be re-heat treated and re-tested, but may not be solution treated or re-austenitized more than twice.

S9.6 If any test specimen shows defective machining or develops flaws, it may be discarded and another specimen substituted from the same heat.

IP7021564

Table 1
Boiler Materials and Typical Applications (English Units)

Specification	Nominal Composition	Product Form	Min Tensile, ksi	Min Yield, ksi	High Heat Input Furn Walls	Other Furn Walls and Enclosures	SH RH Econ	Unheated Conn Pipe <10.75 in. OD	Headers and Pipe >10.75 in. OD	Drums	Recomm Max Use Temp, F	Notes
SA-178A	C-Steel	ERW tube	(47.0)	(26.0)	X	X	X				950	1,2
SA-192	C-Steel	Seamless tube	(47.0)	(26.0)	X	X	X	X			950	1
SA-178C	C-Steel	ERW tube	60.0	37.0		X	X				950	2
SA-210A1	C-Steel	Seamless tube	60.0	37.0	X	X	X	X			950	
SA-106B	C-Steel	Seamless pipe	60.0	35.0				X	X		950	3
SA-178D	C-Steel	ERW tube	70.0	40.0	X	X	X				950	2
SA-210C	C-Steel	Seamless tube	70.0	40.0		X	X	X			950	
SA-106C	C-Steel	Seamless pipe	70.0	40.0				X	X		950	3
SA-216WCB	C-Steel	Casting	70.0	36.0		X	X	X	X		950	
SA-105	C-Steel	Forging	70.0	36.0		X	X	X	X		950	3
SA-181-70	C-Steel	Forging	70.0	36.0		X	X	X	X		950	3
SA-266Cl2	C-Steel	Forging	70.0	36.0					X		800	
SA-516-70	C-Steel	Plate	70.0	38.0					X	X	800	
SA-266Cl3	C-Steel	Forging	75.0	37.5					X		800	
SA-299	C-Steel	Plate	75.0	40.0						X	800	
SA-250T1a	C-Mo	ERW tube	60.0	32.0		X	X				975	4,5
SA-209T1a	C-Mo	Seamless tube	60.0	32.0		X	X	X			975	4
SA-250T2	1/2Cr-1/2Mo	ERW tube	60.0	30.0		X	X		X		1025	6
SA-213T2	1/2Cr-1/2Mo	Seamless tube	60.0	30.0	X	X	X				1025	6
SA-250T12	1Cr-1/2Mo	ERW tube	60.0	32.0		X	X				1050	5
SA-213T12	1Cr-1/2Mo	Seamless tube	60.0	32.0	X	X	X				1050	
SA-335P12	1/2Cr-1/2Mo	Seamless pipe	60.0	32.0					X		1050	
SA-250T11	1-1/4Cr-1/2Mo-Si	ERW tube	60.0	30.0		X	X				1050	5
SA-213T11	1-1/4Cr-1/2Mo-Si	Seamless tube	60.0	30.0	X	X	X				1050	
SA-335P11	1-1/4Cr-1/2Mo-Si	Seamless pipe	60.0	30.0				X	X		1050	
SA-217WC6	1-1/4Cr-1/2Mo	Casting	70.0	40.0		X	X	X	X		1100	
SA-250T22	2-1/4Cr-1Mo	ERW tube	60.0	30.0			X				1115	5
SA-213T22	2-1/4Cr-1Mo	Seamless tube	60.0	30.0			X				1115	
SA-213T23	2-1/4Cr-W-V	Seamless tube	74.0	58.0	X		X				1115	
SA-335P22	2-1/4Cr-1Mo	Seamless pipe	60.0	30.0				X	X		1100	
SA-217WC9	2-1/4Cr-1Mo	Casting	70.0	40.0			X	X	X		1115	
SA-182F22Cl1	2-1/4Cr-1Mo	Forging	60.0	30.0			X		X		1115	
SA-336F22Cl1	2-1/4Cr-1Mo	Forging	60.0	30.0					X		1100	
SA-213T91	9Cr-1Mo-V	Seamless tube	85.0	60.0			X				1150	
SA-335P91	9Cr-1Mo-V	Seamless pipe	85.0	60.0				X	X		1150	
SA-217C12A	9Cr-1Mo-V	Casting	85.0	60.0			X		X		1200	
SA-182F91	9Cr-1Mo-V	Forging	85.0	60.0			X				1150	
SA-336F91	9Cr-1Mo-V	Forging	85.0	60.0					X		1150	
SA-213T92	9Cr-2W	Seamless tube	90.0	64.0			X		X		1200	
SA-213TP304H	18Cr-8Ni	Seamless tube	75.0	30.0			X				1400	
SA-213TP347H	18Cr-10Ni-Cb	Seamless tube	75.0	30.0			X				1400	
SA-213TP310H	25Cr-20Ni	Seamless tube	75.0	30.0			X				1500	
SB-407-800H	Ni-Cr-Fe	Seamless tube	65.0	25.0			X				1500	
SB-423-825	Ni-Fe-Cr-Mo-Cu	Seamless tube	85.0	35.0			X				1000	

Notes:
1. Values in parentheses are not required minimums, but are expected minimums.
2. Requires special inspection if used at 100% efficiency above 850F.
3. Limited to 800F maximum for piping 10.75 in. OD and larger and outside the boiler setting.
4. Limited to 875F maximum for applications outside the boiler setting.
5. Requires special inspection if used at 100% efficiency.
6. Maximum OD temperature is 1025F. Maximum mean metal temperature for Code calculations is 1000F.

to enhance creep strength. A new family of Ni and Ni-Cr-Co alloys is also available, specifically for advanced supercritical and advanced supercritical boiler designs.

Fuel ash corrosion considerations might dictate the use of higher alloys at lower temperatures. This is common in process recovery and refuse-fired boilers with very corrosive flue gas and ash. For example, SB-407-825 (42Ni-21.5Cr-3Mo-2.25Cu-0.9Ti-bal Fe) is used in the highly corrosive regions of refuse boiler superheaters, even at temperatures below 1000F (538C). In extreme cases, bimetallic tubes, with a core of a Code material for pressure retention and a cladding of a corrosion resistant alloy, are used for both furnace wall and superheater applications. Some common combinations are SA-210A1/304L, SA-210A1/Alloy 825, and SB-407-800H/50Cr-50Ni.

Selection factors

Many factors influence material selection in a superheater. These include cost as well as performance factors (heat transfer surface area required, final steam temperature, total mass flow through the tubes,

IP7021565

From: VALERIE ALLEY
To: GARRY CHRISTENSEN
Date: 4/18/2008 10:52 AM
Subject: Work order 08-58696-0 Has been Closed

Unit 2 DSC group to write and implement variable a larms for burner temperatures, point will be provided to Lance Johnson by Garry Christensen, alarms for burner tip i/s 800F, o/s 1400F, burner barrel i/s 650F, o/s 1200F values may change due to operating temperatures

Work assigned to crew 94

Total Hours 2.00

Total Material Cost 0.00

Work Order Request # 113939

New burner thermocouple settings

Unit 2	Present		New				New		
Burner	elbow temp	intermediate	burner tip	pt to initiate	in-service	out-of-service	burner barrel	in-service	out-of-service
B1	2sgate1536	2sgate1537	2sgate1536	2SGAES0006	800	1400	2sgate1537	650	1200
B2	2sgate1402	2sgate1403	2sgate1402		800	1400	2sgate1403	650	1200
B3	" "1538	" "1539	" "1538		800	1400	" "1539	650	1200
B4	" "1408	" "1410	" "1408		800	1400	" "1410	650	1200
B5	" "1540	" "1541	" "1540		800	1400	" "1541	650	1200
B6	" "1412	" "1414	" "1412		800	1400	" "1414	650	1200
F1	" "1416	" "1418	" "1416	2SGAESC 10	800	1400	" "1418	650	1200
F2	" "1542	" "1543	" "1542		800	1400	" "1543	650	1200
F3	" "1420	" "1422	" "1420		800	1400	" "1422	650	1200
F4	" "1544	" "1545	" "1544		800	1400	" "1545	650	1200
F5	" "1428	" "1430	" "1428		800	1400	" "1430	650	1200
F6	" "1546	" "1547	" "1546		800	1400	" "1547	650	1200
A1	" "1548	" "1549	" "1548	2SGAES0005	800	1400	" "1549	650	1200
A2	" "1432	" "1434	" "1432		800	1400	" "1434	650	1200
A3	" "1550	" "1551	" "1550		800	1400	" "1551	650	1200
A4	" "1436	" "1438	" "1436		800	1400	" "1438	650	1200
A5	" "1552	" "1553	" "1552		800	1400	" "1553	650	1200
A6	" "1444	" "1446	" "1444		800	1400	" "1446	650	1200
E1	" "1448	" "1450	" "1448	2SGAES0009	800	1400	" "1450	650	1200
E2	" "1554	" "1555	" "1554		800	1400	" "1555	650	1200
E3	" "1456	" "1458	" "1456		800	1400	" "1458	650	1200
E4	" "1556	" "1557	" "1556		800	1400	" "1557	650	1200
E5	" "1460	" "1462	" "1460		800	1400	" "1462	650	1200
E6	" "1558	" "1559	" "1558		800	1400	" "1559	650	1200
G1	" "1479	" "1478	" "1479	2SGAES0011	800	1400	" "1478	650	1200
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C6	" "1483	" "1482	" "1483		800	1400	" "1482	650	1200
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H3	" "1507	" "1506	" "1507		800	1400	" "1506	650	1200
H4	" "1574	" "1575	" "1574		800	1400	" "1575	650	1200
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H6	" "1572	" "1573	" "1572		800	1400	" "1573	650	1200
D1	" "1582	" "1583	" "1582	2SGAES0008	800	1400	" "1583	650	1200
D2	" "1527	" "1526	" "1527		800	1400	" "1526	650	1200
D3	" "1580	" "1581	" "1580		800	1400	" "1581	650	1200
D4	" "1519	" "1518	" "1519		800	1400	" "1518	650	1200
D5	" "1578	" "1579	" "1578		800	1400	" "1579	650	1200
D6	" "1515	" "1514	" "1515		800	1400	" "1514	650	1200

```
PURCHASING                PO STATUS INQUIRY - PO DETAIL                      PU4044
    PO Number           08-66863     Purchase Priority 4          ROUTINE

    Buyer               23849 BENNETT, N
    Line                  1
    WO Number           06-03474-0            Equip No          2SGA--A
    Crew No                                   Date Required     06/30/08
    Stock Number        DIRECT                Account No        00-2SGX-502
 1: Item Description    MODIFY AND RETURN: AIR REGISTER ASSEMBLIES, INNER
                        AIR FLOW DIVIDER CYLINDERS PER
    Requisition Cost    POWER & INDUSTRIAL DRAWING NO. 92-7827-SA99
     490.00000          TO 33-1/2" +1/8" - 0"

    Commodity Code      999999                Actual Cost       490.00000
    Unit Measure  PUR   EA  ISS EA            Trade Disc (% $)
    Conversion          1   TO  1             Amount
    Quantity Required   19      19            Result
    Taxable (Y/N)       Y                     Matl at Vendor
    Scheduled Delivery  07/03/08              Std Freight Rate
    Deliver To          Garry Christensen
 2: General Notes       One cyclinder was sent to P&I to see if the
                        cylinders could be modified and cost.  They came
WHICH ONE (C=CONVERSION, V=VOUCHER, N=NOTES, P=PAY, <RTN>=CONTINUE) ?
D70371 10:18 23 JUN 2008    Intermountain Power Service Corp.   USER.LIVE.DATA
```

IP7021568

PURCHASING DIRECT REQUISITION LINE INQUIRY PU0319

Requisition No: 248332 Line: 1 of 1
Send Req For Approval: Y
Blanket Order Number: Blnk Ln No:
1 Item Description: Modify existing 19 air register assemblies inner air flow divider cyclinders per drawing 92-7827-SA99 from Power and Industrial per their quote 08R-060. Ship the remaining 18 cylinders to POwer and Industrial and have them modify all 19
Account Number 00-2SGX-402
Buyer Number: 5 NANCY BENNETT
Unit of Measure: EA EACH
Quantity Required: 19
Estimated Unit Cost: 490.00000
Date Required: 06/30/08
Purchase Priority: 4 ROUTINE EMB: B
Recommended Vendor: Name: POWER AND INDUSTRIAL
Deliver To: Garry Christensen
2 General Notes: One cyclinder was sent to P&I to see if the cylinders could be modified and cost. They came

WHICH ONE (<RTN>=CONTINUE) ?
D70371 10:17 23 JUN 2008 Intermountain Power Service Corp. USER.LIVE.DATA

IP7021569

PURCHASING PURCHASE ORDER STATUS INQUIRY PU4025

Req Number: 248332 Date: 06/05/08
Buyer: 5 BENNETT, N Ext: 6538
Vendor: 4462 POWER & INDUSTRIAL SERVICES
Terms: 5 NET 30 Originator: GARRY CHRISTENSEN
FOB Code: 5 S/P P.P. & ADD Review By: R. NEWBERRY
1 Requisition Lines

	Ln No	Purchase Order	Stock No	Qty Ord	C	Net Rcvd	Bal Due	Date Req Del	Lst Rcvd Date	Assign Buyer
1:	1	08-66863	D	19		0	19	07/03/08		N.BENNETT
		REQUESTED BY G. CHRISTENSEN								

Line 1 Detail or Approval (D/A) ?
Page 1. 1 records were identified.

IP7021570

POWER & INDUSTRIAL SERVICES CORPORATION
95 Washington Street, P.O. Box 211, Donora, PA 15033

724-379-4477
800-676-7116
Fax 724-379-4408
www.piburners.com

QUOTATION **May 21, 2008** **P&I 08R-060**

Customer: Intermountain Power Service
Code: IPPIPP

Phone: (435) 864-6486
Fax: (435) 864-6670
E-mail: garry-c@ipsc.com

Attention: Garry Christensen

Subject: Modified Air Register Assembly
Inner Air Flow Divider Cylinder

Power & Industrial Services is pleased to present the following quotation:

Item	Description	P&I P/N	Quantity	Unit Price
1	Modified Air Register Assembly Inner Air Flow Divider Cylinder per Drawing 92-7827-SA99	92-7827-SA99	24	$490.00

Delivery: 3 Weeks ARO
FOB: SPFC - Shipping Point, Freight Collect
Terms: Net 30 Days

NOTE:

Prices are valid for an order based on the exact quantities as shown. Due to the current volatility of raw material costs, prices are subject to change at the time of order acceptance. After order acceptance prices will be firm through delivery. We regret any inconvenience this may create for you.

Please call if you have any questions or need additional information. Thank you for your interest in Power & Industrial Services.

Sincerely Yours,

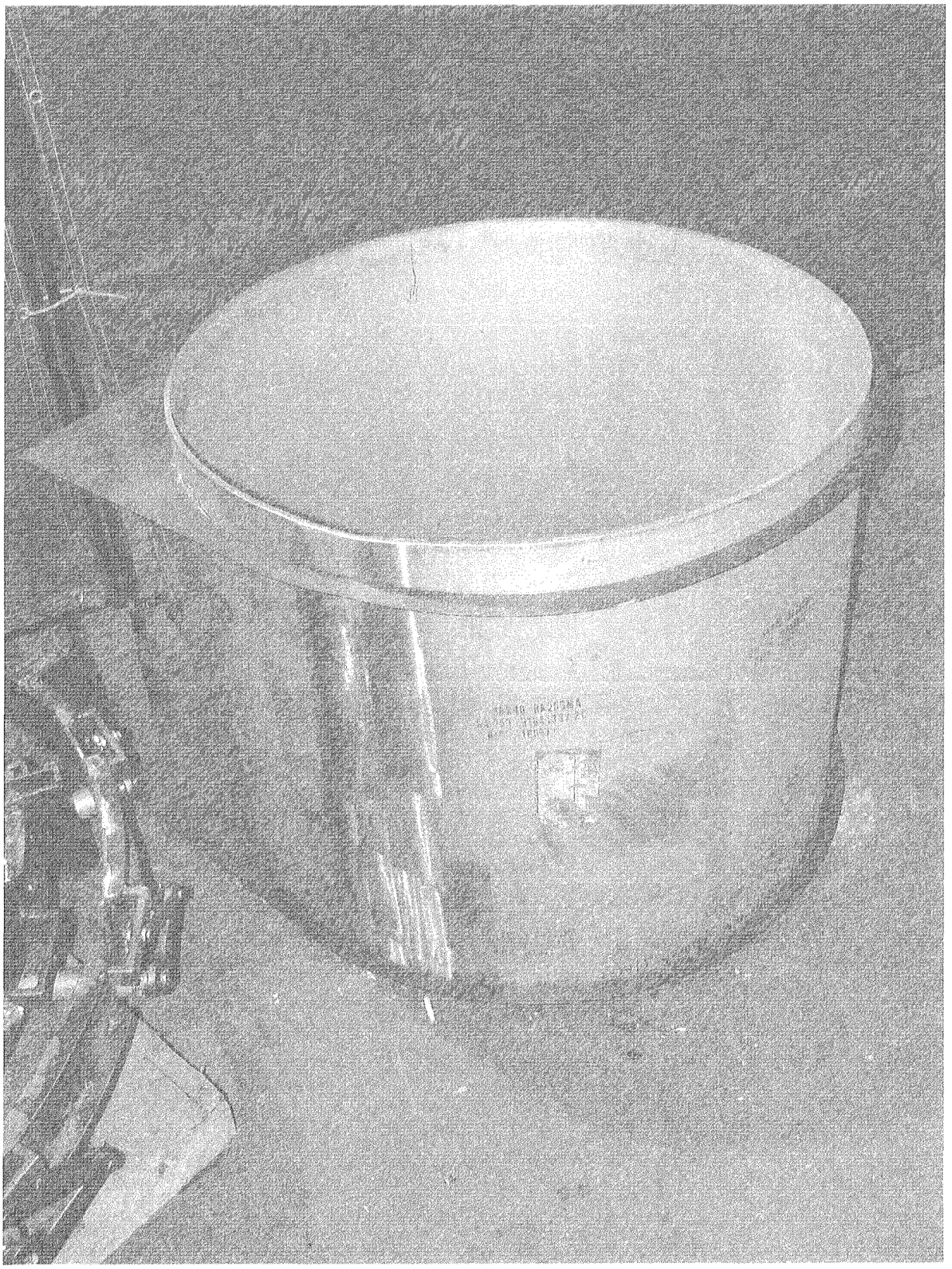
Lawrence H. Shekell

Larry Shekell

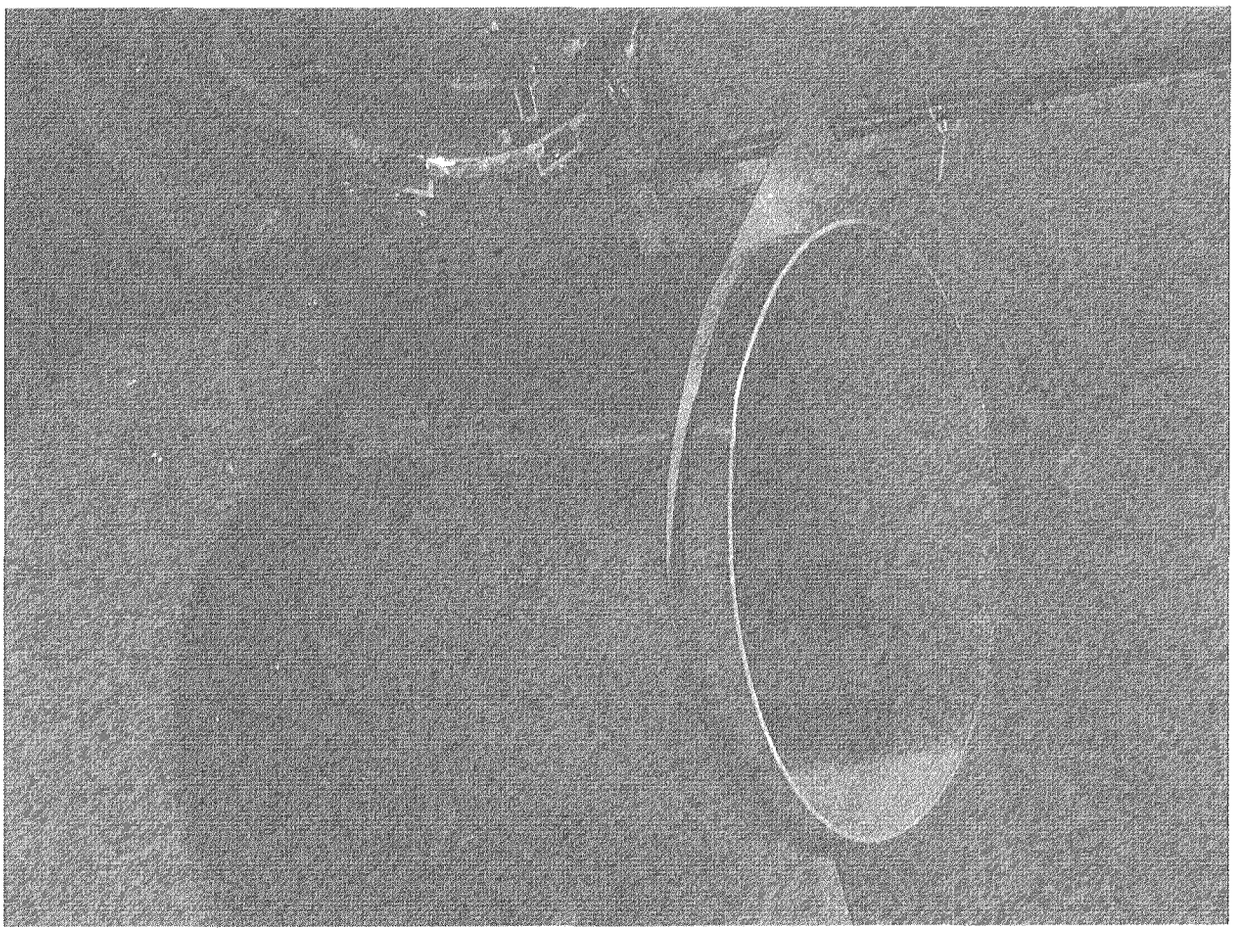
LS / rcd

IP7021571

IP7021572



IP7021573

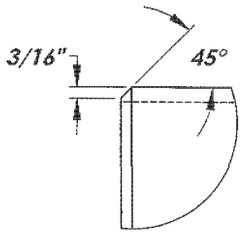


IP7021574

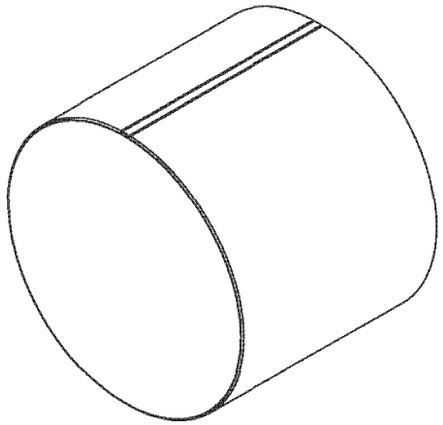
7827-SA99

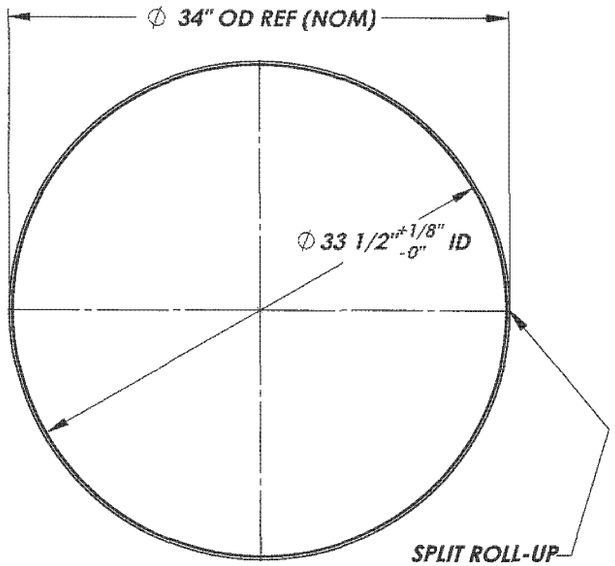
REVISIONS

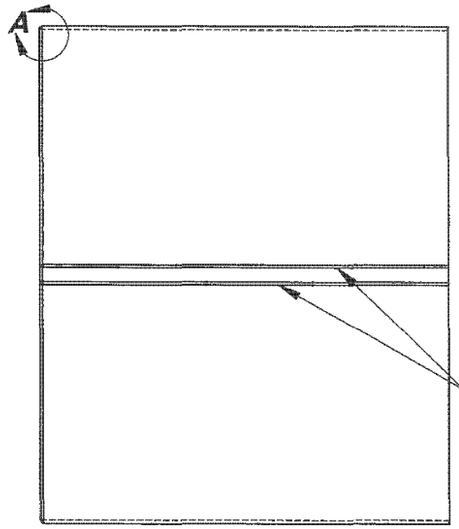
REV	DATE	DESCRIPTION	REV BY
0	05-13-08	ADDED FILL STRIP TO MAKE ID Φ 33 1/2"	RLS



DETAIL A
REWORK AT STRIP
AND WELDS







CONTINUOUS LONG
SEAM WELD, OD & ID
TO BE GROUND FLUSH

SPLIT ROLL-UP
(CUTTING WHEEL)
OPPOSITE SEAM
WELD-(EXISTING)

NOTES:

1) MATERIAL: SEE BOM (PLA-00024-02, 1/4" THK 253 MA)

2) QTY: ONE (1) REQ'D PER ASSY

3)TOLERANCES: ± 1/16" U.N.O.

4) DEBURR & BREAK ALL SHARP EDGES

5) WEIGHT EACH: APPROX 207 LBS

REROUND ONLY IF REQUIRED

PAGE 1 OF 1	TITLE: MODIFIED - AIR REGISTER ASSEMBLY INNER AIR FLOW DIVIDER CYLINDER DETAIL
PLANT CODE: .	
UNIT: .	PART FILE NO: / DWG FILE NO:
DRAWN BY: R. SCHOLLAERT	DRAWING NO: 92-7827-SA99 / REVISION: 0
DATE: 05-13-08	
APPV'D BY:	POWER & INDUSTRIAL SERVICES CORPORATION
DATE:	Phone 1-724-379-4477 FAX 1-724-379-4408

IP70215 75

From: "Mike Rhoades" <Mrhoades@Piburners.com>
To: "Garry Christensen" <Garry-C@ipsc.com>
CC: "Larry Shekell" <lshekell@Piburners.com>, "Ron Dushack" <rdushack@Piburn...
Date: 5/22/2008 8:23 AM
Subject: RE: IPPIPP 08R-060 Modified Air Register Assembly Inner AirFlow Divider Cylinders
Attachments: 7827-SA99-REV0.PDF

Garry,

Attached is the drawing referenced in the quote for our original size range.

As shown on the drawing, the ID would be maintained to 33-1/2" +1/8" -0.

The wall thickness is 1/4" thus the OD could range from 34" to 34-1/8".

Based on your last email I would suggest we change our design to be 33-5/8" +1/8" -0. This would yield an OD of 34-1/8" to 34-1/4". This might be a better size range due to the difficulty getting the roundness of a cylinder this size better than +or- 1/8". The modification price would be the same.

Will an OD of 34-1/4" provide sufficient clearance to the Outer Spin Vanes?

Regards,

Mike

-----Original Message-----
From: Larry Shekell
Sent: Thursday, May 22, 2008 9:32 AM
To: ~Tech Services Group
Subject: FW: IPPIPP 08R-060 Modified Air Register Assembly Inner AirFlow Divider Cylinders

Please advise if we are controlling both ID and OD

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Wednesday, May 21, 2008 5:35 PM
To: Larry Shekell
Subject: RE: IPPIPP 08R-060 Modified Air Register Assembly Inner AirFlow Divider Cylinders

Larry,

Is the gage set so the cylinder ID is the 33 1/2" needed. (Any smaller ID will not work). And also were you able to keep it cylindrical? It has to slide over a 33 1/2" diameter piece on the injector.

Garry Christensen

Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

>>> "Larry Shekell" <lshekell@Piburners.com> 5/21/2008 2:57 PM >>>
Garry,

The pictures show a gage we use to make sure the OD is correct.

Larry

-----Original Message-----
From: Ron Dushack
Sent: Wednesday, May 21, 2008 4:54 PM
To: 'garry-c@ipsc.com'
Cc: Larry Shekell; Nicole Shekell; Mike Rhoades; Don Mounts; Randy Schollaert
Subject: FW: IPPIPP 08R-060 Modified Air Register Assembly Inner Air Flow Divider Cylinders

Garry,

Attached are some photos of the one we are currently repairing for your reference.

Regards,
Ron

-----Original Message-----
From: Ron Dushack
Sent: Wednesday, May 21, 2008 4:49 PM
To: 'garry-c@ipsc.com'
Cc: Larry Shekell; Nicole Shekell; Mike Rhoades; Don Mounts; Randy Schollaert
Subject: IPPIPP 08R-060 Modified Air Register Assembly Inner Air Flow Divider Cylinders

Garry,

At the request of Larry Shekell, please find attached our proposal for Modified Air Register Assembly Inner Air Flow Divider Cylinders. Should you have any questions or require additional information, please contact Larry at your convenience at 412-736-0403 or at the numbers listed below. Thank you for your continued interest in Power & Industrial Services.

Regards,
Ron Dushack
Estimator
Power and Industrial Services
95 Washington Street
Donora, PA 15033
Phone: (800) 676-7116
Fax: (724) 379-4408

Confidentiality Notice: This message and its attachments, if any, may contain information that is confidential, internal and/or legally privileged from non-disclosure. If you are not the intended recipient, an employee, or agent responsible for delivering this message to the intended recipient, you are herby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by replying to the message and deleting it from you computer.

From: "Mike Rhoades" <Mrhoades@Piburners.com>
To: "Garry Christensen" <Garry-C@ipsc.com>, "Mark Work" <MWork@Piburners.com>
CC: "Dean Wood" <Dean-W@ipsc.com>, "Larry Shekell" <lshekell@Piburners.com>,...
Date: 4/29/2008 8:22 AM
Subject: RE: IPPIPP 08-060 Air Flow Divider Cylinder - Reworking

Garry,
This sounds good to us.

Our shipping address is:
Power and Industrial Services Corporation
Donora Industrial Park
95 Washington Street
Donora, PA 15033

Mark Work is our Logistics Manager and can help with the shipping arrangements if necessary.

Thanks,

Mike

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Monday, April 28, 2008 6:24 PM
To: Mike Rhoades
Cc: Dean Wood; Larry Shekell
Subject: Re: IPPIPP 08-060 Air Flow Divider Cylinder - Reworking

Mike,

After discussing it here, we would like to ship you one and let you see how much work it will take to modify it to 33 1/2" ID and the pricing to do all 19 (total). Let me know if this will work and if so the shipping address.

Thanks,

Garry Christensen
Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

>>> "Mike Rhoades" <Mrhoades@Piburners.com> 4/28/2008 4:04 PM >>>
Garry,

We would be willing to modify the cylinders to obtain the new desired size of 33-1/2" ID (min) at our cost if IPSC ships the cylinders back to our shop.

We would like to try one (1) at first to see how much work is involved and also how concentric the cylinder is after modification. We would then provide a price to you (at our cost) and also give you an idea of how concentric the modified cylinders will be after modification and any variances which may occur.

Please let us know if this sounds ok with you and how to proceed.

Thanks,

Mike

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Tuesday, April 22, 2008 9:51 AM
To: Larry Shekell
Cc: Dean Wood
Subject: Air flow divider cylinders

Larry, The air flow divider cylinder Id's were just short. Russ and I measured on the existing spare burner but it did not have the injector in it which proved to be a tight fit with very little tolerance. The inside diameter could not be less than 33 1/2". We cut up and used 5 of the 24. Below is a list of 20 ID's that were left after grabbing the ones with the largest Id's.
33 1/8, 33 1/8, 33 1/4, 33 1/4, 33 3/16, 33 1/16, 33 3/16, 33 1/16, 33 1/4, 33 1/8, 33 3/16, 33, 33 3/16, 33 1/8, 33 3/16, 33 3/16, 33 3/16, 33 1/8, 33 3/16, 33 1/8.

The injector slid in 10 inches of the 28 inches. This had to be minimum 33 1/2 inch Id. Outside of the 10 inches we used the cylinders provided by cutting down or even piecing in areas. We are wondering if the cylinders can be modified to an ID of 33 1/2" and if so pricing. Let me know. Thanks

Also, the boiler observation ports are installed and I believe they are going to do the same on the other unit.

If you are driving around showing your new burner, we would be interested in having you stop by to show it off. Just let us know.

Garry Christensen
Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Thursday, January 17, 2008 3:25 PM

To: Nicole Shekell
Cc: Larry Shekell
Subject: Request to possibility and quote to manufacture burner partfor Intermountain Power

Nicole, the part we are looking to have made with centrifugally cast PI-2000 material is their air flow divider. It is .250 " thick and is 28" in length. The OD 33 3/4", ID 33 1/4" , centerline is 33 1/2" diameter. Outside diameter is critical dimension since spin vanes are outside of this section. We are looking at a total of 24 and possibly more depending on time and price. We need to have them onsite by March 28, 2008. Please let me know if possible. I will need a quote as soon as reasonable possible. We will need one end to be weld prepped If you need more information please contact me Monday. I am attaching several pictures to help identify the issue.
Garry Christensen

Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com) Telephone (435) 864-6486

From: "Mike Rhoades" <Mrhoades@Piburners.com>
To: <garry-c@ipsc.com>
CC: "Larry Shekell" <lshekell@Piburners.com>, "Russ Giovanetti" <rgiovanetti...
Date: 4/28/2008 4:04 PM
Subject: IPPIPP 08-060 Air Flow Divider Cylinder - Reworking

Garry,

We would be willing to modify the cylinders to obtain the new desired size of 33-1/2" ID (min) at our cost if IPSC ships the cylinders back to our shop.

We would like to try one (1) at first to see how much work is involved and also how concentric the cylinder is after modification. We would then provide a price to you (at our cost) and also give you an idea of how concentric the modified cylinders will be after modification and any variances which may occur.

Please let us know if this sounds ok with you and how to proceed.

Thanks,

Mike

-----Original Message-----
From: Garry Christensen [mailto:Garry-C@ipsc.com]
Sent: Tuesday, April 22, 2008 9:51 AM
To: Larry Shekell
Cc: Dean Wood
Subject: Air flow divider cylinders

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The injector slid in 10 inches of the 28 inches. This had to be minimum 33 1/2 inch Id. Outside of the 10 inches we used the cylinders provided by cutting down or even piecing in areas. We are wondering if the cylinders can be modified to an ID of 33 1/2" and if so pricing. Let me know. Thanks

Also, the boiler observation ports are installed and I believe they are going to do the same on the other unit.

If you are driving around showing your new burner, we would be interested in having you stop by to show it off. Just let us know.

Garry Christensen

Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com)
Telephone (435) 864-6486

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Sent: Thursday, January 17, 2008 3:25 PM
To: Nicole Shekell
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Subject: Request to possibility and quote to manufacture burner partfor Intermountain Power

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Garry Christensen

Intermountain Power Service Corp.
Performance Engineer
850 W. Brush Wellman Road
Delta, Utah 84624-8546
garry-c@ipsc.com (mailto:garry-c@ipsc.com) Telephone (435) 864-6486

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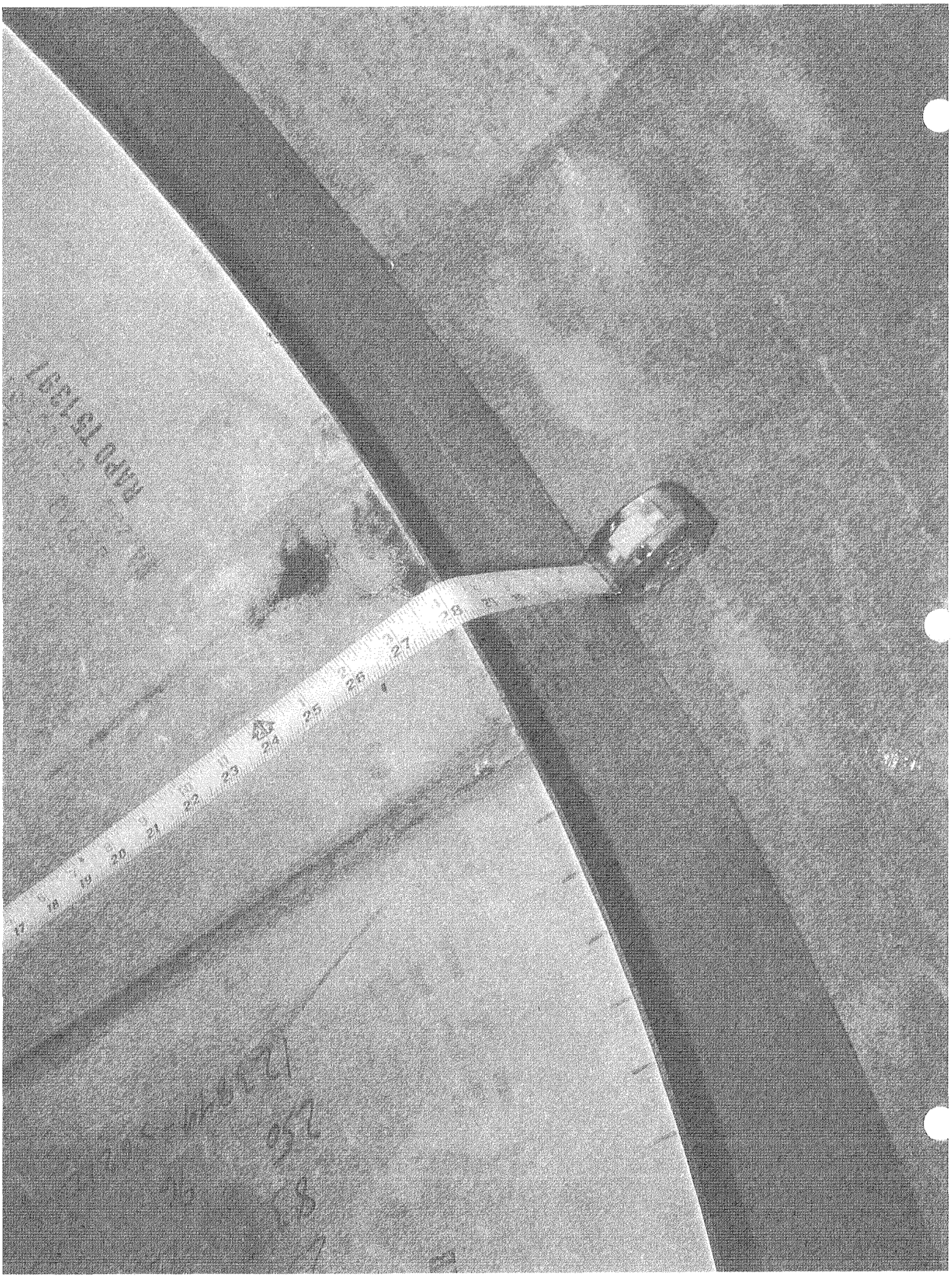
IP7021585



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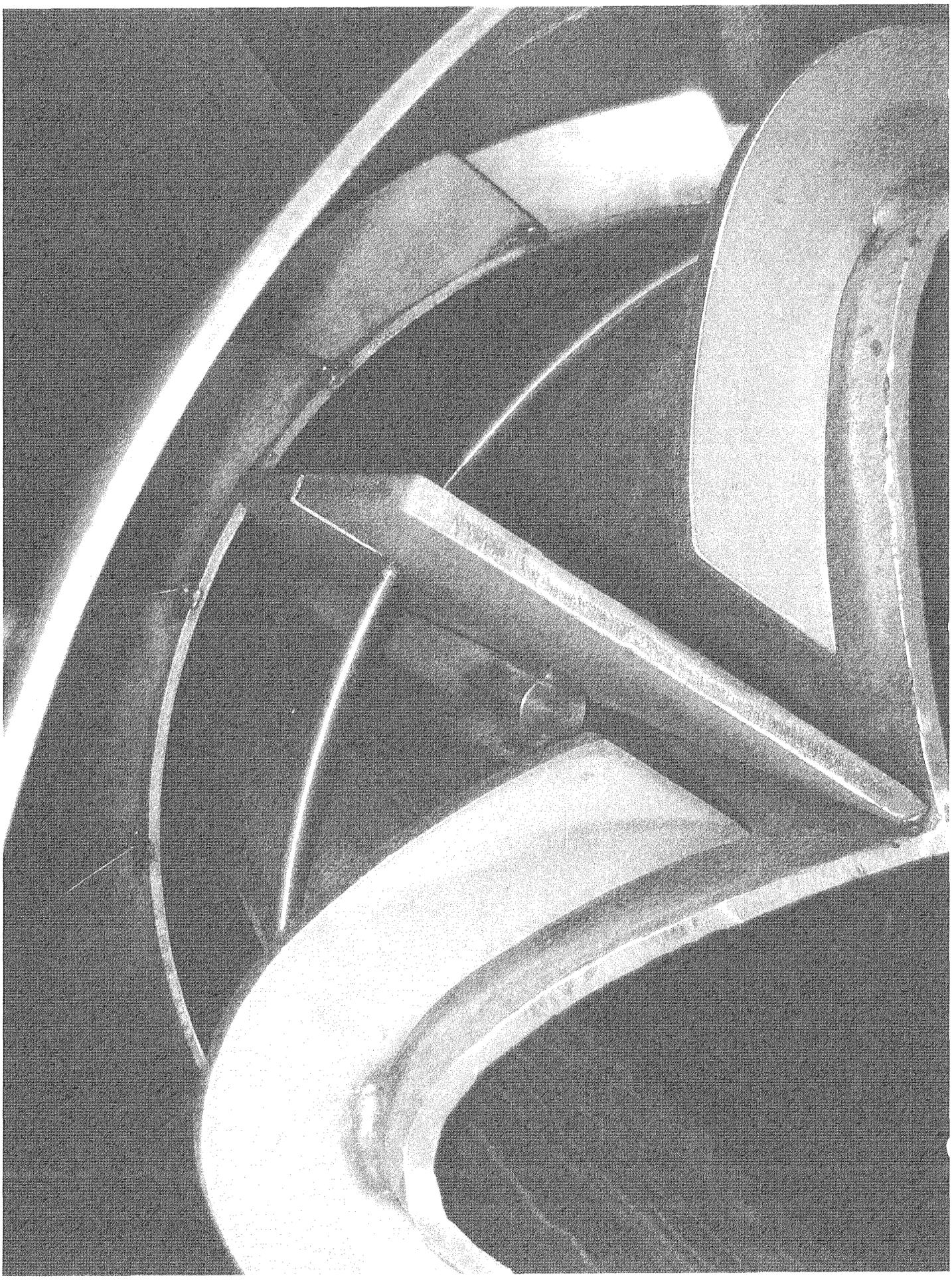


IP7021587

moved E4 5.0 to 6.0

8-4-08 10:40

Previous

947.18 mw
380.20 tph

O2 West 2.50 O2 East 3.41

Windbox press 3.84 I/S, coal flow 0.0	E6	E5	E4	E3	E2	E1	
	4.00	2.75	3.50	2.75	2.75	4.00	Spin Vane setting
	8.0	6.5	5.0	6.0	6.5	7.0	Outer register setting
	5	3	3	3	3	7	Inner Air setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.07	0.04	0.10	0.09	0.09	0.00	0.10	Combustion index
Avg 1337	1424	1379	1491	1122	1379	1225	Burner tip temp
Avg 838	822	862	900	807	874	760	Burner body temp
Avg 87	100	84	96	76	70	98	IBAMs flow KPPH
Total 524	79.0 West	SA damper Position			East	79.0	

1/3 OFA % dmpr 0
2/3 OFA % dmpr 0

Windbox press 3.35 I/S, coal flow	A6	A5	A4	A3	A2	A1	
	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	7	3	5	3	7	Inner Air setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.51	0.47	0.32	0.63	0.39	0.60	0.64	Combustion index
Avg 703	692	731	713	665	720	695	Burner tip temp
Avg 526	530	545	506	521	532	521	Burner body temp
Avg 103	102	97	98	85	123	109	IBAMs flow KPPH
Total 615	80.0 West	SA damper Position			East	79.7	

PSH Dmpr 64.9 RH Dmpr 62.4

Windbox press 3.85 I/S, coal flow	F6	F5	F4	F3	F2	F1	
	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.34	0.42	0.00	0.62	0.47	0.00	0.47	Combustion index
Avg 638	659	681	700	605	494	688	Burner tip temp
Avg 531	558	557	524	518	512	520	Burner body temp
Avg 101	112	88	95	108	88	111	IBAMs flow KPPH
Total 603	79.9 West	SA damper Position			East	80.3	

Duct Press actual 52.0 target 53.3

Windbox press 3.19 I/S, coal flow	B6	B5	B4	B3	B2	B1	
	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.46	0.91	0.49	0.00	0.53	0.78	0.00	Combustion index
Avg 679	689	660	675	709	639	701	Burner tip temp
Avg 522	537	535	529	492	506	531	Burner body temp
Avg 113	147	120	116	103	69	125	IBAMs flow KPPH
Total 680	79.8 West	SA damper Position			East	79.8	

4967 Total SA flow

-0.27 Furnace Press

Drum Level 0.50 Avg
0.50 West -0.00 Middle 4.03 East

O2 West 2.50 O2 East 3.41

	D6	D5	D4	D3	D2	D1	Windbox press 3.06 I/S, coal flow
Spin Vane setting	4.00	4.00	4.00	4.00	2.75	4.00	
Outer register setting	8.0	5.5	5.0	5.0	6.5	8.0	
Inner Air setting	5	5	5	5	3	5	
Adjustable restrictor setting	21.00	21.00	19.69	18.09	17.57	17.42	
Combustion index	0.33	0.45	0.57	0.86	0.46	0.75	0.56 Avg
Burner tip temp	697	681	710	668	802	684	707 Avg
Burner body temp	518	520	520	522	503	547	522 Avg
IBAMs flow KPPH	108	95	93	97	76	101	95 Avg
	80.8 West	SA damper Position			East	80.6	568 Total

	H6	H5	H4	H3	H2	H1	Windbox press 3.11 I/S, coal flow
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	
Outer register setting	8.0	5.5	5.5	5.5	5.5	8.0	
Inner Air setting	5	5	5	5	5	5	
Adjustable restrictor setting	17.42	17.57	18.09	19.69	21.00	21.00	
Combustion index	0.63	0.42	0.53	0.32	0.55	0.35	0.46 Avg
Burner tip temp	673	701	660	649	635	703	670 Avg
Burner body temp	531	548	535	513	532	525	531 Avg
IBAMs flow KPPH	110	107	96	97	90	95	99 Avg
	79.6 West	SA damper Position			East	79.9	596 Total

	C6	C5	C4	C3	C2	C1	Windbox press 3.46 I/S, coal flow
Spin Vane setting	3.50	4.00	4.00	2.75	4.00	4.00	
Outer register setting	7.0	5.5	5.5	5.5	5.5	7.0	
Inner Air setting	5	5	5	3	5	5	
Adjustable restrictor setting	21.00	21.00	20.41	19.24	18.76	17.31	
Combustion index	0.64	0.50	0.61	0.63	0.49	0.60	0.56 Avg
Burner tip temp	791	688	659	655	662	667	687 Avg
Burner body temp	507	531	510	538	531	518	523 Avg
IBAMs flow KPPH	96	103	99	77	103	112	98 Avg
	79.8 West	SA damper Position			East	79.3	590 Total

	G6	G5	G4	G3	G2	G1	Windbox press 3.14 I/S, coal flow
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	
Outer register setting	9.0	5.5	5.5	5.5	5.5	9.0	
Inner Air setting	5	5	5	4	5	5	
Adjustable restrictor setting	17.00	17.97	18.35	20.75	21.00	21.00	
Combustion index	0.61	0.80	0.70	0.54	0.71	0.51	0.65 Avg
Burner tip temp	623	623	627	571	623	695	627 Avg
Burner body temp	537	539	499	510	528	525	523 Avg
IBAMs flow KPPH	98	84	107	99	92	111	98 Avg
	79.6 West	SA damper Position			East	80.1	591 Total

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

Next

U2 O2 Trends

East % O2				
6'	2.3	3.3	4.9	E A
13'	2.3	4.2	3.7	F B
18'	2.3	4.1	3.7	G C
Ave		3.41	% O2	H D

West % O2				
6'	5.8	1.6	2.6	E A
13'	3.6	1.1	1.4	F B
18'	0.0	1.9	2.0	G C
Ave		2.50	% O2	H D

O2 Actual 2.99
O2 Target 2.94
NOx Actual 0.385
NOx Target 0.439
Scrub Inlet SO2 576 ppm

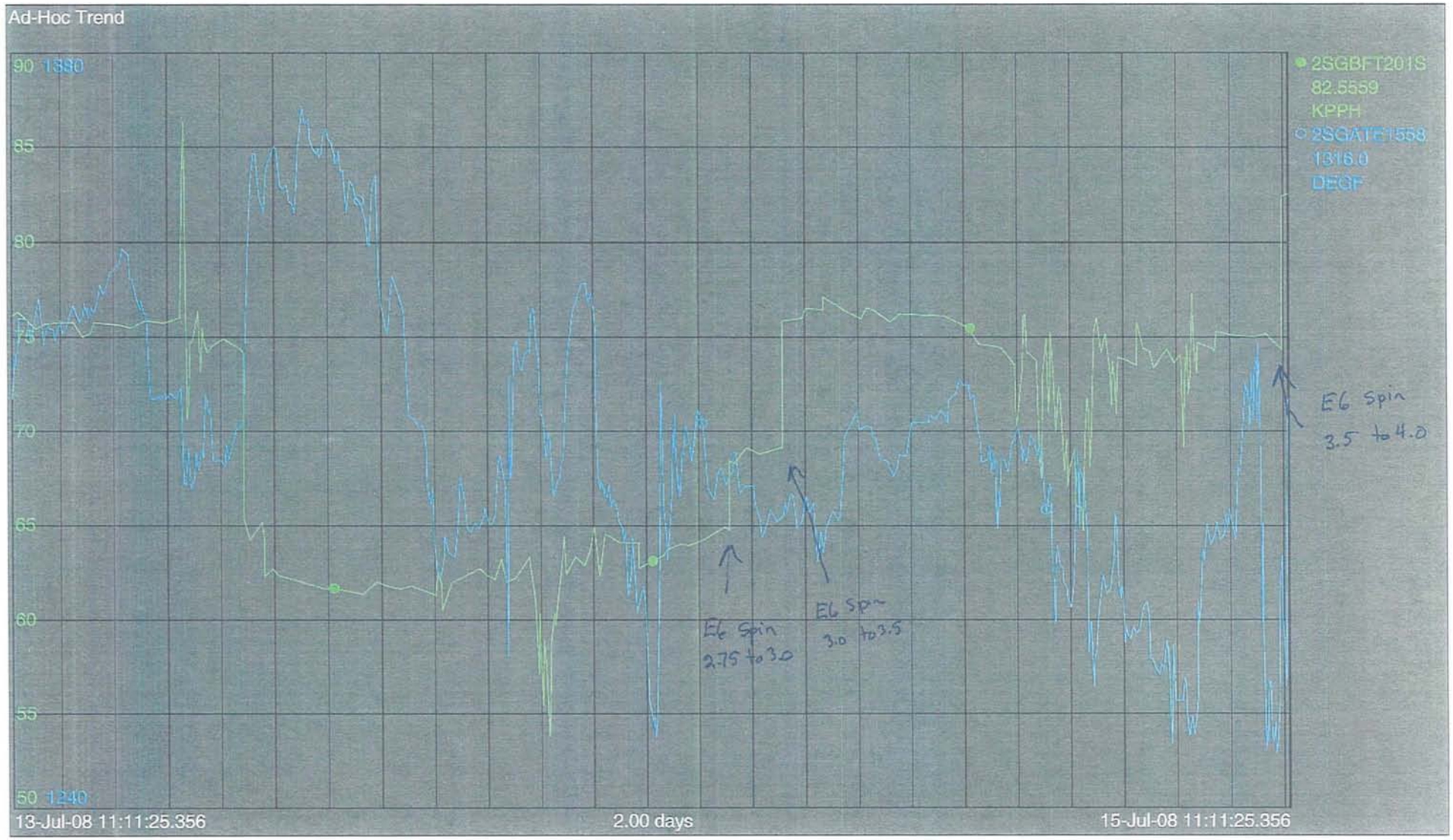
West		East
710	SA Air Temp	700
5.4	SA Duct Pr	5.0
739	Exit Gas Temp	752
2.50	Econ O2 %	3.41
0.50	Drum Level	4.03
726	1st stg inlet t	717
71	1st stg sprays	20
712	1st stg outlet t	717
785	2nd stg inlet t	784
92	2nd stg sprays	91
759	2nd stg outlet t	761

Total sprays 328

Weather I/O | Temp F | Plant Overview | Main Menu | Utilities | Unit 1 MW | Menu | AQCS | U2 BURNER OVRWS | Burner Fronts | Unit 2 MW | Menu | AQCS | Coal Yard | Common | 04-Aug-08 10:25:41 | IPSC

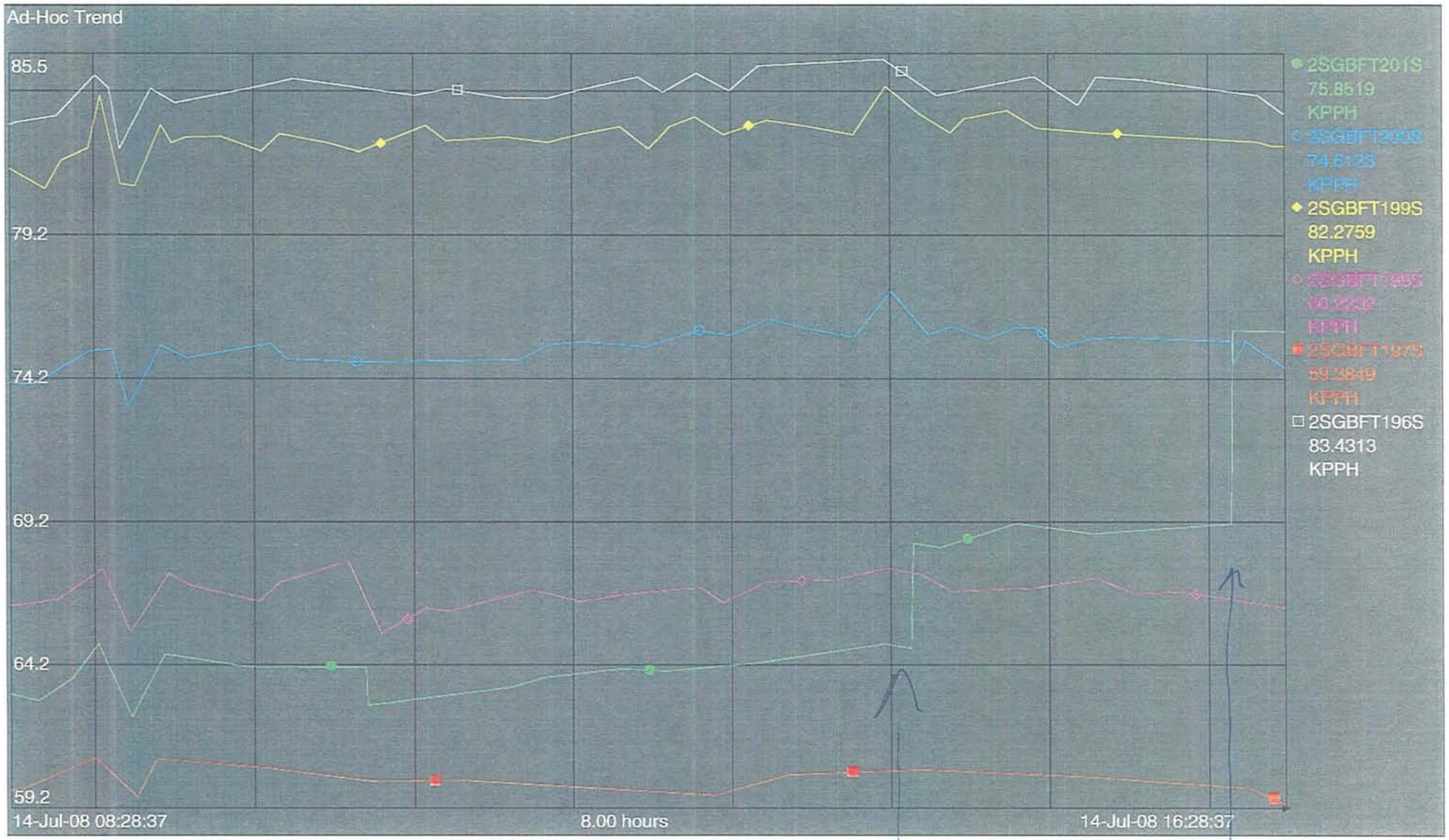
IP7021588

Display Unit 2 Burner Overview, 04-Aug-08 10:26:21



Display Trend Display1, 15-Jul-08 11:11:45

IP70215 89



E6 spin
2.75 to 3.0

E6 spin
3.0 to 3.5

Display Trend Display1, 14-Jul-08 16:28:38

IP70215 90

C = 50 E6 spin 2.75
inner to 5

E6 [illegible]

Previous | Next

948.53 mw
366.91 tph

O2 West 2.48 | O2 East 2.92

Windbox press 3.34	E6	E5	E4	E3	E2	E1	
I/S, coal flow 0.0	4.00	2.75	3.50	2.75	2.75	4.00	Spin Vane setting
	8.0	6.5	5.5	5.5	6.5	7.0	Outer register setting
	7	3	3	3	3	7	Inner Air setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.06	0.00	0.07	0.07	0.08	0.07	0.08	Combustion index
Avg 1109	1449	1170	912	940	996	1185	Burner tip temp
Avg 745	855	767	693	677	717	763	Burner body temp
Avg 84	95	83	93	74	67	93	IBAMs flow KPPH
Total 505	82.0 West	SA damper Position			East	81.7	

1/3 OFA % dmpr 1
2/3 OFA % dmpr 26

Windbox press 2.86	A6	A5	A4	A3	A2	A1	
I/S, coal flow 52.9	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	7	3	5	3	7	Inner Air setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.57	0.66	0.34	0.69	0.42	0.64	0.65	Combustion index
Avg 687	640	722	718	648	716	679	Burner tip temp
Avg 520	522	537	495	513	527	523	Burner body temp
Avg 98	97	92	94	82	118	103	IBAMs flow KPPH
Total 587	77.2 West	SA damper Position			East	77.2	

PSH Dmpr 99.9 | RH Dmpr 30.2

Windbox press 3.21	F6	F5	F4	F3	F2	F1	
I/S, coal flow 52.2	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.33	0.53	0.00	0.51	0.37	0.00	0.69	Combustion index
Avg 634	649	630	744	598	493	688	Burner tip temp
Avg 526	548	551	523	511	508	517	Burner body temp
Avg 96	106	83	93	104	85	106	IBAMs flow KPPH
Total 576	76.4 West	SA damper Position			East	77.1	

Duct Press actual 54.1 | target 52.2

Windbox press 2.56	B6	B5	B4	B3	B2	B1	
I/S, coal flow 51.7	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.45	0.77	0.78	0.00	0.63	0.50	0.00	Combustion index
Avg 653	651	633	680	623	663	669	Burner tip temp
Avg 516	526	531	523	486	506	525	Burner body temp
Avg 108	132	112	115	98	79	109	IBAMs flow KPPH
Total 646	76.7 West	SA damper Position			East	76.7	

4835 Total SA flow

Drum Level -1.01 Avg
0.07 West -0.93 Middle -5.24 East

-0.43 Furnace Press

O2 West 2.48 | O2 East 2.92

Windbox press 2.49	D6	D5	D4	D3	D2	D1	
I/S, coal flow 52.3	4.00	4.00	4.00	4.00	2.75	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	6.5	8.0	Outer register setting
	5	5	5	5	3	5	Inner Air setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
	0.50	0.44	0.24	0.74	0.74	0.45	0.52 Avg Combustion index
	660	654	624	671	709	699	670 Avg Burner tip temp
	513	512	516	518	495	542	516 Avg Burner body temp
	103	91	88	93	71	88	89 Avg IBAMs flow KPPH
	75.9 West	SA damper Position			East	76.0	533 Total

Windbox press 2.66	H6	H5	H4	H3	H2	H1	
I/S, coal flow 53.0	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
	0.59	0.55	0.35	0.43	0.32	0.23	0.42 Avg Combustion index
	662	687	657	638	670	634	658 Avg Burner tip temp
	517	537	529	507	536	528	526 Avg Burner body temp
	105	102	91	93	86	88	94 Avg IBAMs flow KPPH
	76.8 West	SA damper Position			East	76.7	565 Total

Windbox press 2.87	C6	C5	C4	C3	C2	C1	
I/S, coal flow 52.0	3.50	4.00	4.00	2.75	4.00	4.00	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	5	5	3	5	5	Inner Air setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
	0.58	0.42	0.26	0.63	0.47	0.46	0.46 Avg Combustion index
	670	677	659	615	672	660	659 Avg Burner tip temp
	495	520	500	530	522	509	512 Avg Burner body temp
	92	97	93	74	99	106	94 Avg IBAMs flow KPPH
	76.7 West	SA damper Position			East	77.1	563 Total

Windbox press 2.54	G6	G5	G4	G3	G2	G1	
I/S, coal flow 52.7	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	5	5	5	4	5	5	Inner Air setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
	0.63	0.83	0.63	0.47	0.79	0.49	0.62 Avg Combustion index
	639	630	616	657	613	664	637 Avg Burner tip temp
	530	527	492	511	526	516	517 Avg Burner body temp
	93	80	100	95	87	105	93 Avg IBAMs flow KPPH
	76.4 West	SA damper Position			East	77.0	561 Total

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	3.0	4.4	4.6	E A
13'	1.7	2.9	3.1	F B
18'	1.2	2.4	3.1	G C
Ave		2.92	% O2	H D

West % O2

6'	4.0	3.5	3.0	E A
13'	3.0	2.3	1.1	F B
18'	0.0	2.0	0.9	G C
Ave		2.48	% O2	H D

O2 Actual 2.70
O2 Target 2.97
NOx Actual 0.393
NOx Target 0.417
Scrub Inlet SO2 501 ppm

West		East
707	SA Air Temp	704
4.9	SA Duct Pr	4.5
732	Exit Gas Temp	752
2.48	Econ O2 %	2.92
0.07	Drum Level	-5.24
728	1st stg inlet t	725
97	1st stg sprays	75
707	1st stg outlet t	711
778	2nd stg inlet t	778
90	2nd stg sprays	113
753	2nd stg outlet t	754

Total sprays 426

75.8 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 947 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 949 MW | Menu | AQCS | Coal Yard | Common | 11-Jul-08 09:13:01 | IPSC

IP7021591

Display Unit 2 Burner Overview, 11-Jul-08 09:13:20

Prior to moving E1 outer 6.0 to 7.0

Previous | Next

O2 West 2.57 | O2 East 3.54

949.17 mw
369.39 tph

Windbox press 1.50	E6	E5	E4	E3	E2	E1	
I/S, coal flow 0.0	4.00	2.75	3.50	2.75	2.75	4.00	Spin Vane setting
	8.0	6.5	5.5	5.5	6.5	6.0	Outer register setting
	7	3	3	3	3	7	Inner Air setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.07	0.05	0.10	0.09	0.09	0.05	0.06	Combustion index
Avg 1096	1053	1292	835	1018	1071	1305	Burner tip temp
Avg 738	715	800	696	682	728	806	Burner body temp
Avg 67	76	63	73	61	55	76	IBAMs flow KPPH
Total 402	34.7 West	SA damper Position			East	35.0	

1/3 OFA % dmpr 1
2/3 OFA % dmpr 46

Windbox press 2.60	A6	A5	A4	A3	A2	A1	
I/S, coal flow 52.8	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	7	3	5	3	7	Inner Air setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.52	0.51	0.30	0.73	0.31	0.55	0.78	Combustion index
Avg 688	658	703	728	653	715	675	Burner tip temp
Avg 516	523	540	494	508	521	510	Burner body temp
Avg 94	93	88	90	79	112	98	IBAMs flow KPPH
Total 562	76.5 West	SA damper Position			East	76.1	

PSH Dmpr 73.9 | RH Dmpr 52.9

Windbox press 3.10	F6	F5	F4	F3	F2	F1	
I/S, coal flow 52.8	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.30	0.55	0.00	0.19	0.31	0.00	0.60	Combustion index
Avg 643	664	685	739	614	503	654	Burner tip temp
Avg 523	546	551	521	509	503	509	Burner body temp
Avg 94	104	82	89	102	83	103	IBAMs flow KPPH
Total 564	76.1 West	SA damper Position			East	76.4	

Duct Press actual 54.6 | target 50.8

Windbox press 2.49	B6	B5	B4	B3	B2	B1	
I/S, coal flow 51.2	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.45	0.82	0.75	0.00	0.56	0.64	0.00	Combustion index
Avg 673	621	657	682	655	730	691	Burner tip temp
Avg 514	524	530	522	486	498	522	Burner body temp
Avg 86	127	2	111	95	74	106	IBAMs flow KPPH
Total 515	76.5 West	SA damper Position			East	76.9	

4775 Total SA flow

-0.28 Furnace Press

Drum Level -0.42 Avg
0.69 West -0.53 Middle -6.35 East

O2 West 2.57 | O2 East 3.54

Windbox press 2.41	D6	D5	D4	D3	D2	D1	
I/S, coal flow 53.0	4.00	4.00	4.00	4.00	2.75	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	6.5	8.0	Outer register setting
	5	5	5	5	3	5	Inner Air setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.49 Avg	0.31	0.70	0.00	0.62	0.67	0.60	Combustion index
704 Avg	709	650	662	694	817	693	Burner tip temp
513 Avg	511	515	511	515	491	537	Burner body temp
93 Avg	100	88	86	91	114	85	IBAMs flow KPPH
557 Total	76.8 West	SA damper Position			East	77.4	

Windbox press 2.56	H6	H5	H4	H3	H2	H1	
I/S, coal flow 52.6	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.43 Avg	0.59	0.30	0.35	0.55	0.49	0.27	Combustion index
673 Avg	656	702	668	679	616	718	Burner tip temp
525 Avg	517	538	531	508	531	525	Burner body temp
92 Avg	102	99	90	90	84	89	IBAMs flow KPPH
554 Total	76.2 West	SA damper Position			East	76.2	

Windbox press 2.79	C6	C5	C4	C3	C2	C1	
I/S, coal flow 52.1	3.50	4.00	4.00	2.75	4.00	4.00	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	5	5	3	5	5	Inner Air setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.50 Avg	0.44	0.36	0.49	0.34	0.87	0.46	Combustion index
713 Avg	685	725	709	788	696	676	Burner tip temp
510 Avg	494	521	497	525	518	504	Burner body temp
91 Avg	89	95	90	72	95	104	IBAMs flow KPPH
546 Total	76.7 West	SA damper Position			East	76.9	

Windbox press 2.50	G6	G5	G4	G3	G2	G1	
I/S, coal flow 52.9	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	5	5	5	4	5	5	Inner Air setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.60 Avg	0.69	0.76	0.76	0.26	0.61	0.47	Combustion index
645 Avg	622	655	629	652	609	699	Burner tip temp
516 Avg	530	525	493	507	523	514	Burner body temp
91 Avg	91	78	97	91	85	103	IBAMs flow KPPH
546 Total	76.1 West	SA damper Position			East	76.4	

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	3.4	4.0	2.9	EAST
13'	3.1	4.0	3.6	FBG
18'	2.9	4.2	3.8	CHD
Ave		3.54	% O2	

West % O2

6'	1.7	3.1	3.2	EAST
13'	2.7	2.6	2.2	FBG
18'	0.0	2.9	2.0	CHD
Ave		2.57	% O2	

O2 Actual	3.07
O2 Target	2.96
NOx Actual	0.386
NOx Target	0.400
Scrub Inlet SO2	513 ppm

West		East
706	SA Air Temp	695
4.7	SA Duct Pr	4.3
723	Exit Gas Temp	743
2.57	Econ O2 %	3.54
0.69	Drum Level	-6.35
729	1st stg inlet t	724
121	1st stg sprays	83
705	1st stg outlet t	707
778	2nd stg inlet t	778
61	2nd stg sprays	71
762	2nd stg outlet t	761

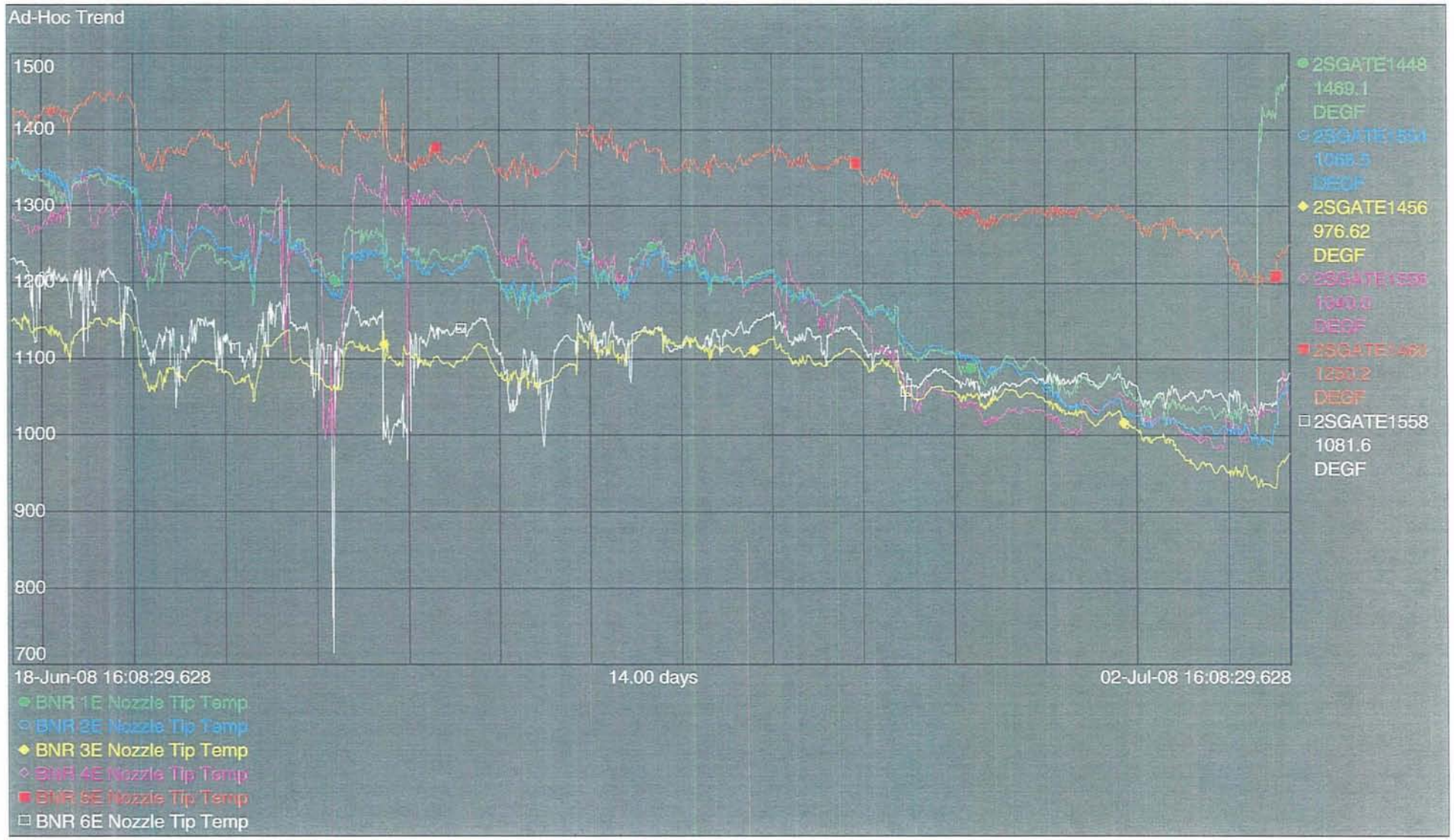
Total sprays 383

79.5 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 950 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 949 MW | Menu | AQCS | Coal Yard | Common | 08-Jul-08 09:45:00 IPSC

IP70021592

Display Unit 2 Burner Overview, 08-Jul-08 09:45:14

For a Known reason E1 temp shot up. SA damper were at 55% instead of 35% for several days prior. No setpoints were changed.



Display Trend Display1, 02-Jul-08 16:08:44

IP70215 93

Previous

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U2 O2 Trends

928.67 mw
359.94 tph

O2 West 3.35 | O2 East 2.44

Windbox press 1.69	E6	E5	E4	E3	E2	E1	
I/S, coal flow 0.0	4.00	2.75	3.50	2.75	2.75	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	6.5	6.0	Outer register setting
	7	3	3	3	3	7	Inner Air setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.04	0.04	0.06	0.08	0.00	0.00	0.07	Combustion index
Avg 1189	1125	1354	1191	1093	1179	1182	Burner tip temp
Avg 772	744	843	781	716	795	754	Burner body temp
Avg 72	82	67	78	64	58	81	IBAMs flow KPPH
Total 432	34.8 West	SA damper Position			East	35.2	

1/3 OFA % dmpr 2
2/3 OFA % dmpr 0

Windbox press 2.99	A6	A5	A4	A3	A2	A1	
I/S, coal flow 51.7	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	7	3	5	3	7	Inner Air setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.49	0.42	0.31	0.64	0.33	0.49	0.72	Combustion index
Avg 690	678	708	712	668	699	672	Burner tip temp
Avg 529	537	558	502	519	529	528	Burner body temp
Avg 100	100	95	96	84	120	105	IBAMs flow KPPH
Total 602	75.2 West	SA damper Position			East	75.6	

PSH Dmpr 99.5 | RH Dmpr 30.4

Windbox press 3.45	F6	F5	F4	F3	F2	F1	
I/S, coal flow 50.7	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.39	0.64	0.00	0.66	0.35	0.00	0.58	Combustion index
Avg 641	664	663	757	598	486	677	Burner tip temp
Avg 532	553	554	526	518	517	525	Burner body temp
Avg 101	111	86	96	109	89	110	IBAMs flow KPPH
Total 603	76.3 West	SA damper Position			East	76.1	

Duct Press actual 53.4 | target 50.7

Windbox press 2.87	B6	B5	B4	B3	B2	B1	
I/S, coal flow 50.9	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.42	0.60	0.76	0.00	0.59	0.60	0.00	Combustion index
Avg 685	677	644	681	671	742	701	Burner tip temp
Avg 521	534	535	527	493	512	535	Burner body temp
Avg 92	134	2	112	102	85	112	IBAMs flow KPPH
Total 551	76.3 West	SA damper Position			East	76.2	

4710 Total SA flow

-0.55 Furnace Press

Drum Level -0.73 Avg
0.21 West -0.73 Middle -3.06 East

O2 West 3.35 | O2 East 2.44

Windbox press 2.85	D6	D5	D4	D3	D2	D1	
I/S, coal flow 51.3	4.00	4.00	4.00	4.00	2.75	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	3	5	Inner Air setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.51 Avg	0.52	0.58	0.47	0.44	0.48	0.67	Combustion index
724 Avg	712	666	710	715	826	710	Burner tip temp
524 Avg	522	516	534	527	502	546	Burner body temp
106 Avg	108	95	94	99	119	110	IBAMs flow KPPH
636 Total	76.7 West	SA damper Position			East	75.2	

Windbox press 2.97	H6	H5	H4	H3	H2	H1	
I/S, coal flow 51.9	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.51 Avg	0.61	0.56	0.45	0.20	0.29	0.84	Combustion index
671 Avg	669	729	664	642	663	656	Burner tip temp
532 Avg	524	540	534	516	543	536	Burner body temp
99 Avg	109	106	96	97	89	94	IBAMs flow KPPH
592 Total	75.6 West	SA damper Position			East	75.9	

Windbox press 3.20	C6	C5	C4	C3	C2	C1	
i/S, coal flow 51.3	3.50	4.00	4.00	2.75	4.00	4.00	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	5	5	3	5	5	Inner Air setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.56 Avg	0.53	0.54	0.62	0.64	0.52	0.60	Combustion index
687 Avg	715	698	691	650	692	679	Burner tip temp
517 Avg	500	521	503	537	532	518	Burner body temp
98 Avg	96	101	97	77	102	113	IBAMs flow KPPH
590 Total	75.7 West	SA damper Position			East	75.7	

Windbox press 2.92	G6	G5	G4	G3	G2	G1	
I/S, coal flow 51.9	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	5	5	5	4	5	5	Inner Air setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.61 Avg	0.61	0.77	0.56	0.53	0.70	0.54	Combustion index
661 Avg	653	622	643	700	611	736	Burner tip temp
520 Avg	533	524	503	515	529	521	Burner body temp
98 Avg	97	83	106	99	91	110	IBAMs flow KPPH
589 Total	75.7 West	SA damper Position			East	76.5	

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

East % O2				
6'	1.7	2.7	3.9	E
13'	0.6	2.2	3.0	A F B
18'	1.5	3.0	2.8	G C
		2.44	% O2	H D

Ave

West % O2				
6'	5.3	4.3	3.5	E
13'	4.1	2.7	2.0	A F B
18'	0.0	2.7	1.8	G C
Ave		3.35	% O2	H D

O2 Actual	2.85	
O2 Target	3.05	
NOx Actual	0.414	
NOx Target	0.419	
Scrub Inlet SO2	505	ppm

West		East
713	SA Air Temp	714
5.3	SA Duct Pr	4.9
734	Exit Gas Temp	767
3.35	Econ O2 %	2.44
0.21	Drum Level	-3.06
726	1st stg inlet t	741
62	1st stg sprays	57
716	1st stg outlet t	711
777	2nd stg inlet t	777
25	2nd stg sprays	31
771	2nd stg outlet t	771

Total sprays 287

55.9 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 922 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 929 MW | Menu | AQCS | Coal Yard | Common | 27-Jun-08 07:30:31 | IPSC

IP7021594

Display Unit 2 Burner Overview, 27-Jun-08 07:30:59

After E5 [illegible]

Previous | Next | U2 O2 Trends

948.13 mw
347.81 tph

O2 West 2.91 | O2 East 2.77

Windbox press 1.74	E6	E5	E4	E3	E2	E1	
I/S, coal flow 0.0	4.00	2.75	3.50	2.75	2.75	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	6.5	6.0	Outer register setting
	7	3	3	3	3	7	Inner Air setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.05	0.04	0.07	0.07	0.09	0.00	0.06	Combustion index
Avg 1229	1136	1373	1248	1134	1236	1248	Burner tip temp
Avg 793	755	862	809	733	822	777	Burner body temp
Avg 73	82	68	79	65	58	81	IBAMs flow KPPH
Total 436	35.5 West	SA damper Position			East	35.2	

1/3 OFA % dmpr 0
2/3 OFA % dmpr 27

Windbox press 2.99	A6	A5	A4	A3	A2	A1	
I/S, coal flow 50.7	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	7	3	5	3	7	Inner Air setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.53	0.68	0.26	0.73	0.45	0.52	0.67	Combustion index
Avg 707	711	732	720	683	698	696	Burner tip temp
Avg 540	548	569	516	528	542	537	Burner body temp
Avg 100	99	95	95	83	119	105	IBAMs flow KPPH
Total 599	73.3 West	SA damper Position			East	72.6	

PSH Dmpr 97.5 | RH Dmpr 31.9

Windbox press 3.49	F6	F5	F4	F3	F2	F1	
I/S, coal flow 49.2	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.39	0.65	0.00	0.66	0.51	0.00	0.64	Combustion index
Avg 666	670	683	780	622	511	726	Burner tip temp
Avg 543	562	563	535	528	532	535	Burner body temp
Avg 100	110	85	96	109	89	110	IBAMs flow KPPH
Total 601	72.5 West	SA damper Position			East	72.7	

Duct Press actual 53.6 | target 50.7

Windbox press 2.91	B6	B5	B4	B3	B2	B1	
I/S, coal flow 48.2	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.44	0.64	0.75	0.00	0.57	0.65	0.00	Combustion index
Avg 702	688	672	683	707	720	743	Burner tip temp
Avg 533	542	542	539	507	523	548	Burner body temp
Avg 91	134	2	112	102	84	110	IBAMs flow KPPH
Total 545	72.7 West	SA damper Position			East	72.2	

4868 Total SA flow

Drum Level -1.18 Avg
-0.14 West -1.18 Middle -5.08 East

-0.63 Furnace Press

O2 West 2.91 | O2 East 2.77

	D6	D5	D4	D3	D2	D1	Windbox press 3.00
Spin Vane setting	4.00	4.00	4.00	4.00	2.75	4.00	I/S, coal flow 49.4
Outer register setting	8.0	5.5	5.0	5.0	5.5	8.0	
Inner Air setting	5	5	5	5	3	5	
Adjustable restrictor setting	21.00	21.00	19.69	18.09	17.57	17.42	
Combustion index	0.32	0.57	0.55	0.60	0.47	0.50	0.49 Avg
Burner tip temp	737	683	739	744	773	724	733 Avg
Burner body temp	531	526	542	537	514	555	535 Avg
IBAMs flow KPPH	107	94	95	98	125	117	106 Avg
	72.3 West	SA damper Position			East	72.5	639 Total

	H6	H5	H4	H3	H2	H1	Windbox press 3.03
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 49.9
Outer register setting	8.0	5.5	5.5	5.5	5.5	8.0	
Inner Air setting	5	5	5	5	5	5	
Adjustable restrictor setting	17.42	17.57	18.09	19.69	21.00	21.00	
Combustion index	0.67	0.78	0.51	0.27	0.40	0.54	0.52 Avg
Burner tip temp	684	751	695	713	658	670	695 Avg
Burner body temp	532	551	543	525	552	546	542 Avg
IBAMs flow KPPH	109	106	96	96	89	94	98 Avg
	73.3 West	SA damper Position			East	72.6	591 Total

	C6	C5	C4	C3	C2	C1	Windbox press 3.28
Spin Vane setting	3.50	4.00	4.00	2.75	4.00	4.00	I/S, coal flow 50.3
Outer register setting	7.0	5.5	5.5	5.5	5.5	7.0	
Inner Air setting	5	5	5	3	5	5	
Adjustable restrictor setting	21.00	21.00	20.41	19.24	18.76	17.31	
Combustion index	0.73	0.58	0.46	0.49	0.56	0.45	0.55 Avg
Burner tip temp	753	704	676	765	691	700	715 Avg
Burner body temp	509	533	512	546	541	528	528 Avg
IBAMs flow KPPH	96	101	97	76	102	113	98 Avg
	72.9 West	SA damper Position			East	73.2	586 Total

	G6	G5	G4	G3	G2	G1	Windbox press 3.07
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 50.0
Outer register setting	9.0	5.5	5.5	5.5	5.5	9.0	
Inner Air setting	5	5	5	4	5	5	
Adjustable restrictor setting	17.00	17.97	18.35	20.75	21.00	21.00	
Combustion index	0.61	0.72	0.72	0.61	0.46	0.76	0.66 Avg
Burner tip temp	657	646	643	662	630	664	650 Avg
Burner body temp	542	531	507	521	540	524	527 Avg
IBAMs flow KPPH	97	83	105	99	91	108	98 Avg
	72.7 West	SA damper Position			East	72.5	585 Total

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

East % O2

6'	2.7	4.0	3.8	E A
13'	1.5	2.8	2.4	F B
18'	2.1	3.0	2.8	G C
		2.77	% O2	H D
Ave				

West % O2

6'	5.2	4.4	3.7	E A
13'	3.4	2.4	1.4	F B
18'	0.0	1.8	1.0	G C
Ave		2.91	% O2	H D

O2 Actual	2.83		
O2 Target	2.96		
NOx Actual	0.427		
NOx Target	0.444		
Scrub Inlet SO2	587	ppm	
West			East
719	SA Air Temp		721
5.6	SA Duct Pr		5.3
736	Exit Gas Temp		767
2.91	Econ O2 %		2.77
-0.14	Drum Level		-5.08
720	1st stg inlet t		729
31	1st stg sprays		36
716	1st stg outlet t		713
779	2nd stg inlet t		778
28	2nd stg sprays		33
772	2nd stg outlet t		773
Total sprays 200			

94.9 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 945 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 948 MW | Menu | AQCS | Coal Yard | Common | 25-Jun-08 16:21:02 | IPSC

IP70215595

Display Unit 2 Burner Overview, 25-Jun-08 16:21:23

After [illegible] inner [illegible]
D2 inner [illegible] to 3

Previous

948.97 mw
351.26 tph

O2 West 3.31 O2 East 2.85

Windbox press 1.72	E6	E5	E4	E3	E2	E1
I/S, coal flow 0.0	4.00	3.50	3.50	2.75	2.75	4.00
	8.0	5.5	5.5	5.5	6.5	6.0
	7	3	3	3	3	7
	17.88	18.10	18.90	20.99	21.00	21.00
Avg 0.06	0.04	0.06	0.09	0.10	0.00	0.06
Avg 1225	1136	1385	1220	1137	1227	1244
Avg 785	746	861	802	724	811	766
Avg 73	82	75	79	64	58	81
Total 439	35.5 West	SA damper Position			East	35.2

Windbox press 3.08	A6	A5	A4	A3	A2	A1
I/S, coal flow 50.1	4.00	4.00	3.50	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	7.0
	5	7	3	5	3	7
	21.00	21.00	20.99	18.90	18.10	17.88
Avg 0.50	0.47	0.23	0.68	0.39	0.58	0.68
Avg 701	704	728	714	673	698	688
Avg 531	540	559	510	520	533	528
Avg 100	100	95	96	84	119	105
Total 599	72.6 West	SA damper Position			East	73.0

Windbox press 3.60	F6	F5	F4	F3	F2	F1
I/S, coal flow 50.2	4.00	3.00	3.50	4.00	4.00	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	5	5	5	5	5	5
	17.85	17.85	18.21	20.09	21.00	21.00
Avg 0.37	0.54	0.00	0.68	0.47	0.00	0.57
Avg 656	662	670	766	618	504	716
Avg 534	553	556	528	519	522	526
Avg 100	111	87	97	109	90	110
Total 601	73.4 West	SA damper Position			East	73.2

Windbox press 2.98	B6	B5	B4	B3	B2	B1
I/S, coal flow 49.6	4.00	4.00	4.00	3.50	4.00	3.50
	9.0	5.5	5.0	5.0	5.5	9.0
	5	5	5	5	5	5
	21.00	21.00	20.19	18.70	18.15	17.75
Avg 0.41	0.54	0.75	0.00	0.55	0.63	0.00
Avg 697	683	667	678	712	709	731
Avg 525	535	536	530	498	514	537
Avg 91	135	2	112	102	85	112
Total 548	73.4 West	SA damper Position			East	73.3

Drum Level -1.34 Avg
-0.45 West -1.28 Middle -5.01 East

Spin Vane setting	
Outer register setting	
Inner Air setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
1/3 OFA % dmpr	1
2/3 OFA % dmpr	27
PSH Dmpr	RH Dmpr
100.0	30.0
Duct Press actual	target
52.8	51.4
4889 Total SA flow	
-0.65 Furnace Press	

O2 West 3.31 O2 East 2.85

Windbox press 2.98	D6	D5	D4	D3	D2	D1
I/S, coal flow 50.2	4.00	4.00	4.00	4.00	2.75	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	5	5	5	5	3	5
	21.00	21.00	19.69	18.09	17.57	17.42
0.47 Avg	0.25	0.54	0.55	0.55	0.43	0.49
723 Avg	718	670	733	735	769	714
526 Avg	522	518	536	529	506	545
105 Avg	107	95	95	98	126	119
629 Total	73.3 West	SA damper Position			East	72.8

Windbox press 3.11	H6	H5	H4	H3	H2	H1
I/S, coal flow 51.0	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	8.0
	5	5	5	5	5	5
	17.42	17.57	18.09	19.69	21.00	21.00
0.53 Avg	0.71	0.74	0.55	0.26	0.42	0.51
692 Avg	677	753	683	715	663	663
534 Avg	525	544	535	516	545	537
99 Avg	110	107	96	97	89	94
592 Total	73.1 West	SA damper Position			East	73.6

Windbox press 3.38	C6	C5	C4	C3	C2	C1
I/S, coal flow 50.2	3.50	4.00	4.00	2.75	4.00	4.00
	7.0	5.5	5.5	5.5	5.5	7.0
	5	5	5	3	5	5
	21.00	21.00	20.41	19.24	18.76	17.31
0.52 Avg	0.72	0.53	0.43	0.46	0.48	0.50
714 Avg	761	697	675	778	691	683
520 Avg	501	526	506	537	533	520
98 Avg	97	102	98	77	103	113
588 Total	73.1 West	SA damper Position			East	73.4

Windbox press 3.04	G6	G5	G4	G3	G2	G1
I/S, coal flow 50.0	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	5.5	5.5	5.5	5.5	9.0
	5	5	5	4	5	5
	17.00	17.97	18.35	20.75	21.00	21.00
0.67 Avg	0.61	0.72	0.76	0.59	0.53	0.81
643 Avg	655	634	632	657	629	655
519 Avg	535	523	499	513	531	516
98 Avg	97	83	106	99	92	109
586 Total	73.3 West	SA damper Position			East	73.2

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

Next

U2 O2 Trends

East % O2

6'	2.7	4.3	4.7	E
13'	1.5	2.7	2.6	A F B
18'	2.1	2.7	2.7	G C
Ave		2.85	% O2	H D

West % O2

6'	5.6	4.7	4.6	E
13'	3.1	2.3	2.3	A F B
18'	0.0	2.0	1.3	G C
Ave		3.31	% O2	H D

O2 Actual	3.03
O2 Target	2.97
NOx Actual	0.425
NOx Target	0.449

West		East
708	SA Air Temp	709
5.5	SA Duct Pr	5.1
728	Exit Gas Temp	757
3.31	Econ O2 %	2.85
-0.45	Drum Level	-5.01
723	1st stg inlet t	731
42	1st stg sprays	49
717	1st stg outlet t	709
777	2nd stg inlet t	779
52	2nd stg sprays	66
764	2nd stg outlet t	765

92.1 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 946 MW | Menu | AQCS | **U2 BURNER OVRWS** Burner Fronts | Unit 2 949 MW | Menu | AQCS | Coal Yard | Common | 25-Jun-08 13:16:02 IPSC

IP7021596

Display Unit 2 Burner Overview, 25-Jun-08 13:16:13

Pr [illegible] E5 inner 5 to 3
D2 inner 4 to 3

Previous | Next | U2 O2 Trends

947.76 mw
351.13 tph

O2 West 2.99 | O2 East 3.03

Windbox press 2.53	E6	E5	E4	E3	E2	E1	
I/S, coal flow 0.0	4.00	3.50	3.50	2.75	2.75	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	6.5	6.0	Outer register setting
	7	5	3	3	3	7	Inner Air setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.06	0.04	0.07	0.09	0.11	0.00	0.06	Combustion index
Avg 1191	1093	1366	1203	1102	1186	1191	Burner tip temp
Avg 780	748	855	792	721	804	762	Burner body temp
Avg 80	89	83	86	70	62	89	IBAMs flow KPPH
Total 479	44.9 West	SA damper Position			East	45.4	

1/3 OFA % dmpr 2
2/3 OFA % dmpr 28

Windbox press 3.13	A6	A5	A4	A3	A2	A1	
I/S, coal flow 50.5	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	7	3	5	3	7	Inner Air setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.53	0.62	0.24	0.66	0.44	0.53	0.69	Combustion index
Avg 699	701	728	715	675	691	682	Burner tip temp
Avg 534	542	562	513	522	536	529	Burner body temp
Avg 100	100	95	96	84	119	105	IBAMs flow KPPH
Total 599	73.0 West	SA damper Position			East	73.5	

PSH Dmpr 89.5 | RH Dmpr 39.4

Windbox press 3.59	F6	F5	F4	F3	F2	F1	
I/S, coal flow 50.0	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.37	0.53	0.00	0.63	0.47	0.00	0.59	Combustion index
Avg 658	667	665	771	618	512	716	Burner tip temp
Avg 537	558	560	530	520	524	529	Burner body temp
Avg 100	110	86	97	108	90	110	IBAMs flow KPPH
Total 601	73.5 West	SA damper Position			East	73.5	

Duct Press actual 52.8 | target 51.5

Windbox press 2.96	B6	B5	B4	B3	B2	B1	
I/S, coal flow 49.6	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.42	0.58	0.74	0.00	0.53	0.65	0.00	Combustion index
Avg 701	679	672	682	713	724	732	Burner tip temp
Avg 527	537	539	535	499	514	540	Burner body temp
Avg 91	135	2	112	101	85	111	IBAMs flow KPPH
Total 546	73.7 West	SA damper Position			East	73.5	

4910 Total SA flow

-0.74 Furnace Press

Drum Level -0.96 Avg
0.15 West -1.18 Middle -3.35 East

O2 West 2.99 | O2 East 3.03

Windbox press 2.95	D6	D5	D4	D3	D2	D1	
I/S, coal flow 49.7	4.00	4.00	4.00	4.00	2.75	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	4	5	Inner Air setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.48 Avg	0.27	0.53	0.56	0.61	0.41	0.48	Combustion index
727 Avg	721	668	741	743	777	709	Burner tip temp
529 Avg	525	521	538	534	508	546	Burner body temp
102 Avg	107	94	94	98	115	107	IBAMs flow KPPH
615 Total	74.1 West	SA damper Position			East	73.8	

Windbox press 2.91	H6	H5	H4	H3	H2	H1	
I/S, coal flow 50.0	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.53 Avg	0.70	0.76	0.55	0.24	0.37	0.58	Combustion index
705 Avg	686	761	690	720	702	666	Burner tip temp
537 Avg	529	548	538	518	550	539	Burner body temp
98 Avg	109	106	96	96	89	94	IBAMs flow KPPH
590 Total	74.2 West	SA damper Position			East	73.7	

Windbox press 3.33	C6	C5	C4	C3	C2	C1	
I/S, coal flow 50.9	3.50	4.00	4.00	2.75	4.00	4.00	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	5	5	3	5	5	Inner Air setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.52 Avg	0.69	0.55	0.41	0.50	0.48	0.52	Combustion index
699 Avg	768	701	670	684	687	685	Burner tip temp
522 Avg	503	528	507	538	534	521	Burner body temp
98 Avg	96	101	97	76	102	113	IBAMs flow KPPH
586 Total	74.1 West	SA damper Position			East	73.8	

Windbox press 2.84	G6	G5	G4	G3	G2	G1	
I/S, coal flow 50.2	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	5	5	5	4	5	5	Inner Air setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.68 Avg	0.64	0.76	0.77	0.62	0.47	0.80	Combustion index
649 Avg	657	629	639	673	634	661	Burner tip temp
522 Avg	538	527	501	515	534	517	Burner body temp
97 Avg	97	83	105	99	91	108	IBAMs flow KPPH
585 Total	74.1 West	SA damper Position			East	74.0	

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

East % O2

6'	2.6	3.9	4.7	E A
13'	1.6	3.1	3.3	F B
18'	2.0	3.2	3.1	G C
Ave		3.03	% O2	H D

West % O2

6'	5.6	3.8	3.7	E A
13'	3.7	2.0	1.6	F B
18'	0.0	1.9	1.3	G C
Ave		2.99	% O2	H D

O2 Actual	2.96
O2 Target	2.96
NOx Actual	0.442
NOx Target	0.445

West		East
713	SA Air Temp	711
5.5	SA Duct Pr	5.2
732	Exit Gas Temp	756
2.99	Econ O2 %	3.03
0.15	Drum Level	-3.35
716	1st stg inlet t	719
22	1st stg sprays	15
715	1st stg outlet t	711
783	2nd stg inlet t	782
73	2nd stg sprays	92
761	2nd stg outlet t	762

80.6 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 949 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 948 MW | Menu | AQCS | Coal Yard | Common | 25-Jun-08 09:34:02 | IPSC

IP7021597

Display Unit 2 Burner Overview, 25-Jun-08 09:34:15

Previous

950.38 mw
374.51 tph

O2 West 3.13 — O2 East 2.92

Windbox press 1.96	E6	E5	E4	E3	E2	E1	
I/S, coal flow 0.0	4.00	3.50	3.50	2.75	2.75	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	6.5	6.0	Outer register setting
	7	5	3	3	3	7	Inner Air setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.08	0.05	0.09	0.06	0.12	0.08	0.05	Combustion index
Avg 1289	1169	1448	1276	1151	1348	1339	Burner tip temp
Avg 833	800	900	847	738	889	823	Burner body temp
Avg 73	82	75	79	64	58	81	IBAMs flow KPPH
Total 439	34.6 West	SA damper Position			East	35.4	

1/3 OFA % dmpr 3
2/3 OFA % dmpr 0

Windbox press 3.40	A6	A5	A4	A3	A2	A1	
I/S, coal flow 53.3	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	7	3	5	3	7	Inner Air setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.61	0.66	0.61	0.60	0.46	0.68	0.67	Combustion index
Avg 696	703	690	730	682	689	680	Burner tip temp
Avg 538	552	562	518	528	536	531	Burner body temp
Avg 101	102	95	97	84	121	107	IBAMs flow KPPH
Total 607	78.7 West	SA damper Position			East	78.4	

PSH Dmpr 99.9 — RH Dmpr 30.1

Windbox press 3.88	F6	F5	F4	F3	F2	F1	
I/S, coal flow 53.1	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.36	0.61	0.00	0.50	0.37	0.00	0.67	Combustion index
Avg 684	663	790	782	627	533	709	Burner tip temp
Avg 544	569	570	534	524	527	541	Burner body temp
Avg 102	112	88	97	110	91	112	IBAMs flow KPPH
Total 610	77.5 West	SA damper Position			East	77.9	

Duct Press actual 55.3 — target 55.9

Windbox press 3.30	B6	B5	B4	B3	B2	B1	
I/S, coal flow 52.3	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.44	0.60	0.74	0.00	0.68	0.64	0.00	Combustion index
Avg 702	706	661	695	681	693	779	Burner tip temp
Avg 534	553	548	541	497	519	548	Burner body temp
Avg 96	137	27	112	103	86	113	IBAMs flow KPPH
Total 578	78.2 West	SA damper Position			East	78.4	

4876 Total SA flow

-0.39 Furnace Press

Drum Level -1.01 Avg
0.02 West -1.20 Middle -6.28 East

O2 West 3.13 — O2 East 2.92

	D6	D5	D4	D3	D2	D1	Windbox press 3.26
I/S, coal flow 52.9	4.00	4.00	4.00	4.00	2.75	4.00	
	8.0	5.5	5.0	5.0	5.5	8.0	
	5	5	5	5	4	5	
	21.00	21.00	19.69	18.09	17.57	17.42	
0.45 Avg	0.33	0.63	0.00	0.53	0.57	0.66	
714 Avg	742	675	705	674	781	707	
532 Avg	535	527	535	536	504	553	
106 Avg	109	96	94	97	123	117	
636 Total	77.4 West	SA damper Position			East	77.4	

	H6	H5	H4	H3	H2	H1	Windbox press 3.41
I/S, coal flow 53.5	4.00	4.00	4.00	4.00	4.00	4.00	
	8.0	5.5	5.5	5.5	5.5	8.0	
	5	5	5	5	5	5	
	17.42	17.57	18.09	19.69	21.00	21.00	
0.50 Avg	0.65	0.67	0.49	0.15	0.81	0.22	
697 Avg	682	725	702	655	700	721	
544 Avg	537	556	549	527	545	548	
100 Avg	111	108	97	96	91	96	
598 Total	78.4 West	SA damper Position			East	78.3	

	C6	C5	C4	C3	C2	C1	Windbox press 3.56
I/S, coal flow 53.7	3.50	4.00	4.00	2.75	4.00	4.00	
	7.0	5.5	5.5	5.5	5.5	7.0	
	5	5	5	3	5	5	
	21.00	21.00	20.41	19.24	18.76	17.31	
0.41 Avg	0.40	0.50	0.46	0.26	0.42	0.43	
721 Avg	690	727	683	808	734	686	
529 Avg	510	539	515	548	541	523	
99 Avg	96	104	99	78	102	114	
593 Total	78.3 West	SA damper Position			East	78.0	

	G6	G5	G4	G3	G2	G1	Windbox press 3.22
I/S, coal flow 54.6	4.00	4.00	4.00	4.00	4.00	4.00	
	9.0	5.5	5.5	5.5	5.5	9.0	
	5	5	5	4	5	5	
	17.00	17.97	18.35	20.75	21.00	21.00	
0.56 Avg	0.64	0.80	0.59	0.53	0.23	0.57	
666 Avg	654	686	638	700	638	682	
532 Avg	549	540	519	525	535	523	
98 Avg	98	85	105	101	91	110	
590 Total	78.4 West	SA damper Position			East	78.3	

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

Next

U2 O2 Trends

East % O2				
6'	3.9	4.9	3.7	E A
13'	2.1	2.9	2.7	F B
18'	1.3	2.2	2.7	G C
Ave		2.92	% O2	H D

West % O2				
6'	4.7	4.1	3.4	E A
13'	3.2	2.9	2.2	F B
18'	0.0	2.5	2.0	G C
Ave		3.13	% O2	H D

O2 Actual 3.00
O2 Target 2.97
NOx Actual 0.423
NOx Target 0.420

West		East
731	SA Air Temp	723
5.7	SA Duct Pr	5.3
744	Exit Gas Temp	769
3.13	Econ O2 %	2.92
0.02	Drum Level	-6.28
730	1st stg inlet t	731
101	1st stg sprays	45
710	1st stg outlet t	710
773	2nd stg inlet t	774
16	2nd stg sprays	16
773	2nd stg outlet t	775

86.0 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 944 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 950 MW | Menu | AQCS | Coal Yard | Common | 19-Jun-08 13:50:01 | IPSC

IP7021598

Display Unit 2 Burner Overview, 19-Jun-08 13:50:20

C3 Keep cycling up past 9r 'E need to adjust more

D2 needs adjustment

S120 D2 @ 75 spin, 4 inner

C3 @ 75 spin

Previous | Next | U2 O2 Trends

804.13 mw
326.13 tph

O2 West 3.10 | O2 East 3.10

Windbox press	E6	E5	E4	E3	E2	E1	
0.92	4.00	3.50	3.50	2.75	2.75	4.00	Spin Vane setting
I/S, coal flow	8.0	5.5	5.5	5.5	6.5	6.0	Outer register setting
0.0	7	5	3	3	3	7	Inner Air setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.03	0.00	0.07	0.05	0.07	0.00	0.00	Combustion index
Avg 1259	1176	1401	1303	1099	1310	1283	Burner tip temp
Avg 808	774	873	823	709	869	799	Burner body temp
Avg 63	68	64	68	55	51	69	IBAMs flow KPPH
Total 378	34.7 West	SA damper Position			East	35.5	

1/3 OFA % dmpr 2
2/3 OFA % dmpr 1

Windbox press	A6	A5	A4	A3	A2	A1	
1.78	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
47.0	5	7	3	5	3	7	Inner Air setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.50	0.31	0.54	0.46	0.32	0.55	0.74	Combustion index
Avg 681	675	683	721	666	682	655	Burner tip temp
Avg 508	518	531	492	500	508	500	Burner body temp
Avg 85	85	80	82	71	101	88	IBAMs flow KPPH
Total 509	68.2 West	SA damper Position			East	68.5	

PSH Dmpr 67.4 | RH Dmpr 60.2

Windbox press	F6	F5	F4	F3	F2	F1	
2.15	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
46.3	5	5	5	5	5	5	Inner Air setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.28	0.48	0.00	0.42	0.27	0.00	0.56	Combustion index
Avg 662	653	720	780	601	528	691	Burner tip temp
Avg 515	531	546	503	498	504	509	Burner body temp
Avg 86	96	74	82	92	78	94	IBAMs flow KPPH
Total 518	68.9 West	SA damper Position			East	68.6	

Duct Press actual 55.4 | target 49.6

Windbox press	B6	B5	B4	B3	B2	B1	
1.64	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
I/S, coal flow	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
46.5	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.39	0.64	0.63	0.00	0.54	0.55	0.00	Combustion index
Avg 675	661	645	687	648	690	713	Burner tip temp
Avg 506	524	522	511	473	496	512	Burner body temp
Avg 78	115	2	94	85	75	97	IBAMs flow KPPH
Total 470	68.3 West	SA damper Position			East	69.0	

3860 Total SA flow

-0.50 Furnace Press

Drum Level -1.05 Avg
-0.59 West -0.97 Middle -3.38 East

O2 West 3.10 | O2 East 3.10

	D6	D5	D4	D3	D2	D1	Windbox press 1.67
Spin Vane setting	4.00	4.00	4.00	4.00	3.50	4.00	I/S, coal flow
Outer register setting	8.0	5.5	5.0	5.0	5.5	8.0	46.9
Inner Air setting	5	5	5	5	5	5	
Adjustable restrictor setting	21.00	21.00	19.69	18.09	17.57	17.42	
Combustion index	0.20	0.58	0.00	0.46	0.51	0.55	0.38 Avg
Burner tip temp	716	658	685	659	821	679	703 Avg
Burner body temp	506	508	509	509	484	524	506 Avg
IBAMs flow KPPH	90	80	80	82	2	36	56 Avg
	68.9 West	SA damper Position			East	69.4	336 Total

	H6	H5	H4	H3	H2	H1	Windbox press 1.67
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow
Outer register setting	8.0	5.5	5.5	5.5	5.5	8.0	46.8
Inner Air setting	5	5	5	5	5	5	
Adjustable restrictor setting	17.42	17.57	18.09	19.69	21.00	21.00	
Combustion index	0.55	0.56	0.45	0.13	0.70	0.33	0.47 Avg
Burner tip temp	676	718	694	702	687	699	697 Avg
Burner body temp	508	528	530	503	522	518	517 Avg
IBAMs flow KPPH	93	90	83	82	75	80	84 Avg
	69.0 West	SA damper Position			East	68.2	503 Total

	C6	C5	C4	C3	C2	C1	Windbox press 1.92
Spin Vane setting	3.50	4.00	4.00	3.50	4.00	4.00	I/S, coal flow
Outer register setting	7.0	5.5	5.5	5.5	5.5	7.0	46.9
Inner Air setting	5	5	5	3	5	5	
Adjustable restrictor setting	21.00	21.00	20.41	19.24	18.76	17.31	
Combustion index	0.41	0.33	0.42	0.11	0.37	0.38	0.35 Avg
Burner tip temp	685	713	678	738	724	676	703 Avg
Burner body temp	485	515	488	520	513	498	503 Avg
IBAMs flow KPPH	82	86	84	80	86	95	86 Avg
	68.5 West	SA damper Position			East	68.4	514 Total

	G6	G5	G4	G3	G2	G1	Windbox press 1.72
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow
Outer register setting	9.0	5.5	5.5	5.5	5.5	9.0	46.9
Inner Air setting	5	5	5	4	5	5	
Adjustable restrictor setting	17.00	17.97	18.35	20.75	21.00	21.00	
Combustion index	0.58	0.68	0.59	0.53	0.23	0.47	0.52 Avg
Burner tip temp	643	673	626	676	630	696	659 Avg
Burner body temp	521	513	493	500	516	492	505 Avg
IBAMs flow KPPH	83	75	88	84	77	93	84 Avg
	68.3 West	SA damper Position			East	68.1	503 Total

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

East % O2				
6'	2.5	3.0	3.5	E A
13'	2.4	3.5	3.3	F B
18'	2.0	3.9	3.7	G C
		3.10	% O2	H D
Ave				

West % O2				
6'	3.2	3.3	3.8	E A
13'	2.5	3.7	2.9	F B
18'	0.0	3.1	2.3	G C
Ave		3.10	% O2	H D

O2 Actual	3.12
O2 Target	3.39
NOx Actual	0.353
NOx Target	0.412

West		East
701	SA Air Temp	689
3.7	SA Duct Pr	3.4
722	Exit Gas Temp	747
3.10	Econ O2 %	3.10
-0.59	Drum Level	-3.38
731	1st stg inlet t	722
134	1st stg sprays	35
693	1st stg outlet t	699
773	2nd stg inlet t	774
39	2nd stg sprays	53
758	2nd stg outlet t	758

59.1 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 804 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 804 MW | Menu | AQCS | Coal Yard | Common | 19-Jun-08 07:31:31 | IPSC

IP7021599

Display Unit 2 Burner Overview, 19-Jun-08 07:31:51

Previous | Next | U2 O2 Trends

948.15 mw
381.41 tph

O2 West 3.15 | O2 East 2.84

Windbox press 1.69	E6	E5	E4	E3	E2	E1
I/S, coal flow 0.0	4.00	3.50	3.50	2.75	2.75	4.00
	8.0	5.5	5.5	5.5	6.5	6.0
	7	5	3	3	3	7
	17.88	18.10	18.90	20.99	21.00	21.00
Avg 0.07	0.05	0.06	0.07	0.08	0.08	0.06
Avg 1255	1122	1250	1293	1148	1375	1347
Avg 834	796	876	854	735	891	849
Avg 73	81	74	79	64	58	80
Total 435	34.8 West	SA damper Position			East	35.0

Windbox press 3.04	A6	A5	A4	A3	A2	A1
I/S, coal flow 55.0	4.00	4.00	3.50	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	7.0
	5	7	3	5	3	7
	21.00	21.00	20.99	18.90	18.10	17.88
Avg 0.55	0.41	0.54	0.69	0.36	0.61	0.68
Avg 697	681	714	721	679	697	691
Avg 531	543	559	516	520	524	525
Avg 100	100	94	97	85	121	106
Total 602	80.1 West	SA damper Position			East	80.6

Windbox press 3.51	F6	F5	F4	F3	F2	F1
I/S, coal flow 54.7	4.00	3.00	3.50	4.00	4.00	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	5	5	5	5	5	5
	17.85	17.85	18.21	20.09	21.00	21.00
Avg 0.41	0.70	0.00	0.60	0.53	0.00	0.63
Avg 664	683	695	785	624	484	714
Avg 535	562	563	527	514	515	528
Avg 100	111	88	91	109	89	110
Total 598	80.6 West	SA damper Position			East	79.8

Windbox press 2.93	B6	B5	B4	B3	B2	B1
I/S, coal flow 54.1	4.00	4.00	4.00	3.50	4.00	3.50
	9.0	5.5	5.0	5.0	5.5	9.0
	5	5	5	5	5	5
	21.00	21.00	20.19	18.70	18.15	17.75
Avg 0.49	0.76	0.76	0.00	0.66	0.77	0.00
Avg 696	671	674	690	670	734	736
Avg 527	541	540	535	495	510	538
Avg 91	134	2	110	101	86	112
Total 546	80.0 West	SA damper Position			East	80.7

Drum Level -1.69 Avg
-0.78 West -1.82 Middle -6.87 East

Spin Vane setting	
Outer register setting	
Inner Air setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
1/3 OFA % dmpr	2
2/3 OFA % dmpr	0
PSH Dmpr	RH Dmpr
94.3	35.0
Duct Press actual	target
54.8	56.2
4619	Total SA flow
-0.36	Furnace Press

O2 West 3.15 | O2 East 2.84

Windbox press 2.84	D6	D5	D4	D3	D2	D1
I/S, coal flow 54.3	4.00	4.00	4.00	4.00	3.50	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	5	5	5	5	5	5
	21.00	21.00	19.69	18.09	17.57	17.42
0.55 Avg	0.63	0.64	0.00	0.70	0.58	0.76
718 Avg	702	688	742	674	805	703
524 Avg	526	518	532	528	496	546
90 Avg	107	94	93	97	46	103
540 Total	79.5 West	SA damper Position			East	79.5

Windbox press 3.03	H6	H5	H4	H3	H2	H1
I/S, coal flow 54.7	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	8.0
	5	5	5	5	5	5
	17.42	17.57	18.09	19.69	21.00	21.00
0.61 Avg	0.70	0.76	0.68	0.26	0.73	0.54
710 Avg	684	749	772	674	694	684
537 Avg	530	546	553	518	537	540
98 Avg	109	107	94	95	90	95
590 Total	80.3 West	SA damper Position			East	80.5

Windbox press 3.24	C6	C5	C4	C3	C2	C1
I/S, coal flow 54.6	3.50	4.00	4.00	3.50	4.00	4.00
	7.0	5.5	5.5	5.5	5.5	7.0
	5	5	5	3	5	5
	21.00	21.00	20.41	19.24	18.76	17.31
0.49 Avg	0.43	0.39	0.68	0.34	0.50	0.59
736 Avg	727	732	772	771	729	689
520 Avg	504	532	506	540	531	508
100 Avg	96	102	97	94	102	111
602 Total	79.9 West	SA damper Position			East	80.4

Windbox press 2.96	G6	G5	G4	G3	G2	G1
I/S, coal flow 54.6	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	5.5	5.5	5.5	5.5	9.0
	5	5	5	4	5	5
	17.00	17.97	18.35	20.75	21.00	21.00
0.62 Avg	0.64	0.99	0.63	0.59	0.27	0.57
655 Avg	647	649	647	633	647	704
524 Avg	539	530	510	517	528	519
98 Avg	98	84	106	100	90	111
589 Total	80.4 West	SA damper Position			East	79.9

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

East % O2				
6'	2.3	3.3	4.2	E A
13'	0.9	2.7	3.3	F B
18'	1.2	3.3	3.5	G C
		2.84	% O2	H D

Ave

West % O2				
6'	3.9	5.1	4.4	E A
13'	2.0	3.5	2.0	F B
18'	0.0	3.3	1.2	G C
Ave		3.15	% O2	H D

O2 Actual	2.98
O2 Target	2.98
NOx Actual	0.391
NOx Target	0.413

West		East
722	SA Air Temp	713
5.5	SA Duct Pr	5.1
738	Exit Gas Temp	762
3.15	Econ O2 %	2.84
-0.78	Drum Level	-6.87
725	1st stg inlet t	724
24	1st stg sprays	18
721	1st stg outlet t	715
781	2nd stg inlet t	782
31	2nd stg sprays	37
774	2nd stg outlet t	775

78.6 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 952 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 948 MW | Menu | AQCS | Coal Yard | Common | 17-Jun-08 09:59:29 | IPSC

IP7021600

Display Unit 2 Burner Overview, 17-Jun-08 09:59:42

9:10 C3 mill 3 to 4
G3 mill 5 to 4
9:30 C3 mill 4 to 5

6-17-08 #1

Previous | Next

937.21 mw
379.86 tph

O2 West 3.02 | O2 East 2.76

Windbox press 1.49	E6	E5	E4	E3	E2	E1	
I/S, coal flow 0.0	4.00	3.50	3.50	2.75	2.75	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	6.5	6.0	Outer register setting
	7	5	3	3	3	7	Inner Air setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.06	0.04	0.06	0.07	0.09	0.00	0.06	Combustion index
Avg 1281	1235	1274	1302	1153	1375	1345	Burner tip temp
Avg 829	792	878	852	729	885	841	Burner body temp
Avg 71	79	72	77	63	56	78	IBAMs flow KPPH
Total 424	34.8 West	SA damper Position			East	35.0	

1/3 OFA % dmpr 2
2/3 OFA % dmpr 0

Windbox press 2.83	A6	A5	A4	A3	A2	A1	
I/S, coal flow 54.7	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	7	3	5	3	7	Inner Air setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.58	0.61	0.52	0.52	0.42	0.60	0.65	Combustion index
Avg 699	699	711	726	676	695	687	Burner tip temp
Avg 521	532	548	503	510	515	514	Burner body temp
Avg 97	98	92	94	83	117	103	IBAMs flow KPPH
Total 583	78.8 West	SA damper Position			East	79.2	

PSH Dmpr 60.9 | RH Dmpr 67.7

Windbox press 3.15	F6	F5	F4	F3	F2	F1	
I/S, coal flow 53.7	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.34	0.64	0.00	0.53	0.41	0.00	0.59	Combustion index
Avg 660	679	687	786	633	474	701	Burner tip temp
Avg 526	553	555	520	504	505	520	Burner body temp
Avg 97	108	85	89	106	86	107	IBAMs flow KPPH
Total 581	79.0 West	SA damper Position			East	79.3	

Duct Press actual 54.8 | target 55.4

Windbox press 2.72	B6	B5	B4	B3	B2	B1	
I/S, coal flow 53.8	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.48	0.75	0.69	0.00	0.71	0.73	0.00	Combustion index
Avg 684	663	651	688	655	734	717	Burner tip temp
Avg 517	533	531	524	487	501	526	Burner body temp
Avg 89	131	2	107	99	84	110	IBAMs flow KPPH
Total 533	79.2 West	SA damper Position			East	79.3	

4525 Total SA flow

-0.62 Furnace Press

Drum Level 0.60 Avg
1.65 West 0.80 Middle -2.85 East

O2 West 3.02 | O2 East 2.76

	D6	D5	D4	D3	D2	D1	Windbox press 2.68	
Spin Vane setting	4.00	4.00	4.00	4.00	3.50	4.00	I/S, coal flow 54.3	
Outer register setting	8.0	5.5	5.0	5.0	5.5	8.0		
Inner Air setting	5	5	5	5	5	5		
Adjustable restrictor setting	21.00	21.00	19.69	18.09	17.57	17.42		
Combustion index	0.61	0.61	0.54	0.58	0.57	0.70	0.61	Avg
Burner tip temp	690	674	708	664	703	687	688	Avg
Burner body temp	516	510	523	518	486	535	515	Avg
IBAMs flow KPPH	105	92	91	95	24	93	90	Avg
	77.9 West	SA damper Position			East	78.6	539	Total

	H6	H5	H4	H3	H2	H1	Windbox press 2.69	
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 54.3	
Outer register setting	8.0	5.5	5.5	5.5	5.5	8.0		
Inner Air setting	5	5	5	5	5	5		
Adjustable restrictor setting	17.42	17.57	18.09	19.69	21.00	21.00		
Combustion index	0.72	0.58	0.62	0.27	0.70	0.53	0.55	Avg
Burner tip temp	676	778	717	679	675	674	700	Avg
Burner body temp	522	541	536	509	527	530	528	Avg
IBAMs flow KPPH	106	102	92	93	87	92	95	Avg
	78.8 West	SA damper Position			East	78.9	571	Total

	C6	C5	C4	C3	C2	C1	Windbox press 3.05	
Spin Vane setting	3.50	4.00	4.00	3.50	4.00	4.00	I/S, coal flow 53.7	
Outer register setting	7.0	5.5	5.5	5.5	5.5	7.0		
Inner Air setting	5	5	5	5	5	5		
Adjustable restrictor setting	21.00	21.00	20.41	19.24	18.76	17.31		
Combustion index	0.41	0.33	0.62	0.23	0.50	0.57	0.44	Avg
Burner tip temp	724	733	674	796	712	681	719	Avg
Burner body temp	493	524	495	531	522	499	511	Avg
IBAMs flow KPPH	94	99	94	90	99	109	97	Avg
	78.9 West	SA damper Position			East	78.9	583	Total

	G6	G5	G4	G3	G2	G1	Windbox press 2.60	
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 55.3	
Outer register setting	9.0	5.5	5.5	5.5	5.5	9.0		
Inner Air setting	5	5	5	5	5	5		
Adjustable restrictor setting	17.00	17.97	18.35	20.75	21.00	21.00		
Combustion index	0.65	0.99	0.71	0.60	0.24	0.57	0.60	Avg
Burner tip temp	640	637	634	706	639	690	657	Avg
Burner body temp	531	520	501	507	519	507	514	Avg
IBAMs flow KPPH	95	81	101	96	88	107	95	Avg
	79.1 West	SA damper Position			East	79.0	570	Total

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2				
6'	1.6	3.1	3.5	E A
13'	1.7	3.3	3.0	F B
18'	1.1	3.9	3.5	G C
Ave		2.76	% O2	H D

West % O2				
6'	3.4	3.6	3.5	E A
13'	2.4	4.4	2.3	F B
18'	0.0	2.8	1.7	G C
Ave		3.02	% O2	H D

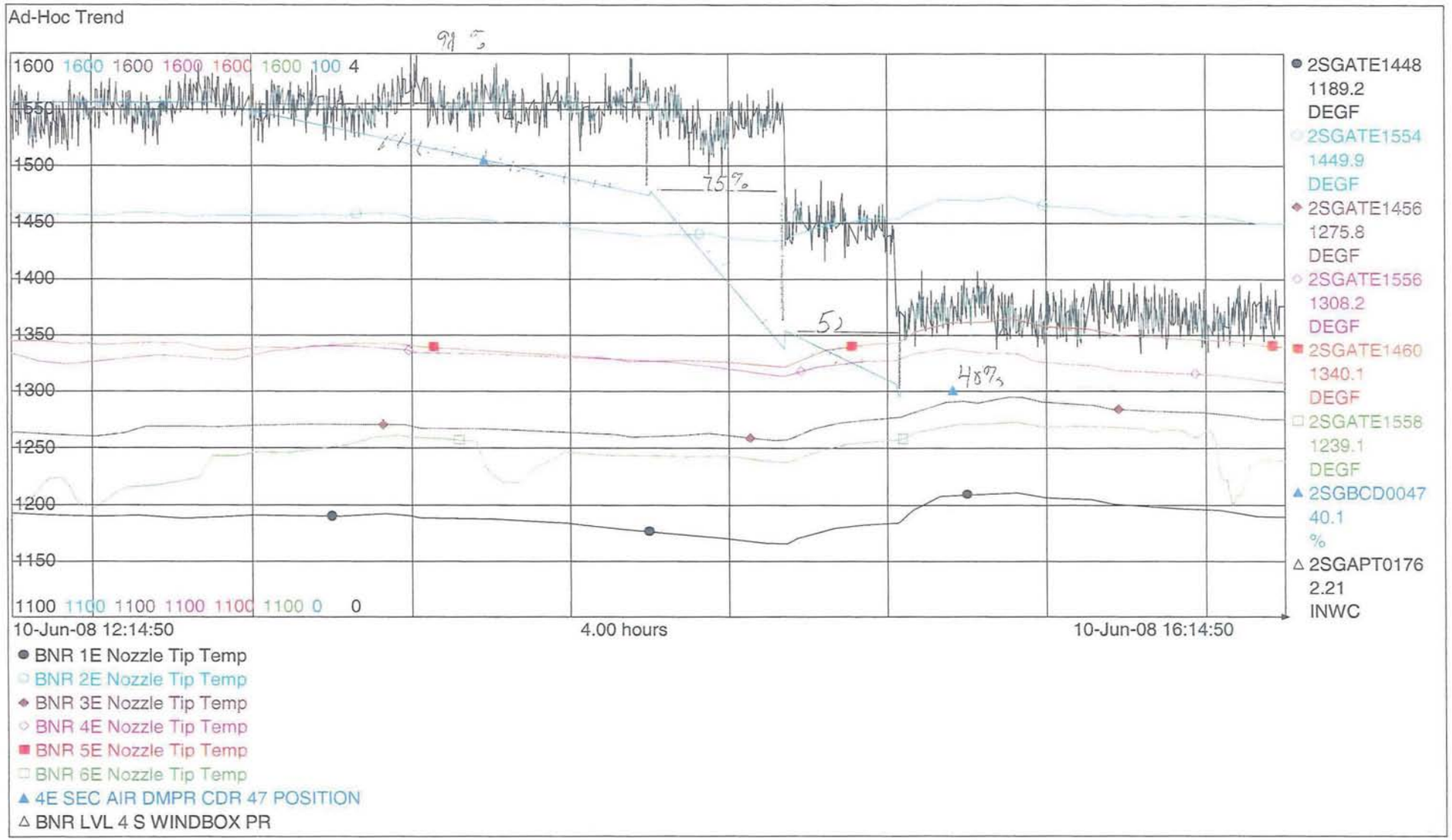
O2 Actual	2.88
O2 Target	2.99
NOx Actual	0.341
NOx Target	0.410

West		East
715	SA Air Temp	702
5.0	SA Duct Pr	4.6
734	Exit Gas Temp	758
3.02	Econ O2 %	2.76
1.65	Drum Level	-2.85
721	1st stg inlet t	714
0	1st stg sprays	10
718	1st stg outlet t	714
779	2nd stg inlet t	778
27	2nd stg sprays	20
774	2nd stg outlet t	774

66.3 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 925 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 937 MW | Menu | AQCS | Coal Yard | Common | 17-Jun-08 08:14:01 | IPSC

IP7021601

Display Unit 2 Burner Overview, 17-Jun-08 08:14:30



Display Trend Display1, 10-Jun-08 16:14:33

IP7021602

14:19 temp dropped to 31 1415 temp 1437

1440 to 50% 1454

50% to 40% 1470

leveling @ 40%

Previous | Next | U2 O2 Trends

945.03 mw
390.30 tph

O2 West 3.04 | O2 East 2.81

Windbox press 3.58	E6	E5	E4	E3	E2	E1	Windbox press 2.84	D6	D5	D4	D3	D2	D1	Windbox press 3.15	A6	A5	A4	A3	A2	A1	Windbox press 3.15	H6	H5	H4	H3	H2	H1	Windbox press 3.47	F6	F5	F4	F3	F2	F1	Windbox press 3.28	C6	C5	C4	C3	C2	C1	Windbox press 2.86	B6	B5	B4	B3	B2	B1	Windbox press 2.90	G6	G5	G4	G3	G2	G1
I/S, coal flow 0.0							I/S, coal flow 55.6							I/S, coal flow 56.3							I/S, coal flow 55.6							I/S, coal flow 55.2							I/S, coal flow 55.7							I/S, coal flow 56.0							I/S, coal flow 55.9						
	4.00	3.50	3.50	2.75	2.75	4.00		4.00	4.00	4.00	4.00	3.50	4.00		4.00	4.00	3.50	4.00	4.00	4.00		4.00	4.00	4.00	4.00	4.00	4.00		4.00	3.00	3.50	4.00	4.00	4.00		3.50	4.00	4.00	3.50	4.00	4.00		4.00	4.00	4.00	3.50	4.00	3.50		4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	6.0		8.0	5.5	5.0	5.0	5.5	8.0		8.0	5.5	5.5	5.5	5.5	7.0		8.0	5.5	5.5	5.5	5.5	8.0		8.0	5.5	5.0	5.0	5.5	8.0		7.0	5.5	5.5	5.5	5.5	7.0		9.0	5.5	5.0	5.0	5.5	9.0		9.0	5.5	5.5	5.5	5.5	9.0
	7	5	3	3	3	7		5	5	5	5	5	5		5	7	3	5	3	7		5	5	5	5	5	5		5	5	5	5	5	5		5	5	5	5	5	5		5	5	5	5	5	5		5	5	5	5	5	5
	17.88	18.10	18.90	20.99	21.00	21.00		21.00	21.00	19.69	18.09	17.57	17.42		21.00	21.00	20.99	18.90	18.10	17.88		17.42	17.57	18.09	19.69	21.00	21.00		17.85	17.85	18.21	20.09	21.00	21.00		21.00	21.00	20.41	19.24	18.76	17.31		21.00	21.00	20.19	18.70	18.15	17.75		17.00	17.97	18.35	20.75	21.00	21.00
Avg 0.05	0.00	0.07	0.08	0.08	0.00	0.06		0.45	0.40	0.32	0.70	0.72	0.69	Avg 0.54	0.48	0.36	0.69	0.43	0.57	0.71	Avg 0.67	0.67	0.55	0.44	0.20	0.44	0.48	Avg 0.33	0.52	0.00	0.70	0.34	0.00	0.43	Avg 0.43	0.28	0.53	0.46	0.38	0.53	0.42	Avg 0.43	0.79	0.73	0.00	0.50	0.56	0.00	Avg 0.58	0.58	0.74	0.36	0.24	0.74
Avg 1311	1259	1343	1340	1272	1459	1192		709	677	717	680	819	717	Avg 710	684	723	732	693	728	699	Avg 681	681	730	673	745	649	727	Avg 695	676	722	769	607	541	721	Avg 695	695	765	710	701	695	693	Avg 650	697	660	693	730	699	725	Avg 685	650	662	654	818	633	692
Avg 850	822	889	878	809	911	794		525	519	534	530	501	547	Avg 531	536	552	508	525	533	528	Avg 531	531	549	547	519	535	543	Avg 504	564	527	507	538	532	511	Avg 504	504	527	507	538	532	511	Avg 539	548	541	538	497	514	538	Avg 524	539	532	504	522	529	520
Avg 87	97	92	97	76	68	94		105	93	91	95	48	105	Avg 100	100	94	95	83	119	106	Avg 108	108	104	95	95	89	92	Avg 95	109	85	90	106	88	107	Avg 95	95	100	95	90	100	109	Avg 95	131	2	106	100	77	111	Avg 96	95	82	104	95	89	108
Total 524	91.2 West	SA damper Position			East	91.3		81.2 West	SA damper Position			East	81.1	Total 537	81.2 West	SA damper Position			East	81.0	Total 582	81.6 West	SA damper Position			East	81.0	Total 586	81.7 West	SA damper Position			East	81.7	Total 590	81.1 West	SA damper Position			East	81.6	Total 526	81.2 West	SA damper Position			East	81.9	Total 573	81.3 West	SA damper Position			East	81.6

1/3 OFA % dmpr	2
2/3 OFA % dmpr	1
PSH Dmpr	RH Dmpr
76.1	50.9
Duct Press actual	target
55.1	53.7
4732	Total SA flow
-0.53	Furnace Press

Spin Vane setting
Outer register setting
Inner Air setting
Adjustable restrictor setting
Combustion index
Burner tip temp
Burner body temp
IBAMs flow KPPH

Drum Level -1.06 Avg
0.05 West -1.06 Middle -5.78 East

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

East % O2

6'	3.4	4.2	4.2	E A
13'	1.6	2.2	2.8	F B
18'	1.5	2.5	2.6	G C
Ave			2.81	% O2 H D

West % O2

6'	3.8	3.7	4.1	E A
13'	2.6	2.4	2.7	F B
18'	0.0	2.5	2.3	G C
Ave			3.04	% O2 H D

O2 Actual	2.90
O2 Target	2.98
NOx Actual	0.366
NOx Target	0.418

West		East
727	SA Air Temp	718
5.2	SA Duct Pr	4.6
742	Exit Gas Temp	766
3.04	Econ O2 %	2.81
0.05	Drum Level	-5.78
728	1st stg inlet t	726
108	1st stg sprays	25
706	1st stg outlet t	712
787	2nd stg inlet t	784
69	2nd stg sprays	81
764	2nd stg outlet t	765

84.1 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 947 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 945 MW | Menu | AQCS | Coal Yard | Common | 10-Jun-08 13:24:01 | IPSC

IP7021603

Display Unit 2 Burner Overview, 10-Jun-08 13:24:00

Previous

Next

948.73 mw
388.16 tph

O2 West 2.36 | O2 East 3.47

Windbox press 3.45	E6	E5	E4	E3	E2	E1	
I/S, coal flow 0.0	4.00	3.50	3.50	2.75	2.75	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	6.0	Outer register setting
	7	5	3	3	3	7	Inner Air setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.06	0.03	0.07	0.09	0.09	0.00	0.06	Combustion index
Avg 1305	1218	1362	1326	1268	1464	1193	Burner tip temp
Avg 854	832	899	888	805	910	793	Burner body temp
Avg 86	96	92	96	75	67	93	IBAMs flow KPPH
Total 519	91.2 West	SA damper Position			East	91.3	

1/3 OFA % dmpr 2
2/3 OFA % dmpr 1

Windbox press 3.01	A6	A5	A4	A3	A2	A1	
I/S, coal flow 56.3	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	7	3	5	3	7	Inner Air setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.50	0.44	0.31	0.71	0.36	0.51	0.70	Combustion index
Avg 706	697	709	735	675	726	694	Burner tip temp
Avg 530	540	556	511	522	528	524	Burner body temp
Avg 98	99	93	95	83	116	104	IBAMs flow KPPH
Total 590	81.5 West	SA damper Position			East	81.4	

PSH Dmpr 99.6 | RH Dmpr 30.3

Windbox press 3.31	F6	F5	F4	F3	F2	F1	
I/S, coal flow 55.7	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.35	0.57	0.00	0.72	0.39	0.00	0.40	Combustion index
Avg 669	683	717	777	584	537	715	Burner tip temp
Avg 537	567	570	530	513	516	527	Burner body temp
Avg 97	108	85	89	106	87	107	IBAMs flow KPPH
Total 582	81.1 West	SA damper Position			East	81.3	

Duct Press actual 54.9 | target 53.1

Windbox press 2.74	B6	B5	B4	B3	B2	B1	
I/S, coal flow 54.4	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.41	0.70	0.79	0.00	0.46	0.50	0.00	Combustion index
Avg 696	694	665	698	732	689	697	Burner tip temp
Avg 529	553	546	540	496	508	532	Burner body temp
Avg 87	128	2	105	99	75	109	IBAMs flow KPPH
Total 519	81.6 West	SA damper Position			East	81.3	

4597 Total SA flow

Drum Level -1.68 Avg
-1.71 West -2.58 Middle 1.50 East

-0.46 Furnace Press

O2 West 2.36 | O2 East 3.47

	D6	D5	D4	D3	D2	D1	Windbox press 2.67	
I/S, coal flow 55.3	4.00	4.00	4.00	4.00	3.50	4.00		
	8.0	5.5	5.0	5.0	5.5	8.0		
	5	5	5	5	5	5		
	21.00	21.00	19.69	18.09	17.57	17.42		
	0.48	0.42	0.31	0.70	0.66	0.70	0.55	Avg
	704	695	734	674	780	705	715	Avg
	528	523	537	529	498	544	527	Avg
	105	92	91	94	30	96	85	Avg
	80.7 West	SA damper Position			East	80.4	507	Total

	H6	H5	H4	H3	H2	H1	Windbox press 2.89	
I/S, coal flow 56.9	4.00	4.00	4.00	4.00	4.00	4.00		
	8.0	5.5	5.5	5.5	5.5	8.0		
	5	5	5	5	5	5		
	17.42	17.57	18.09	19.69	21.00	21.00		
	0.69	0.69	0.51	0.24	0.39	0.25	0.46	Avg
	712	691	675	735	684	715	702	Avg
	536	555	547	516	532	539	538	Avg
	106	102	93	95	87	91	96	Avg
	81.4 West	SA damper Position			East	81.7	574	Total

	C6	C5	C4	C3	C2	C1	Windbox press 3.07	
I/S, coal flow 55.2	3.50	4.00	4.00	3.50	4.00	4.00		
	7.0	5.5	5.5	5.5	5.5	7.0		
	5	5	5	5	5	5		
	21.00	21.00	20.41	19.24	18.76	17.31		
	0.24	0.53	0.50	0.48	0.47	0.38	0.43	Avg
	721	706	734	679	690	690	703	Avg
	509	531	510	535	528	506	520	Avg
	94	99	94	89	99	108	97	Avg
	80.7 West	SA damper Position			East	81.5	583	Total

	G6	G5	G4	G3	G2	G1	Windbox press 2.77	
I/S, coal flow 55.7	4.00	4.00	4.00	4.00	4.00	4.00		
	9.0	5.5	5.5	5.5	5.5	9.0		
	5	5	5	5	5	5		
	17.00	17.97	18.35	20.75	21.00	21.00		
	0.61	0.79	0.41	0.30	0.31	0.72	0.52	Avg
	653	680	649	724	637	664	668	Avg
	543	537	514	520	526	516	526	Avg
	94	82	101	95	88	107	95	Avg
	80.6 West	SA damper Position			East	81.5	567	Total

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	3.2	4.4	5.4	E A
13'	1.9	2.7	4.2	F B
18'	1.9	3.2	4.0	G C
		3.47	% O2	H D

Ave

West % O2

6'	4.0	3.6	4.0	E A
13'	2.5	1.8	1.4	F B
18'	0.0	1.4	0.4	G C
Ave		2.36	% O2	H D

O2 Actual	2.95
O2 Target	2.98
NOx Actual	0.362
NOx Target	0.409

West		East
740	SA Air Temp	716
5.0	SA Duct Pr	4.6
751	Exit Gas Temp	763
2.36	Econ O2 %	3.47
-1.71	Drum Level	1.50
742	1st stg inlet t	725
117	1st stg sprays	10
715	1st stg outlet t	722
785	2nd stg inlet t	784
40	2nd stg sprays	47
774	2nd stg outlet t	773

66.1 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 952 MW | Menu | AQCS

U2 BURNER OVRWS

Burner Fronts

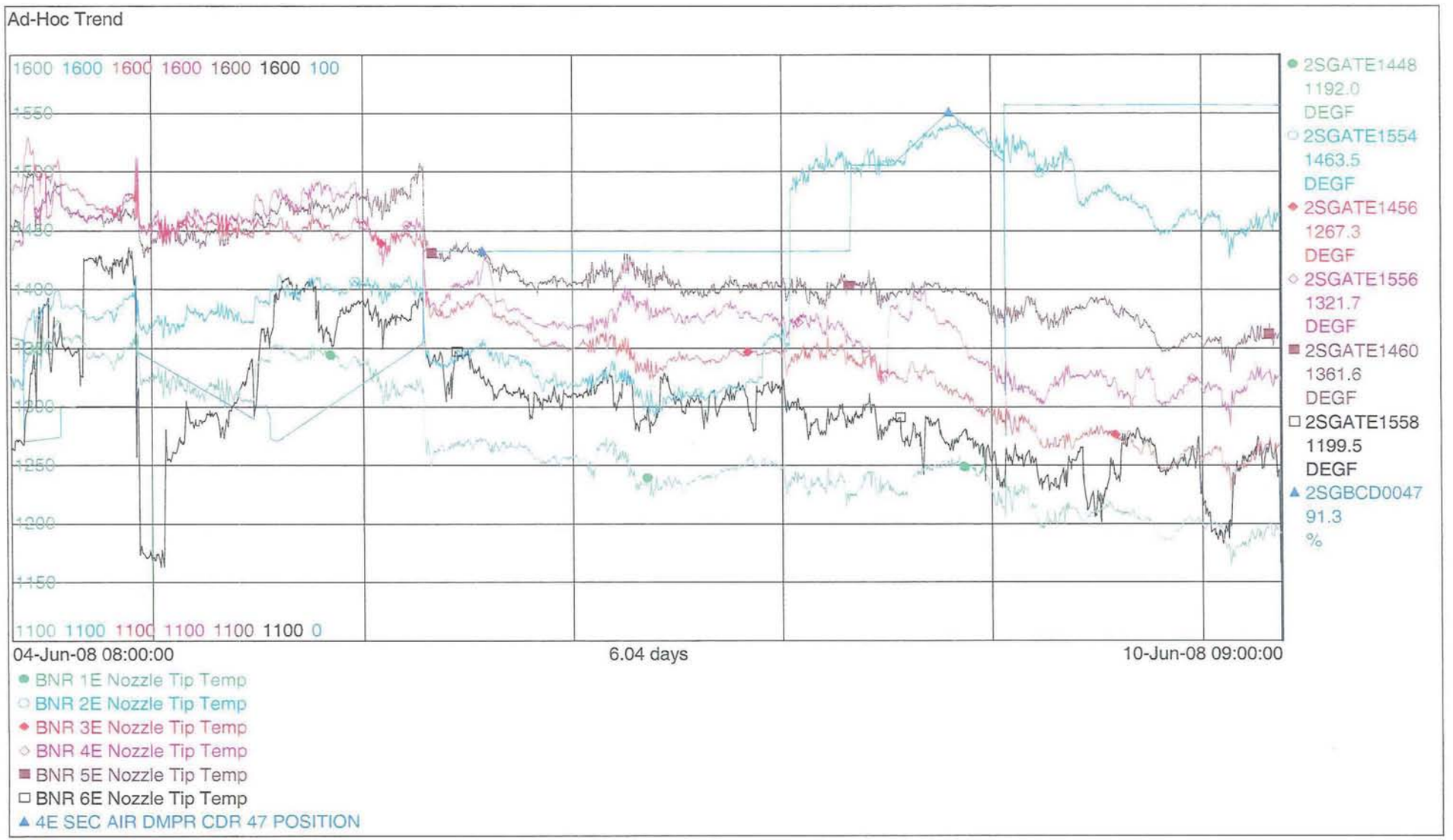
Unit 2 949 MW | Menu | AQCS | Coal Yard | Common

10-Jun-08 08:49:30

IPSC

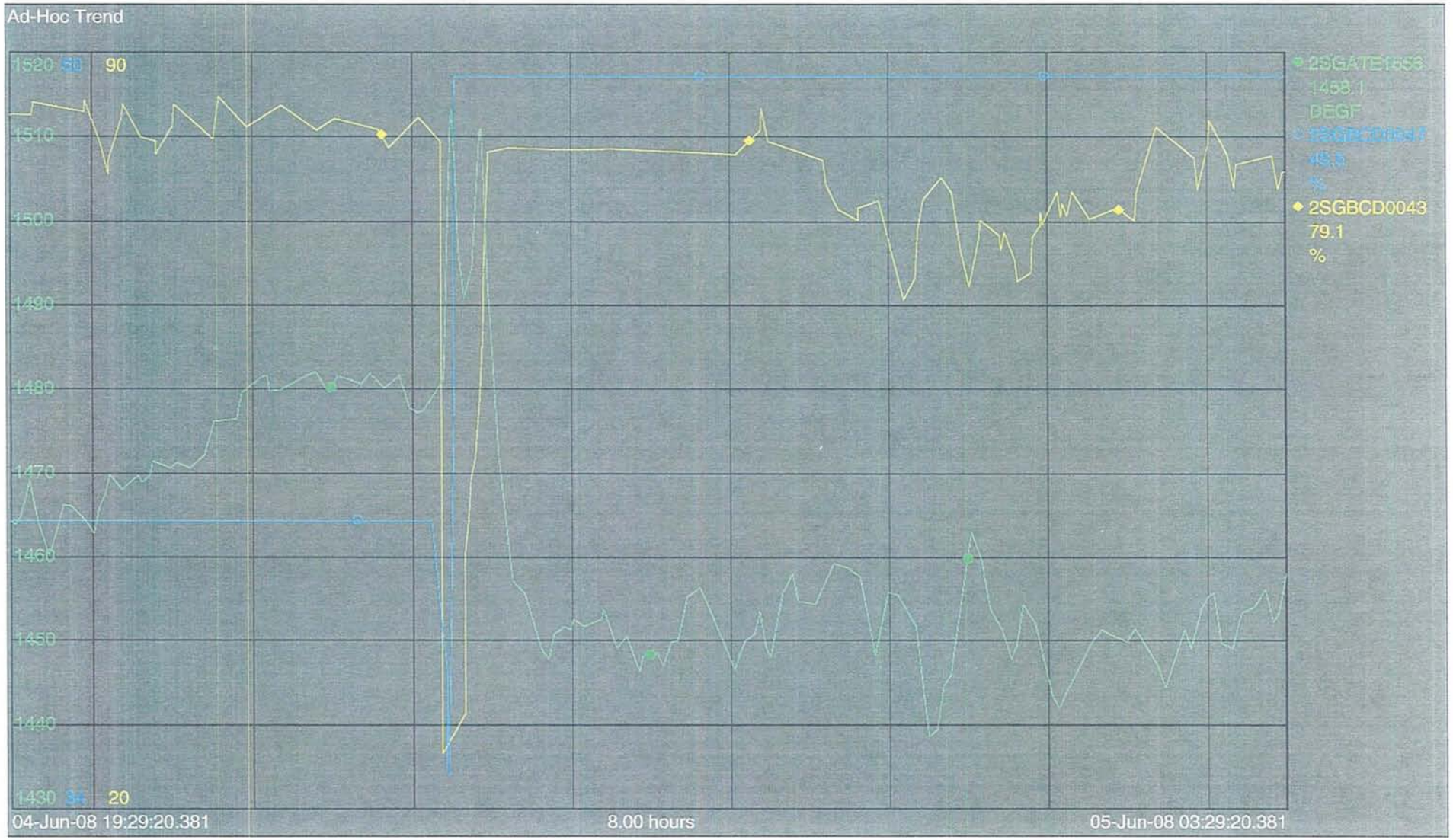
IP7021604

Display Unit 2 Burner Overview, 10-Jun-08 08:49:35



Display Trend Display1, 10-Jun-08 09:27:43

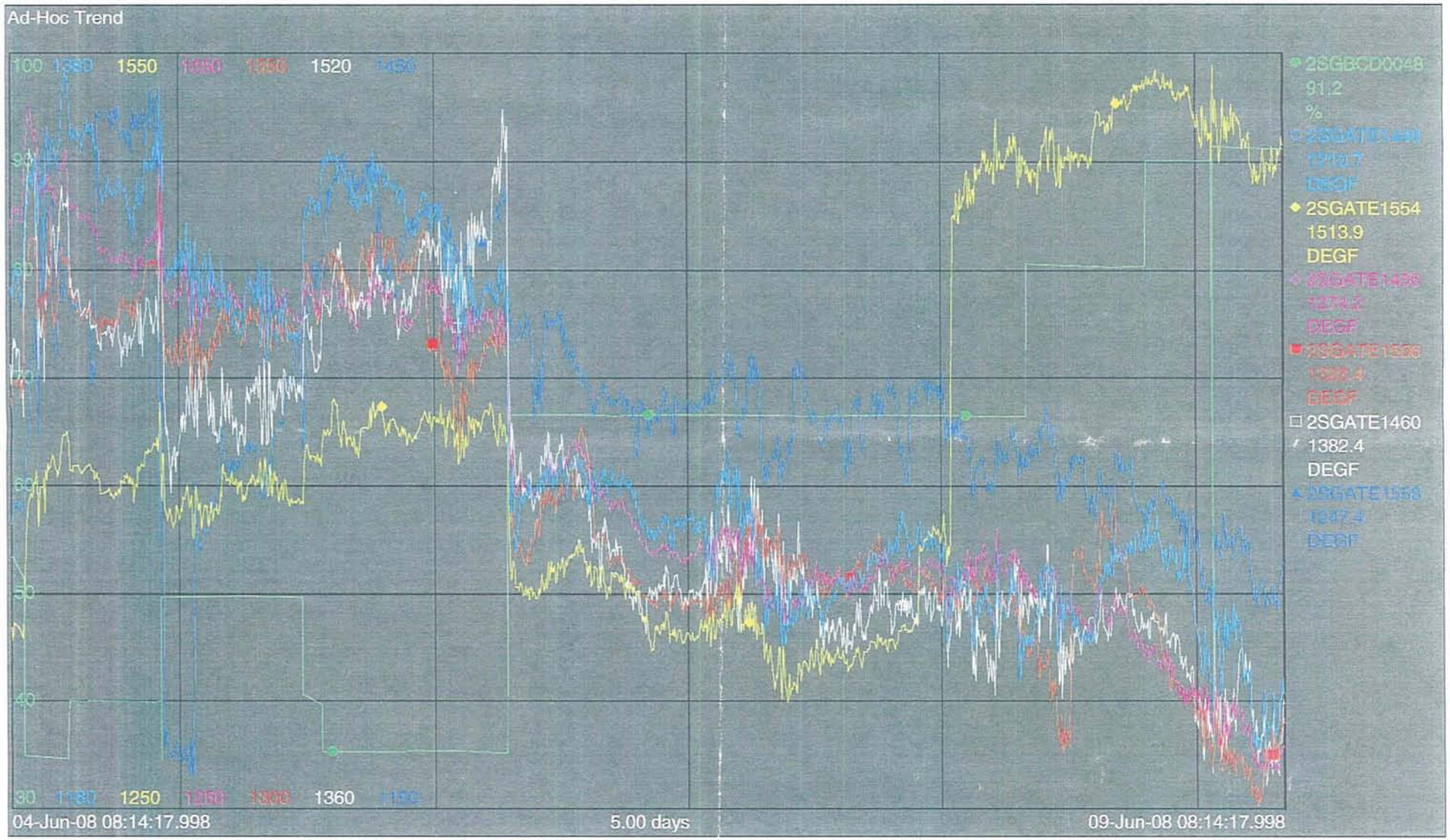
IP70216 05



Display Trend Display1, 05-Jun-08 11:29:45

IP70216 06

U2 Etow
E2 burn temp tous [illegible] yellow
[illegible] [illegible] o/s air



Display Trend Display1, 09-Jun-08 08:14:53

IP7021607

Next

Previous

954.65 mw
399.38 tph

O2 West 3.07 | O2 East 2.99

Windbox press 3.66	E6	E5	E4	E3	E2	E1	
I/S, coal flow 0.0	4.00	3.50	3.50	2.75	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	7.0	5.0	6.0	Outer register setting
	7	5	3	3	5	7	Inner Air setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.08	0.05	0.07	0.09	0.09	0.09	0.06	Combustion index
Avg 1322	1239	1377	1328	1270	1510	1211	Burner tip temp
Avg 844	807	880	865	801	916	794	Burner body temp
Avg 93	100	95	100	77	89	96	IBAMs flow KPPH
Total 556	91.2 West	SA damper Position			East	91.3	

1/3 OFA % dmpr 2
2/3 OFA % dmpr 0

Windbox press 3.16	A6	A5	A4	A3	A2	A1	
I/S, coal flow 57.7	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	7	3	5	3	7	Inner Air setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.52	0.52	0.32	0.64	0.36	0.61	0.62	Combustion index
Avg 692	670	699	719	679	708	679	Burner tip temp
Avg 517	524	533	499	513	519	514	Burner body temp
Avg 103	103	97	99	86	122	109	IBAMs flow KPPH
Total 615	82.9 West	SA damper Position			East	83.8	

PSH Dmpr 93.3 | RH Dmpr 35.7

Windbox press 3.50	F6	F5	F4	F3	F2	F1	
I/S, coal flow 57.4	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.39	0.63	0.00	0.68	0.41	0.00	0.61	Combustion index
Avg 656	652	724	736	590	534	702	Burner tip temp
Avg 522	545	551	512	504	505	518	Burner body temp
Avg 101	112	89	93	110	92	112	IBAMs flow KPPH
Total 606	83.5 West	SA damper Position			East	84.5	

Duct Press actual 54.7 | target 54.5

Windbox press 3.02	B6	B5	B4	B3	B2	B1	
I/S, coal flow 56.1	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.46	0.79	0.80	0.00	0.53	0.63	0.00	Combustion index
Avg 685	660	639	684	704	670	754	Burner tip temp
Avg 515	531	525	522	487	501	527	Burner body temp
Avg 91	134	2	109	104	79	115	IBAMs flow KPPH
Total 543	83.8 West	SA damper Position			East	84.5	

4874 Total SA flow

-0.60 Furnace Press

Drum Level -1.16 Avg
0.02 West -1.09 Middle -4.07 East

O2 West 3.07 | O2 East 2.99

Windbox press 2.85	D6	D5	D4	D3	D2	D1	
I/S, coal flow 57.2	4.00	4.00	4.00	4.00	3.50	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.49 Avg	0.21	0.48	0.18	0.64	0.71	0.68	Combustion index
708 Avg	712	670	718	665	785	697	Burner tip temp
513 Avg	509	505	519	518	492	534	Burner body temp
93 Avg	109	96	95	99	40	105	IBAMs flow KPPH
560 Total	82.6 West	SA damper Position			East	83.5	

Windbox press 3.00	H6	H5	H4	H3	H2	H1	
I/S, coal flow 57.4	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.52 Avg	0.78	0.23	0.80	0.52	0.38	0.48	Combustion index
693 Avg	647	736	719	683	690	684	Burner tip temp
524 Avg	514	534	533	509	523	528	Burner body temp
99 Avg	110	106	95	99	91	95	IBAMs flow KPPH
596 Total	84.4 West	SA damper Position			East	84.2	

Windbox press 3.35	C6	C5	C4	C3	C2	C1	
I/S, coal flow [illegible]	3.50	4.00	4.00	3.50	4.00	4.00	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.47 Avg	0.38	0.52	0.47	0.47	0.47	0.52	Combustion index
684 Avg	715	679	664	681	690	676	Burner tip temp
507 Avg	491	513	495	525	519	497	Burner body temp
101 Avg	98	103	99	93	103	112	IBAMs flow KPPH
608 Total	84.2 West	SA damper Position			East	84.2	

Windbox press 2.90	G6	G5	G4	G3	G2	G1	
I/S, coal flow 57.5	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.57 Avg	0.65	0.72	0.42	0.41	0.47	0.68	Combustion index
656 Avg	641	648	650	719	612	663	Burner tip temp
512 Avg	522	514	498	510	520	507	Burner body temp
99 Avg	99	85	107	100	93	112	IBAMs flow KPPH
594 Total	84.4 West	SA damper Position			East	84.3	

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2				
6'	2.9	4.2	4.6	E
13'	1.4	1.8	3.6	A F B
18'	1.2	2.7	3.9	G C
				H D
Ave	2.99	% O2		

West % O2				
6'	5.0	4.0	2.8	E
13'	4.0	3.1	1.5	A F B
18'	0.0	3.0	1.2	G C
				H D
Ave	3.07	% O2		

O2 Actual	3.02
O2 Target	2.98
NOx Actual	0.413
NOx Target	0.420

West		East
707	SA Air Temp	702
5.3	SA Duct Pr	4.9
732	Exit Gas Temp	757
3.07	Econ O2 %	2.99
0.02	Drum Level	-4.07
728	1st stg inlet t	729
92	1st stg sprays	22
715	1st stg outlet t	718
790	2nd stg inlet t	789
83	2nd stg sprays	96
767	2nd stg outlet t	767

56.3 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 945 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 955 MW | Menu | AQCS | Coal Yard | Common | 09-Jun-08 08:38:59 | IPSC

IP70216 08

Display Unit 2 Burner Overview, 09-Jun-08 08:39:10

E2 [illegible] 3.5
E2 [illegible] 3.5 to 4.0

Next | Previous

949.87 mw
381.42 tph

O2 West 2.46 | O2 East 3.29

Windbox press 2.82	E6	E5	E4	E3	E2	E1	
I/S, coal flow 0.0	3.50	3.50	3.50	3.50	3.50	3.50	Spin Vane setting
	8.0	5.5	5.5	5.0	5.5	8.0	Outer register setting
	7	5	3	3	3	7	Inner Air setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.05	0.05	0.07	0.08	0.06	0.00	0.07	Combustion index
Avg 1384	1273	1458	1442	1488	1322	1320	Burner tip temp
Avg 880	869	897	898	887	888	839	Burner body temp
Avg 85	84	88	91	84	81	81	IBAMs flow KPPH
Total 509	53.5	West	SA damper Position		East	53.7	

1/3 OFA % dmpr 2
2/3 OFA % dmpr 0

Windbox press 3.12	A6	A5	A4	A3	A2	A1	
I/S, coal flow 52.9	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	7	3	5	3	7	Inner Air setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.55	0.48	0.54	0.58	0.50	0.55	0.62	Combustion index
Avg 676	678	638	701	665	708	666	Burner tip temp
Avg 518	527	540	500	509	517	515	Burner body temp
Avg 101	101	94	98	85	121	106	IBAMs flow KPPH
Total 604	81.1	West	SA damper Position		East	80.0	

PSH Dmpr 100.0 | RH Dmpr 30.0

Windbox press 3.53	F6	F5	F4	F3	F2	F1	
I/S, coal flow 54.6	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.44	0.80	0.00	0.54	0.42	0.00	0.88	Combustion index
Avg 637	658	667	734	581	495	683	Burner tip temp
Avg 523	548	548	515	503	507	517	Burner body temp
Avg 100	111	87	94	108	90	110	IBAMs flow KPPH
Total 600	81.1	West	SA damper Position		East	81.3	

Duct Press actual 53.3 | target 52.7

Windbox press 2.94	B6	B5	B4	B3	B2	B1	
I/S, coal flow 54.5	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.44	0.73	0.75	0.00	0.66	0.50	0.00	Combustion index
Avg 678	669	650	682	678	690	701	Burner tip temp
Avg 516	535	528	526	486	497	523	Burner body temp
Avg 89	132	2	108	103	72	114	IBAMs flow KPPH
Total 531	81.4	West	SA damper Position		East	80.5	

4720 Total SA flow

-0.49 Furnace Press

Drum Level -0.58 Avg
0.43 West -0.52 Middle -4.40 East

O2 West 2.46 | O2 East 3.29

Windbox press 2.86	D6	D5	D4	D3	D2	D1	
I/S, coal flow 54.7	4.00	4.00	4.00	4.00	3.50	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.50 Avg	0.37	0.31	0.37	0.57	0.70	0.70	Combustion index
714 Avg	714	687	719	714	764	687	Burner tip temp
514 Avg	514	503	527	516	491	532	Burner body temp
89 Avg	107	94	93	97	41	105	IBAMs flow KPPH
537 Total	80.5	West	SA damper Position		East	79.7	

Windbox press 3.10	H6	H5	H4	H3	H2	H1	
I/S, coal flow 55.6	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.49 Avg	0.66	0.61	0.62	0.23	0.39	0.40	Combustion index
693 Avg	678	705	690	695	683	709	Burner tip temp
524 Avg	516	534	531	508	524	529	Burner body temp
99 Avg	110	105	96	96	89	95	IBAMs flow KPPH
592 Total	80.5	West	SA damper Position		East	81.4	

Windbox press 3.25	C6	C5	C4	C3	C2	C1	
I/S, coal flow 55.6	3.50	4.00	4.00	3.50	4.00	4.00	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.44 Avg	0.58	0.47	0.27	0.49	0.46	0.37	Combustion index
683 Avg	691	708	653	672	680	693	Burner tip temp
505 Avg	487	514	491	524	517	498	Burner body temp
100 Avg	96	102	97	92	102	111	IBAMs flow KPPH
600 Total	80.7	West	SA damper Position		East	81.1	

Windbox press 2.94	G6	G5	G4	G3	G2	G1	
I/S, coal flow 56.1	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.47 Avg	0.63	0.84	0.33	0.19	0.13	0.69	Combustion index
652 Avg	632	663	604	714	619	678	Burner tip temp
512 Avg	522	516	497	516	519	504	Burner body temp
98 Avg	98	84	105	98	91	110	IBAMs flow KPPH
586 Total	81.3	West	SA damper Position		East	80.7	

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	2.7	4.4	5.1	E
13'	1.5	3.5	3.6	A F B
18'	2.1	3.2	3.5	G C
		3.29	% O2	H D

Ave

West % O2

6'	4.2	3.1	2.8	E
13'	3.7	2.0	1.2	A F B
18'	0.0	1.9	1.0	G C
Ave		2.46	% O2	H D

O2 Actual	2.91
O2 Target	2.98
NOx Actual	0.351
NOx Target	0.405

West		East
711	SA Air Temp	702
5.3	SA Duct Pr	4.9
730	Exit Gas Temp	754
2.46	Econ O2 %	3.29
0.43	Drum Level	-4.40
734	1st stg inlet t	726
130	1st stg sprays	25
707	1st stg outlet t	715
782	2nd stg inlet t	780
37	2nd stg sprays	50
770	2nd stg outlet t	770

52.5 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 948 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 950 MW | Menu | AQCS | Coal Yard | Common | 04-Jun-08 08:58:31 | IPSC

IP7021609

Display Unit 2 Burner Overview, 04-Jun-08 08:58:48

adjusted E6 Spin 4 to 5.0
waited and then adjusted rest
of E row to 3.5 on Spin

Next

Previous

951.56 mw
383.61 tph

O2 West 2.45 O2 East 3.21

Windbox press 1.49	E6	E5	E4	E3	E2	E1	
I/S, coal flow 0.0	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.0	5.5	8.0	Outer register setting
	7	5	3	3	3	7	Inner Air setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.05	0.00	0.06	0.07	0.14	0.00	0.05	Combustion index
Avg 1438	1490	1443	1389	1430	1446	1433	Burner tip temp
Avg 915	911	920	931	896	949	886	Burner body temp
Avg 76	77	78	76	78	71	76	IBAMs flow KPPH
Total 455	34.7 West	SA damper Position			East	34.2	

1/3 OFA % dmpr 2
2/3 OFA % dmpr 0

Windbox press 3.13	A6	A5	A4	A3	A2	A1	
I/S, coal flow 52.8	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	7	3	5	3	7	Inner Air setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.49	0.48	0.52	0.51	0.37	0.52	0.63	Combustion index
Avg 686	680	659	709	676	705	682	Burner tip temp
Avg 524	533	549	506	514	518	523	Burner body temp
Avg 101	102	94	98	86	121	107	IBAMs flow KPPH
Total 607	81.6 West	SA damper Position			East	81.0	

PSH Dmpr 99.8 RH Dmpr 30.3

Windbox press 3.74	F6	F5	F4	F3	F2	F1	
I/S, coal flow 55.2	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.38	0.52	0.00	0.62	0.41	0.00	0.78	Combustion index
Avg 641	657	657	725	635	501	673	Burner tip temp
Avg 528	553	555	518	509	512	522	Burner body temp
Avg 100	112	87	95	109	90	110	IBAMs flow KPPH
Total 602	80.5 West	SA damper Position			East	81.8	

Duct Press actual 53.5 target 51.8

Windbox press 3.01	B6	B5	B4	B3	B2	B1	
I/S, coal flow 54.2	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.44	0.75	0.68	0.00	0.60	0.61	0.00	Combustion index
Avg 671	664	639	681	659	672	714	Burner tip temp
Avg 520	540	531	529	491	500	529	Burner body temp
Avg 89	133	2	108	103	71	115	IBAMs flow KPPH
Total 532	81.0 West	SA damper Position			East	80.7	

4721 Total SA flow

-0.45 Furnace Press

Drum Level -1.34 Avg
-1.34 West -2.36 Middle -1.07 East

O2 West 2.45 O2 East 3.21

Windbox press 2.95	D6	D5	D4	D3	D2	D1	
I/S, coal flow 54.8	4.00	4.00	4.00	4.00	3.50	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.47 Avg	0.25	0.39	0.32	0.57	0.58	0.66	Combustion index
710 Avg	730	699	739	674	730	686	Burner tip temp
518 Avg	523	509	527	516	496	537	Burner body temp
91 Avg	108	95	94	99	47	106	IBAMs flow KPPH
548 Total	80.7 West	SA damper Position			East	80.2	

Windbox press 3.15	H6	H5	H4	H3	H2	H1	
I/S, coal flow 55.8	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.38 Avg	0.72	0.56	0.20	0.17	0.24	0.30	Combustion index
706 Avg	759	700	701	672	718	688	Burner tip temp
527 Avg	521	538	535	512	533	525	Burner body temp
99 Avg	110	107	95	96	90	96	IBAMs flow KPPH
592 Total	81.0 West	SA damper Position			East	80.3	

Windbox press 3.37	C6	C5	C4	C3	C2	C1	
I/S, coal flow 55.0	3.50	4.00	4.00	3.50	4.00	4.00	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.50 Avg	0.59	0.55	0.36	0.45	0.53	0.44	Combustion index
685 Avg	688	694	679	688	679	682	Burner tip temp
511 Avg	495	522	495	531	522	502	Burner body temp
101 Avg	98	103	98	93	103	113	IBAMs flow KPPH
607 Total	81.8 West	SA damper Position			East	81.4	

Windbox press 3.07	G6	G5	G4	G3	G2	G1	
I/S, coal flow 55.0	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.53 Avg	0.63	0.79	0.49	0.19	0.40	0.68	Combustion index
649 Avg	638	636	618	707	625	673	Burner tip temp
517 Avg	528	521	501	517	524	510	Burner body temp
99 Avg	98	85	106	99	93	112	IBAMs flow KPPH
592 Total	80.4 West	SA damper Position			East	80.4	

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	3.1	4.1	4.4	E A
13'	2.2	3.1	3.2	F B
18'	2.4	3.2	3.4	G C
		3.21	% O2	H D

Ave

West % O2

6'	4.3	3.1	2.3	E A
13'	3.6	1.8	1.0	F B
18'	0.0	2.0	1.5	G C
Ave		2.45	% O2	H D

O2 Actual 2.86
O2 Target 2.98
NOx Actual 0.351
NOx Target 0.385

West		East
715	SA Air Temp	706
5.5	SA Duct Pr	5.0
733	Exit Gas Temp	755
2.45	Econ O2 %	3.21
-1.34	Drum Level	-1.07
734	1st stg inlet t	730
115	1st stg sprays	29
706	1st stg outlet t	714
785	2nd stg inlet t	787
65	2nd stg sprays	91
763	2nd stg outlet t	766

67.5 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 951 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 952 MW | Menu | AQCS | Coal Yard | Common | 03-Jun-08 09:54:39 | IPSC

IP7021610

Display Unit 2 Burner Overview, 03-Jun-08 09:52:40

Next

Previous

946.77 mw
399.85 tph

O2 West 2.47 | O2 East 3.84

Windbox press 1.46	E6	E5	E4	E3	E2	E1	
I/S, coal flow 0.0	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.0	5.5	8.0	Outer register setting
	7	5	3	3	3	7	Inner Air setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.05	0.00	0.06	0.06	0.12	0.00	0.06	Combustion index
Avg 1452	1433	1420	1473	1451	1487	1446	Burner tip temp
Avg 929	916	918	962	919	967	891	Burner body temp
Avg 76	78	79	77	78	72	77	IBAMs flow KPPH
Total 458	34.9 West	SA damper Position			East	34.1	

1/3 OFA % dmpr 2
2/3 OFA % dmpr 0

Windbox press 3.19	A6	A5	A4	A3	A2	A1	
I/S, coal flow 57.8	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	7	3	5	3	7	Inner Air setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.55	0.42	0.52	0.60	0.43	0.56	0.57	Combustion index
Avg 668	679	644	647	653	708	674	Burner tip temp
Avg 527	538	552	508	514	521	524	Burner body temp
Avg 102	103	96	98	87	123	108	IBAMs flow KPPH
Total 610	83.7 West	SA damper Position			East	83.4	

PSH Dmpr 83.2 | RH Dmpr 44.7

Windbox press 3.69	F6	F5	F4	F3	F2	F1	
I/S, coal flow 57.6	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.36	0.46	0.00	0.70	0.48	0.00	0.58	Combustion index
Avg 632	650	667	723	567	497	701	Burner tip temp
Avg 530	557	556	521	508	513	522	Burner body temp
Avg 101	113	89	96	110	91	112	IBAMs flow KPPH
Total 609	84.0 West	SA damper Position			East	84.3	

Duct Press actual 53.1 | target 52.6

Windbox press 3.11	B6	B5	B4	B3	B2	B1	
I/S, coal flow 56.4	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.44	0.74	0.65	0.00	0.61	0.59	0.00	Combustion index
Avg 665	650	633	648	670	666	720	Burner tip temp
Avg 522	543	535	531	489	502	530	Burner body temp
Avg 89	135	2	109	105	71	117	IBAMs flow KPPH
Total 537	84.1 West	SA damper Position			East	82.8	

4781 Total SA flow

-0.52 Furnace Press

Drum Level -1.12 Avg
-1.15 West -1.98 Middle 0.16 East

O2 West 2.47 | O2 East 3.84

Windbox press 3.03	D6	D5	D4	D3	D2	D1	
I/S, coal flow 57.1	4.00	4.00	4.00	4.00	3.50	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.48 Avg	0.25	0.39	0.36	0.57	0.65	0.65	Combustion index
714 Avg	706	692	739	667	801	673	Burner tip temp
519 Avg	520	512	528	517	497	537	Burner body temp
98 Avg	110	97	96	100	70	121	IBAMs flow KPPH
589 Total	84.6 West	SA damper Position			East	84.8	

Windbox press 3.22	H6	H5	H4	H3	H2	H1	
I/S, coal flow 57.1	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.34 Avg	0.64	0.53	0.24	0.19	0.29	0.24	Combustion index
681 Avg	686	681	680	683	663	687	Burner tip temp
529 Avg	521	540	538	513	532	527	Burner body temp
100 Avg	111	108	95	98	91	98	IBAMs flow KPPH
598 Total	84.2 West	SA damper Position			East	84.2	

Windbox press 3.57	C6	C5	C4	C3	C2	C1	
I/S, coal flow 57.3	3.50	4.00	4.00	3.50	4.00	4.00	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.47 Avg	0.48	0.61	0.30	0.52	0.44	0.44	Combustion index
670 Avg	678	676	686	655	662	657	Burner tip temp
514 Avg	499	526	502	533	523	503	Burner body temp
101 Avg	98	104	99	94	104	113	IBAMs flow KPPH
608 Total	83.1 West	SA damper Position			East	83.7	

Windbox press 3.34	G6	G5	G4	G3	G2	G1	
I/S, coal flow 57.4	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	5	5	5	5	5	5	Inner Air setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.59 Avg	0.63	0.84	0.65	0.27	0.50	0.67	Combustion index
649 Avg	643	642	609	707	621	671	Burner tip temp
519 Avg	533	526	503	516	524	511	Burner body temp
99 Avg	100	86	107	100	94	113	IBAMs flow KPPH
595 Total	84.3 West	SA damper Position			East	84.4	

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	2.4	3.8	4.1	E A
13'	2.1	4.7	4.3	F B
18'	2.6	4.9	4.6	G C
		3.84	% O2	H D

Ave

West % O2

6'	3.5	2.6	2.1	E A
13'	3.2	2.4	1.7	F B
18'	0.0	2.1	2.2	G C
Ave		2.47	% O2	H D

O2 Actual 3.14
O2 Target 2.97
NOx Actual 0.334
NOx Target 0.373

West		East
717	SA Air Temp	703
5.7	SA Duct Pr	5.1
736	Exit Gas Temp	752
2.47	Econ O2 %	3.84
-1.15	Drum Level	0.16
733	1st stg inlet t	722
132	1st stg sprays	20
707	1st stg outlet t	714
787	2nd stg inlet t	784
108	2nd stg sprays	130
754	2nd stg outlet t	755

80.3 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 943 MW | Menu | AQCS

U2 BURNER OVRWS

Burner Fronts

Unit 2 947 MW | Menu | AQCS | Coal Yard | Common

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IPSC

IP7021611

Display Unit 2 Burner Overview, 02-Jun-08 16:02:33

E4 4 to 3.5 [illegible]
E4 5 to 5.5 [illegible] after

Next

Previous

945.68 mw
399.82 tph

O2 West 2.54 O2 East 3.82

Windbox press 1.59	E6	E5	E4	E3	E2	E1
I/S, coal flow 0.0	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	7	5	3	3	3	7
	17.88	18.10	18.90	20.99	21.00	21.00
Avg 0.02	0.00	0.06	0.08	0.00	0.00	0.08
Avg 1457	1417	1421	1501	1457	1490	1456
Avg 929	915	916	971	919	965	892
Avg 77	77	79	80	77	71	77
Total 462	34.9	West	SA damper Position		East	34.2

Windbox press 3.30	A6	A5	A4	A3	A2	A1
I/S, coal flow 57.6	4.00	4.00	3.50	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	7.0
	5	7	3	5	3	7
	21.00	21.00	20.99	18.90	18.10	17.88
Avg 0.53	0.43	0.57	0.60	0.45	0.55	0.57
Avg 671	686	641	651	658	707	685
Avg 530	543	555	511	517	523	527
Avg 102	102	95	99	86	123	108
Total 612	84.1	West	SA damper Position		East	82.7

Windbox press 3.78	F6	F5	F4	F3	F2	F1
I/S, coal flow 56.8	4.00	3.00	3.50	4.00	4.00	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	5	5	5	5	5	5
	17.85	17.85	18.21	20.09	21.00	21.00
Avg 0.40	0.52	0.00	0.71	0.50	0.00	0.63
Avg 633	654	663	722	575	499	686
Avg 533	559	559	523	512	515	525
Avg 101	113	88	96	110	92	111
Total 609	82.5	West	SA damper Position		East	82.1

Windbox press 3.18	B6	B5	B4	B3	B2	B1
I/S, coal flow 55.6	4.00	4.00	4.00	3.50	4.00	3.50
	9.0	5.5	5.0	5.0	5.5	9.0
	5	5	5	5	5	5
	21.00	21.00	20.19	18.70	18.15	17.75
Avg 0.46	0.77	0.69	0.00	0.65	0.68	0.00
Avg 665	657	637	651	671	661	713
Avg 525	547	537	534	494	503	533
Avg 89	135	2	110	105	72	116
Total 536	83.9	West	SA damper Position		East	83.2

Drum Level -0.86 Avg
-0.86 West -1.73 Middle 3.40 East

Spin Vane setting	
Outer register setting	
Inner Air setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
1/3 OFA % dmpr	1
2/3 OFA % dmpr	0
Spin Vane setting	
Outer register setting	
Inner Air setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
PSH Dmpr	RH Dmpr
95.4	34.3
Spin Vane setting	
Outer register setting	
Inner Air setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
Duct Press actual	target
52.5	52.1
Spin Vane setting	
Outer register setting	
Inner Air setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
4778	Total SA flow
-0.44	Furnace Press

O2 West 2.54 O2 East 3.82

Windbox press 3.16	D6	D5	D4	D3	D2	D1
I/S, coal flow 57.1	4.00	4.00	4.00	4.00	3.50	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	5	5	5	5	5	5
	21.00	21.00	19.69	18.09	17.57	17.42
0.47 Avg	0.23	0.36	0.39	0.61	0.62	0.73
720 Avg	708	696	739	672	822	679
522 Avg	524	515	531	519	500	541
96 Avg	110	97	96	99	64	118
577 Total	84.4	West	SA damper Position		East	83.2

Windbox press 3.35	H6	H5	H4	H3	H2	H1
I/S, coal flow 58.2	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	8.0
	5	5	5	5	5	5
	17.42	17.57	18.09	19.69	21.00	21.00
0.35 Avg	0.64	0.55	0.21	0.21	0.30	0.21
684 Avg	684	684	683	687	670	696
532 Avg	524	543	540	516	536	530
100 Avg	111	107	96	99	91	97
602 Total	83.1	West	SA damper Position		East	82.9

Windbox press 3.57	C6	C5	C4	C3	C2	C1
I/S, coal flow 57.1	3.50	4.00	4.00	3.50	4.00	4.00
	7.0	5.5	5.5	5.5	5.5	7.0
	5	5	5	5	5	5
	21.00	21.00	20.41	19.24	18.76	17.31
0.50 Avg	0.60	0.64	0.27	0.55	0.47	0.44
670 Avg	684	680	664	664	666	665
518 Avg	501	528	503	536	526	507
102 Avg	98	104	99	94	103	113
611 Total	83.0	West	SA damper Position		East	83.4

Windbox press 3.23	G6	G5	G4	G3	G2	G1
I/S, coal flow 57.4	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	5.5	5.5	5.5	5.5	9.0
	5	5	5	5	5	5
	17.00	17.97	18.35	20.75	21.00	21.00
0.59 Avg	0.63	0.82	0.62	0.26	0.52	0.66
654 Avg	648	646	618	716	625	674
522 Avg	537	528	505	519	526	514
100 Avg	100	85	107	100	94	112
599 Total	83.2	West	SA damper Position		East	82.9

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	2.6	3.8	4.2	E
13'	2.1	4.3	4.5	A F B
18'	3.0	4.6	5.0	G C
		3.82	% O2	H D

Ave

West % O2

6'	3.5	2.9	2.0	E
13'	3.1	2.4	1.5	A F B
18'	0.0	2.7	2.0	G C
Ave		2.54	% O2	H D

O2 Actual	3.21
O2 Target	2.97
NOx Actual	0.334
NOx Target	0.373

West		East
721	SA Air Temp	710
5.6	SA Duct Pr	5.3
737	Exit Gas Temp	757
2.54	Econ O2 %	3.82
-0.86	Drum Level	3.40
738	1st stg inlet t	724
139	1st stg sprays	23
707	1st stg outlet t	713
781	2nd stg inlet t	786
106	2nd stg sprays	137
755	2nd stg outlet t	753

79.1 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 950 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 946 MW | Menu | AQCS | Coal Yard | Common | 02-Jun-08 15:30:10 | IPSC

IP7021612

Display Unit 2 Burner Overview, 02-Jun-08 15:28:49

Next

Previous

945.32 mw
394.23 tph

O2 West 2.38 O2 East 3.41

Windbox press 2.26	E6	E5	E4	E3	E2	E1		
I/S, coal flow 0.0	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting	
	5	5	5	5	5	5	Inner Air setting	
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting	
Avg 0.05	0.00	0.06	0.07	0.09	0.00	0.05	Combustion index	
Avg 1408	1299	1392	1482	1434	1469	1371	Burner tip temp	
Avg 915	899	904	950	908	952	875	Burner body temp	
Avg 85	86	88	89	85	78	84	IBAMs flow KPPH	
Total 509	46.6	West	SA damper Position		East	47.4	1/3 OFA % dmpr	1

Windbox press 3.12	A6	A5	A4	A3	A2	A1		
I/S, coal flow 56.3	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting	
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting	
	5	7	3	5	3	7	Inner Air setting	
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting	
Avg 0.53	0.48	0.58	0.59	0.39	0.54	0.62	Combustion index	
Avg 677	682	657	657	679	708	676	Burner tip temp	
Avg 531	542	559	513	518	525	526	Burner body temp	
Avg 101	101	95	98	85	121	106	IBAMs flow KPPH	
Total 607	83.0	West	SA damper Position		East	83.3	2/3 OFA % dmpr	0

Windbox press 3.61	F6	F5	F4	F3	F2	F1		
I/S, coal flow 54.7	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting	
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting	
	5	5	5	5	5	5	Inner Air setting	
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting	
Avg 0.34	0.51	0.00	0.70	0.41	0.00	0.47	Combustion index	
Avg 639	656	667	728	565	497	722	Burner tip temp	
Avg 534	562	561	526	512	514	526	Burner body temp	
Avg 100	111	87	96	108	90	110	IBAMs flow KPPH	
Total 602	82.8	West	SA damper Position		East	82.5	Duct Press	

Windbox press 3.02	B6	B5	B4	B3	B2	B1		
I/S, coal flow 55.5	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting	
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting	
	5	5	5	5	5	5	Inner Air setting	
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting	
Avg 0.43	0.76	0.63	0.00	0.56	0.60	0.00	Combustion index	
Avg 676	660	640	654	676	679	747	Burner tip temp	
Avg 526	548	539	536	494	504	533	Burner body temp	
Avg 88	132	2	107	102	70	114	IBAMs flow KPPH	
Total 528	81.4	West	SA damper Position		East	81.7	4803 Total SA flow	

PSH Dmpr 99.7 RH Dmpr 30.3

Duct Press actual 53.0 target 52.4

-0.51 Furnace Press

Drum Level -1.14 Avg
-1.14 West -1.88 Middle 0.01 East

O2 West 2.38 O2 East 3.41

Windbox press 3.02	D6	D5	D4	D3	D2	D1		
I/S, coal flow 56.0	4.00	4.00	4.00	4.00	3.50	4.00	Spin Vane setting	
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting	
	5	5	5	5	5	5	Inner Air setting	
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting	
0.47 Avg	0.21	0.38	0.44	0.51	0.61	0.68	Combustion index	
706 Avg	713	695	725	666	761	678	Burner tip temp	
522 Avg	526	515	532	518	500	540	Burner body temp	
94 Avg	107	95	94	98	40	105	IBAMs flow KPPH	
562 Total	82.3	West	SA damper Position		East	81.9		

Windbox press 3.04	H6	H5	H4	H3	H2	H1		
I/S, coal flow 56.2	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting	
	5	5	5	5	5	5	Inner Air setting	
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting	
0.35 Avg	0.63	0.53	0.21	0.21	0.27	0.28	Combustion index	
683 Avg	679	683	688	687	664	699	Burner tip temp	
532 Avg	526	544	540	515	535	530	Burner body temp	
99 Avg	109	105	95	96	90	95	IBAMs flow KPPH	
591 Total	82.7	West	SA damper Position		East	82.8		

Windbox press 3.39	C6	C5	C4	C3	C2	C1		
I/S, coal flow 56.2	3.50	4.00	4.00	3.50	4.00	4.00	Spin Vane setting	
	7.0	5.5	5.5	5.5	5.5	7.0	Outer register setting	
	5	5	5	5	5	5	Inner Air setting	
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting	
0.51 Avg	0.52	0.61	0.26	0.59	0.50	0.52	Combustion index	
674 Avg	679	685	678	672	671	660	Burner tip temp	
518 Avg	503	531	505	536	525	506	Burner body temp	
100 Avg	96	103	97	93	102	111	IBAMs flow KPPH	
603 Total	83.0	West	SA damper Position		East	84.0		

Windbox press 3.07	G6	G5	G4	G3	G2	G1		
I/S, coal flow 57.2	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting	
	5	5	5	5	5	5	Inner Air setting	
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting	
0.60 Avg	0.65	0.83	0.63	0.23	0.57	0.64	Combustion index	
663 Avg	649	645	615	760	629	681	Burner tip temp	
524 Avg	538	531	508	525	526	513	Burner body temp	
99 Avg	98	85	107	99	92	111	IBAMs flow KPPH	
591 Total	83.1	West	SA damper Position		East	83.1		

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	2.7	4.0	3.8	E A
13'	2.3	4.4	3.2	F B
18'	3.0	4.0	3.5	G C
		3.41	% O2	H D

Ave

West % O2

6'	3.9	2.4	1.6	E A
13'	3.1	2.0	1.4	F B
18'	0.0	2.4	2.3	G C
Ave		2.38	% O2	H D

O2 Actual	2.98
O2 Target	2.99
NOx Actual	0.330
NOx Target	0.374

West		East
728	SA Air Temp	711
5.3	SA Duct Pr	5.0
744	Exit Gas Temp	759
2.38	Econ O2 %	3.41
-1.14	Drum Level	0.01
734	1st stg inlet t	720
127	1st stg sprays	23
701	1st stg outlet t	710
784	2nd stg inlet t	780
77	2nd stg sprays	99
759	2nd stg outlet t	756

73.6 Weather I/O
Temp F Plant Overview
Main Menu
Utilities
Unit 1 948 MW
Menu AQCS
U2 BURNER OVRWS
Burner Fronts
Unit 2 945 MW
Menu AQCS
Coal Yard
Common
02-Jun-08 12:37:11
IPSC

IP7021613

Display Unit 2 Burner Overview, 02-Jun-08 12:35:10

moved to 7th hole i.e. closed down

Next | Previous

941.06 mw
370.90 tph

O2 West 2.22 | O2 East 3.46

Windbox press 3.05	E6	E5	E4	E3	E2	E1
I/S, coal flow 52.8	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	5	5	5	5	5	5
	17.88	18.10	18.90	20.99	21.00	21.00
Avg 0.58	0.61	0.46	0.61	0.69	0.55	0.54
Avg 667	666	684	603	725	696	629
Avg 520	532	531	515	495	519	526
Avg 91	91	95	95	88	85	90
Total 548	77.4 West	SA damper Position			East	76.7

Windbox press 0.88	A6	A5	A4	A3	A2	A1
I/S, coal flow 0.1	4.00	4.00	3.50	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	7.0
	5	5	3	5	3	5
	21.00	21.00	20.99	18.90	18.10	17.88
Avg 0.01	0.00	0.00	0.04	0.00	0.00	0.00
Avg 1399	1366	1339	1455	1461	1465	1310
Avg 843	845	810	868	859	872	808
Avg 76	76	73	73	63	91	79
Total 458	35.4 West	SA damper Position			East	35.0

Windbox press 3.05	F6	F5	F4	F3	F2	F1
I/S, coal flow 52.9	4.00	3.00	3.50	4.00	4.00	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	5	5	5	5	5	5
	17.85	17.85	18.21	20.09	21.00	21.00
Avg 0.34	0.46	0.00	0.58	0.36	0.00	0.51
Avg 637	651	690	735	568	502	677
Avg 525	556	554	518	504	505	516
Avg 96	105	83	91	103	85	104
Total 575	77.6 West	SA damper Position			East	77.0

Windbox press 2.49	B6	B5	B4	B3	B2	B1
I/S, coal flow 51.9	4.00	4.00	4.00	3.50	4.00	3.50
	9.0	5.5	5.0	5.0	5.5	9.0
	5	5	5	5	5	5
	21.00	21.00	20.19	18.70	18.15	17.75
Avg 0.40	0.54	0.76	0.00	0.49	0.60	0.00
Avg 668	665	639	672	674	658	702
Avg 519	541	533	529	487	496	528
Avg 83	124	2	101	97	64	109
Total 499	77.0 West	SA damper Position			East	78.5

Drum Level -1.01 Avg
-1.07 West -2.11 Middle -0.18 East

Spin Vane setting	
Outer register setting	
Inner register setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
1/3 OFA % dmpr	2
2/3 OFA % dmpr	0
PSH Dmpr	RH Dmpr
100.0	30.1
Duct Press actual	target
53.4	52.9
4465 Total SA flow	
-0.54 Furnace Press	

O2 West 2.22 | O2 East 3.46

Windbox press 2.50	D6	D5	D4	D3	D2	D1
I/S, coal flow 53.1	4.00	4.00	4.00	4.00	3.50	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	5	5	5	5	5	5
	21.00	21.00	19.69	18.09	17.57	17.42
0.53 Avg	0.27	0.33	0.56	0.57	0.75	0.61
716 Avg	735	690	733	675	774	689
516 Avg	524	509	527	512	493	534
87 Avg	102	91	90	93	10	91
519 Total	78.1 West	SA damper Position			East	78.1

Windbox press 2.69	H6	H5	H4	H3	H2	H1
I/S, coal flow 52.7	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	8.0
	5	5	5	5	5	5
	17.42	17.57	18.09	19.69	21.00	21.00
0.43 Avg	0.71	0.49	0.41	0.31	0.23	0.47
678 Avg	711	699	643	680	638	697
523 Avg	519	537	533	508	520	522
94 Avg	103	99	90	91	86	89
564 Total	77.5 West	SA damper Position			East	77.4

Windbox press 2.84	C6	C5	C4	C3	C2	C1
I/S, coal flow 52.3	3.50	4.00	4.00	3.50	4.00	4.00
	7.0	5.5	5.5	5.5	5.5	7.0
	5	5	5	5	5	5
	21.00	21.00	20.41	19.24	18.76	17.31
0.54 Avg	0.46	0.58	0.76	0.64	0.36	0.50
674 Avg	682	679	665	666	670	686
509 Avg	493	520	493	531	518	500
96 Avg	91	97	93	88	96	105
574 Total	78.6 West	SA damper Position			East	78.3

Windbox press 2.54	G6	G5	G4	G3	G2	G1
I/S, coal flow 53.1	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	5.5	5.5	5.5	5.5	9.0
	5	5	5	5	5	5
	17.00	17.97	18.35	20.75	21.00	21.00
0.62 Avg	0.65	0.78	0.52	0.54	0.70	0.48
654 Avg	638	665	619	678	623	709
515 Avg	530	521	499	513	522	507
93 Avg	93	79	99	94	87	104
560 Total	77.7 West	SA damper Position			East	77.1

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	2.7	3.5	4.5	E
13'	2.2	3.2	3.8	A F B
18'	2.9	3.8	4.2	G C
		3.46	% O2	H D

Ave

West % O2

6'	3.6	2.6	2.4	E
13'	3.3	1.6	1.2	A F B
18'	0.0	1.9	1.5	G C
Ave		2.22	% O2	H D

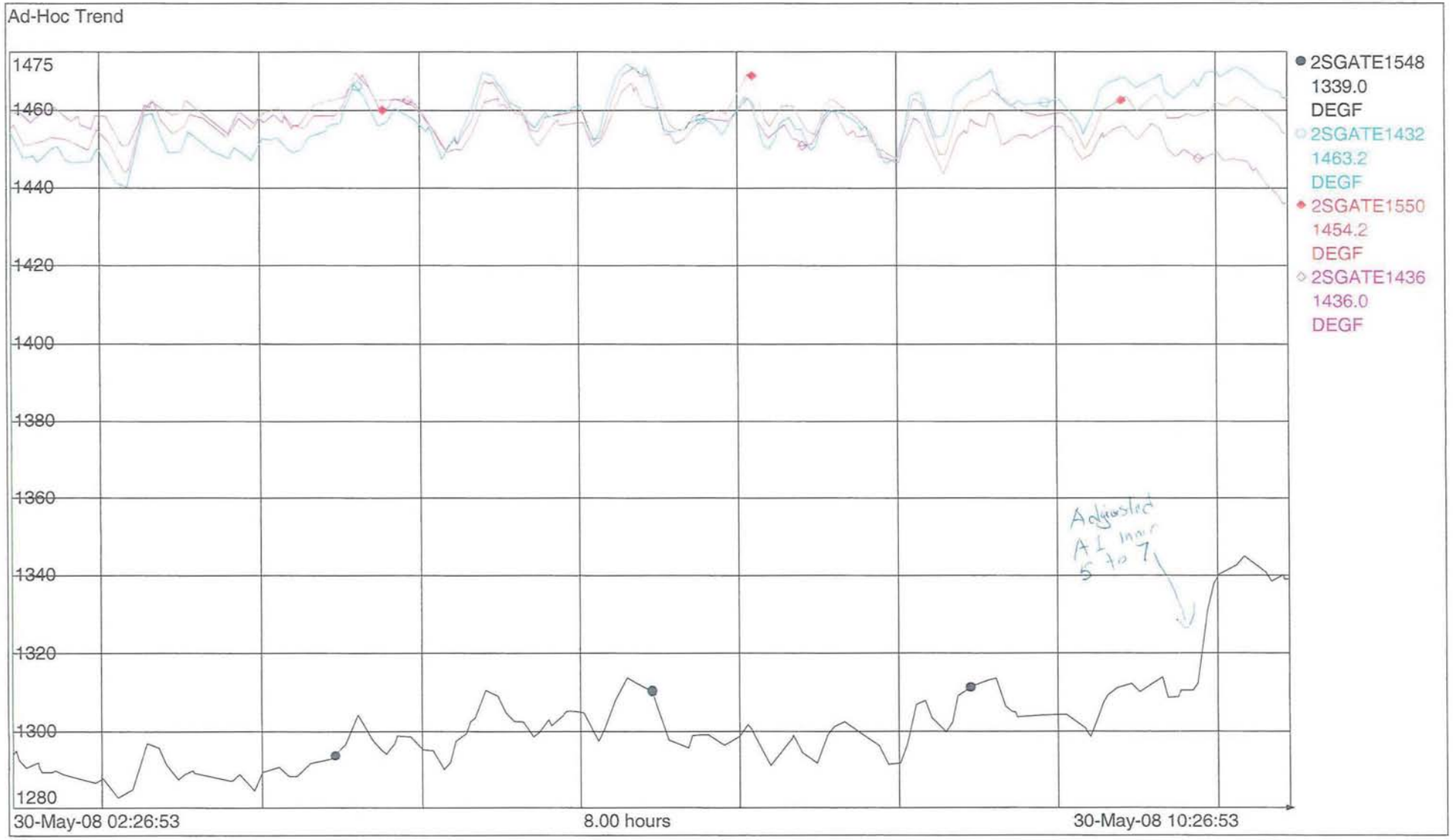
O2 Actual	2.89
O2 Target	2.98
NOx Actual	0.362
NOx Target	0.414

West		East
723	SA Air Temp	709
4.9	SA Duct Pr	4.5
742	Exit Gas Temp	761
2.22	Econ O2 %	3.46
-1.07	Drum Level	-0.18
736	1st stg inlet t	728
141	1st stg sprays	24
708	1st stg outlet t	715
781	2nd stg inlet t	782
33	2nd stg sprays	41
773	2nd stg outlet t	771

55.5 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 945 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 941 MW | Menu | AQCS | Coal Yard | Common | 30-May-08 08:25:40 | IPSC

IP7021614

Display Unit 2 Burner Overview, 30-May-08 08:23:44



Display Trend Display1, 30-May-08 10:24:46

IP7021615

Next

949.78 mw
388.90 tph

O2 West 2.54 | O2 East 3.33

Windbox press 3.96	E6	E5	E4	E3	E2	E1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
55.9	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.57	0.66	0.48	0.59	0.44	0.60	0.58	Combustion index
Avg 684	661	693	681	739	703	622	Burner tip temp
Avg 521	529	530	518	504	521	526	Burner body temp
Avg 101	101	106	106	98	94	100	IBAMs flow KPPH
Total 606	81.6 West	SA damper Position			East	81.6	

1/3 OFA % dmpr 2
2/3 OFA % dmpr 0

Windbox press 3.64	A6	A5	A4	A3	A2	A1	
	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
56.0	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.58	0.69	0.35	0.74	0.54	0.60	0.53	Combustion index
Avg 677	677	667	694	653	707	665	Burner tip temp
Avg 519	530	537	496	511	517	522	Burner body temp
Avg 106	106	98	101	89	127	114	IBAMs flow KPPH
Total 635	81.3 West	SA damper Position			East	81.7	

PSH Dmpr 65.1 | RH Dmpr 62.2

Windbox press 0.83	F6	F5	F4	F3	F2	F1	
	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
19.9	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00	Combustion index
Avg 1292	1285	1423	1386	1228	1156	1273	Burner tip temp
Avg 867	819	860	888	908	882	847	Burner body temp
Avg 72	82	60	69	79	66	78	IBAMs flow KPPH
Total 433	29.9 West	SA damper Position			East	29.9	

o/s showing coal but no coal for mill

Duct Press actual 47.9 | target 53.8

Windbox press 3.15	B6	B5	B4	B3	B2	B1	
	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
I/S, coal flow	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
54.1	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.42	0.72	0.68	0.00	0.51	0.51	0.00	Combustion index
Avg 671	644	630	660	728	671	693	Burner tip temp
Avg 515	536	526	524	483	497	526	Burner body temp
Avg 89	135	2	108	106	67	117	IBAMs flow KPPH
Total 535	81.4 West	SA damper Position			East	81.2	

4867 Total SA flow
-0.57 Furnace Press

Drum Level -0.75 Avg
-0.75 West -1.52 Middle 1.79 East

O2 West 2.54 | O2 East 3.33

	D6	D5	D4	D3	D2	D1	Windbox press 3.17
Spin Vane setting	4.00	4.00	4.00	4.00	3.50	4.00	I/S, coal flow
Outer register setting	8.0	5.5	5.0	5.0	5.5	8.0	54.6
Adjustable restrictor setting	21.00	21.00	19.69	18.09	17.57	17.42	
Combustion index	0.38	0.41	0.50	0.60	0.59	0.61	0.53 Avg
Burner tip temp	700	677	722	678	770	668	702 Avg
Burner body temp	516	508	524	514	495	535	515 Avg
IBAMs flow KPPH	112	99	99	102	110	125	105 Avg
	80.5 West	SA damper Position			East	80.7	631 Total

	H6	H5	H4	H3	H2	H1	Windbox press 3.42
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow
Outer register setting	8.0	5.5	5.5	5.5	5.5	8.0	55.9
Adjustable restrictor setting	17.42	17.57	18.09	19.69	21.00	21.00	
Combustion index	0.68	0.64	0.79	0.36	0.65	0.49	0.57 Avg
Burner tip temp	654	686	625	750	621	685	670 Avg
Burner body temp	516	535	530	513	518	522	522 Avg
IBAMs flow KPPH	114	110	101	100	96	98	103 Avg
	81.3 West	SA damper Position			East	81.7	616 Total

	C6	C5	C4	C3	C2	C1	Windbox press 3.60
Spin Vane setting	3.50	4.00	4.00	3.50	4.00	4.00	I/S, coal flow
Outer register setting	7.0	5.5	5.5	5.5	5.5	7.0	55.3
Adjustable restrictor setting	21.00	21.00	20.41	19.24	18.76	17.31	
Combustion index	0.68	0.56	0.79	0.59	0.57	0.47	0.60 Avg
Burner tip temp	694	661	668	667	684	678	675 Avg
Burner body temp	493	519	494	532	521	500	509 Avg
IBAMs flow KPPH	102	108	101	96	107	115	105 Avg
	80.6 West	SA damper Position			East	80.6	627 Total

	G6	G5	G4	G3	G2	G1	Windbox press 3.34
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow
Outer register setting	9.0	5.5	5.5	5.5	5.5	9.0	55.9
Adjustable restrictor setting	17.00	17.97	18.35	20.75	21.00	21.00	
Combustion index	0.50	0.83	0.52	0.70	0.62	0.67	0.65 Avg
Burner tip temp	622	646	613	667	633	700	647 Avg
Burner body temp	529	520	498	511	520	505	514 Avg
IBAMs flow KPPH	102	88	110	104	96	115	102 Avg
	80.9 West	SA damper Position			East	80.2	614 Total

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

Previous

U2 O2 Trends

East % O2				
6'	2.9	3.3	4.2	E A
13'	2.1	3.5	3.7	F B
18'	2.3	3.6	4.0	G C
		3.33	% O2	H D
Ave				

West % O2				
6'	3.6	2.6	2.3	E A
13'	3.4	2.3	1.5	F B
18'	0.0	3.1	1.5	G C
Ave		2.54	% O2	H D

O2 Actual	2.96
O2 Target	2.97
NOx Actual	0.406
NOx Target	0.411

West		East
709	SA Air Temp	698
5.8	SA Duct Pr	5.4
738	Exit Gas Temp	761
2.54	Econ O2 %	3.33
-0.75	Drum Level	1.79
725	1st stg inlet t	716
68	1st stg sprays	12
712	1st stg outlet t	715
783	2nd stg inlet t	783
73	2nd stg sprays	86
764	2nd stg outlet t	763

70.8 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 954 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 950 MW | Menu | AQCS | Coal Yard | Common | 28-May-08 14:14:40 | IPSC

After startup boiler tube leak. SAH Sector plates not I/S yet.

IP7021616

Display Unit 2 Burner Overview, 28-May-08 14:12:48

A4 inner 5th to 3rd hole

A1, A6 7.5 to 7.0

13:30 A6 back + 8.0 had burner 3.0 pt back 2.3

10:40 D2 5 to 3 inner

13:45 back to 5

Next

Previous

870.35 mw
325.86 tph

O2 West 2.46 O2 East 3.25

Windbox press 2.21	E6	E5	E4	E3	E2	E1	Spin Vane setting	Outer register setting	Adjustable restrictor setting	Combustion index	Burner tip temp	Burner body temp	IBAMs flow KPPH
I/S, coal flow 47.2	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.50	4.00	4.00	4.00
	8.0	5.5	5.0	5.0	5.5	8.0	8.0	5.5	5.0	5.0	5.5	8.0	8.0
	17.88	18.10	18.90	20.99	21.00	21.00	21.00	21.00	19.69	18.09	17.57	17.42	17.88
Avg 0.44	0.42	0.40	0.51	0.44	0.35	0.51	0.33	0.36	0.53	0.55	0.58	0.47	0.46 Avg
Avg 680	670	698	629	748	702	633	706	680	732	679	765	671	705 Avg
Avg 514	526	525	510	493	512	518	511	512	518	507	490	529	511 Avg
Avg 81	81	85	85	79	76	80	90	80	81	83	35	58	63 Avg
Total 488	68.3 West	SA damper Position			East	68.6	68.4 West	SA damper Position			East	69.3	380 Total

1/3 OFA % dmpr 2
2/3 OFA % dmpr 0

Windbox press 0.50	A6	A5	A4	A3	A2	A1	Spin Vane setting	Outer register setting	Adjustable restrictor setting	Combustion index	Burner tip temp	Burner body temp	IBAMs flow KPPH
I/S, coal flow 0.1	4.00	4.00	3.50	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	8.0	8.0	5.5	5.5	5.5	5.5	8.0	8.0
	21.00	21.00	20.99	18.90	18.10	17.88	17.42	17.57	18.09	19.69	21.00	21.00	21.00
Avg 0.01	0.00	0.00	0.04	0.00	0.00	0.00	0.65	0.52	0.45	0.36	0.49	0.33	0.45 Avg
Avg 1406	1342	1352	1516	1462	1476	1289	710	701	634	726	628	691	681 Avg
Avg 914	871	862	965	954	948	886	513	533	529	506	512	514	518 Avg
Avg 69	68	67	66	56	82	72	92	89	82	82	78	79	84 Avg
Total 411	34.4 West	SA damper Position			East	34.9	68.7 West	SA damper Position			East	68.4	502 Total

PSH Dmpr 92.3 RH Dmpr 36.7

Windbox press 2.25	F6	F5	F4	F3	F2	F1	Spin Vane setting	Outer register setting	Adjustable restrictor setting	Combustion index	Burner tip temp	Burner body temp	IBAMs flow KPPH
I/S, coal flow 46.4	4.00	3.00	3.50	4.00	4.00	4.00	3.50	4.00	4.00	3.50	4.00	4.00	4.00
	8.0	5.5	5.0	5.0	5.5	8.0	7.0	5.5	5.5	5.5	5.5	7.0	7.0
	17.85	17.85	18.21	20.09	21.00	21.00	21.00	21.00	20.41	19.24	18.76	17.31	17.31
Avg 0.32	0.43	0.00	0.50	0.27	0.00	0.55	0.54	0.40	0.65	0.53	0.30	0.44	0.48 Avg
Avg 641	643	703	736	603	499	663	679	695	679	685	677	680	682 Avg
Avg 519	547	551	510	499	502	505	483	516	488	519	515	494	503 Avg
Avg 86	97	74	82	92	78	94	82	87	83	77	86	95	85 Avg
Total 515	69.5 West	SA damper Position			East	69.0	69.0 West	SA damper Position			East	68.7	510 Total

Duct Press actual 52.7 target 50.5

Windbox press 1.72	B6	B5	B4	B3	B2	B1	Spin Vane setting	Outer register setting	Adjustable restrictor setting	Combustion index	Burner tip temp	Burner body temp	IBAMs flow KPPH
I/S, coal flow 46.0	4.00	4.00	4.00	3.50	4.00	3.50	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	5.5	5.0	5.0	5.5	9.0	9.0	5.5	5.5	5.5	5.5	9.0	9.0
	21.00	21.00	20.19	18.70	18.15	17.75	17.00	17.97	18.35	20.75	21.00	21.00	21.00
Avg 0.34	0.72	0.55	0.00	0.45	0.44	0.00	0.58	0.78	0.67	0.58	0.57	0.52	0.62 Avg
Avg 682	649	669	676	726	672	703	636	652	620	686	633	685	652 Avg
Avg 513	532	527	520	483	494	523	524	514	494	509	518	493	509 Avg
Avg 74	111	2	90	87	59	97	84	72	89	85	79	94	83 Avg
Total 446	68.7 West	SA damper Position			East	68.3	68.9 West	SA damper Position			East	69.6	499 Total

3933 Total SA flow

-0.42 Furnace Press

Drum Level -1.20 Avg
-1.36 West -2.12 Middle -0.00 East

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2				
6'	2.7	3.4	3.9	E A F
13'	2.2	3.2	3.6	B G C
18'	3.0	3.6	3.6	H D
			3.25	% O2

Ave West % O2				
6'	3.9	3.0	2.7	E A F
13'	3.0	2.1	1.5	B G C
18'	0.0	1.8	1.1	H D
Ave			2.46	% O2

O2 Actual	2.85
O2 Target	3.13
NOx Actual	0.346
NOx Target	0.427

West		East
708	SA Air Temp	696
4.0	SA Duct Pr	3.7
719	Exit Gas Temp	738
2.46	Econ O2 %	3.25
-1.36	Drum Level	-0.00
722	1st stg inlet t	715
74	1st stg sprays	7
707	1st stg outlet t	709
779	2nd stg inlet t	782
33	2nd stg sprays	46
771	2nd stg outlet t	772

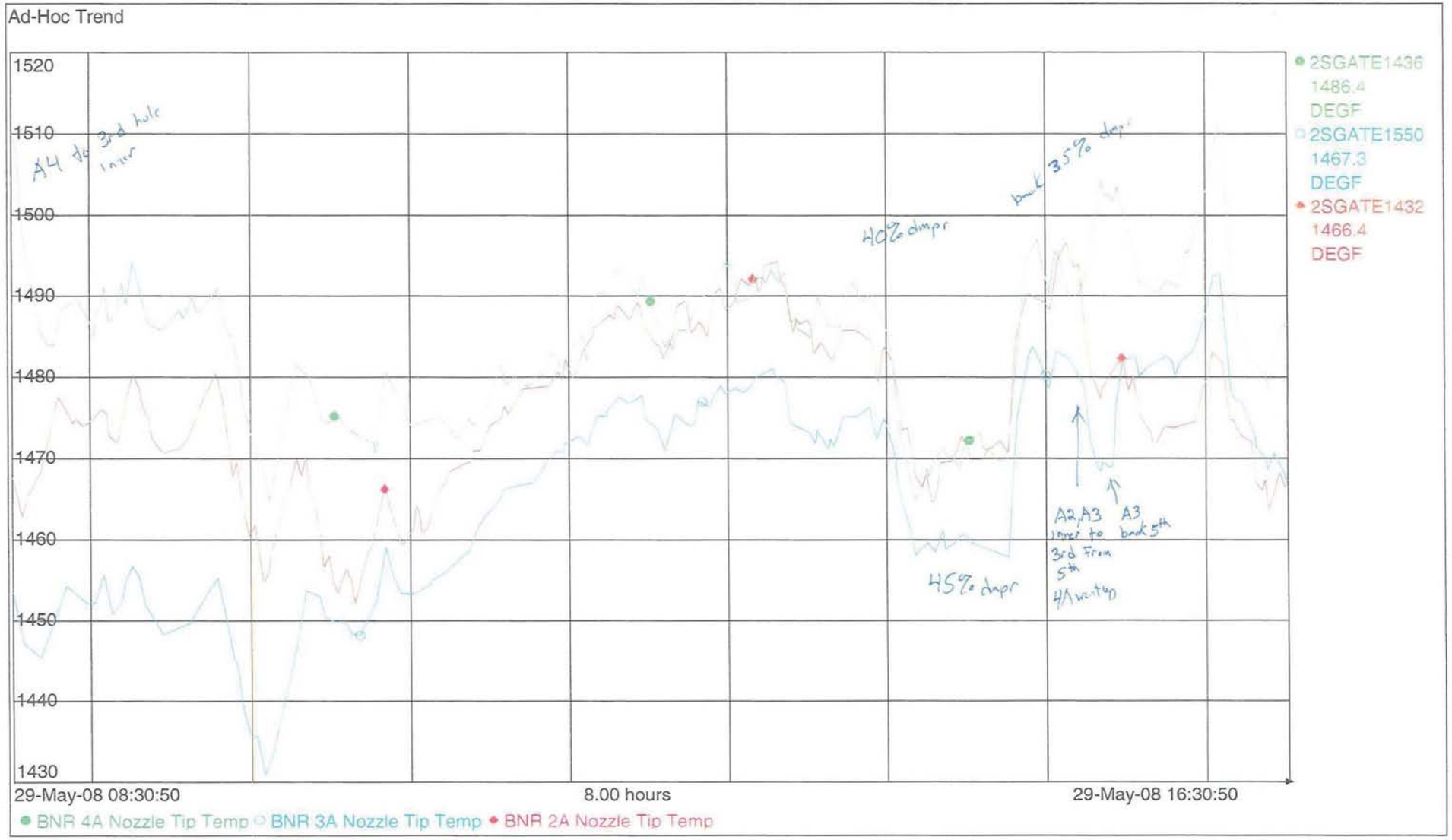
50.7 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 884 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 870 MW | Menu | AQCS | Coal Yard | Common | 29-May-08 08:10:09 IPSC

3:10 A2 TA3 5 to 3rd

#3 back 5 inner due to A4 increasing past alarm limit

Display Unit 2 Burner Overview, 29-May-08 08:08:33

IP70216 17



Display Trend Display1, 29-May-08 16:28:40

IP7021618

#19 settling
B o/s

Next

O2 West 3.10 | O2 East 3.14

947.53 mw
379.30 tph

Windbox press 2.58	E6	E5	E4	E3	E2	E1	
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
54.5	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.50	0.49	0.43	0.68	0.45	0.59	0.37	Combustion index
Avg 696	695	726	635	774	659	682	Burner tip temp
Avg 515	521	519	505	498	519	526	Burner body temp
Avg 90	91	95	93	88	82	90	IBAMs flow KPPH
Total 539	79.2 West	SA damper Position			East	79.9	

1/3 OFA % dmpr 1
2/3 OFA % dmpr 56

Windbox press 2.29	A6	A5	A4	A3	A2	A1	
I/S, coal flow	4.00	4.00	3.50	4.00	4.00	4.00	Spin Vane setting
54.5	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.59	0.48	0.49	0.60	0.65	0.67	0.64	Combustion index
Avg 698	702	688	716	666	718	695	Burner tip temp
Avg 515	529	532	495	507	511	513	Burner body temp
Avg 93	94	88	90	78	110	100	IBAMs flow KPPH
Total 560	80.8 West	SA damper Position			East	79.9	

PSH Dmpr 100.0 | RH Dmpr 30.0

Windbox press 2.47	F6	F5	F4	F3	F2	F1	
I/S, coal flow	4.00	3.00	3.50	4.00	4.00	4.00	Spin Vane setting
54.0	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.36	0.63	0.00	0.40	0.35	0.00	0.76	Combustion index
Avg 631	646	643	742	555	514	683	Burner tip temp
Avg 516	534	541	505	508	502	505	Burner body temp
Avg 91	102	79	87	98	82	100	IBAMs flow KPPH
Total 548	78.8 West	SA damper Position			East	79.7	

Duct Press actual 53.7 | target 51.7

Windbox press -0.41	B6	B5	B4	B3	B2	B1	
I/S, coal flow	4.00	4.00	4.00	3.50	4.00	3.50	Spin Vane setting
0.0	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00	Combustion index
Avg 1217	1105	1206	1207	1305	1316	1161	Burner tip temp
Avg 846	774	836	859	911	882	816	Burner body temp
Avg 58	84	2	68	64	62	67	IBAMs flow KPPH
Total 347	25.2 West	SA damper Position			East	24.5	

4847 Total SA flow
-0.74 Furnace Press

Drum Level -0.11 Avg
-0.11 West -0.98 Middle 4.70 East

O2 West 3.10 | O2 East 3.14

Windbox press 1.97	D6	D5	D4	D3	D2	D1	
I/S, coal flow	4.00	4.00	4.00	4.00	3.50	4.00	Spin Vane setting
53.8	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
	0.39	0.31	0.37	0.44	0.61	0.65	Combustion index
	726	652	748	702	782	686	Burner tip temp
	506	508	504	518	485	536	Burner body temp
	99	85	87	92	69	88	IBAMs flow KPPH
0.46 Avg	715 Avg	509 Avg	87 Avg				
80.4 West	SA damper Position			East	79.1	520 Total	

Windbox press 2.17	H6	H5	H4	H3	H2	H1	
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
54.3	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
	0.59	0.44	0.25	0.18	0.27	0.45	Combustion index
	683	749	684	673	709	664	Burner tip temp
	510	522	521	506	513	508	Burner body temp
	100	96	86	87	83	87	IBAMs flow KPPH
0.36 Avg	694 Avg	513 Avg	90 Avg				
80.3 West	SA damper Position			East	79.0	540 Total	

Windbox press 2.33	C6	C5	C4	C3	C2	C1	
I/S, coal flow	3.50	4.00	4.00	3.50	4.00	4.00	Spin Vane setting
53.4	7.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
	0.63	0.31	0.40	0.27	0.65	0.58	Combustion index
	696	715	667	812	676	668	Burner tip temp
	484	507	490	526	515	495	Burner body temp
	89	94	90	86	93	102	IBAMs flow KPPH
0.47 Avg	706 Avg	503 Avg	92 Avg				
79.7 West	SA damper Position			East	79.6	553 Total	

Windbox press 2.05	G6	G5	G4	G3	G2	G1	
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
54.6	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
	0.63	0.77	0.70	0.44	0.51	0.52	Combustion index
	662	660	612	679	641	675	Burner tip temp
	522	514	493	505	509	501	Burner body temp
	90	78	95	90	84	100	IBAMs flow KPPH
0.59 Avg	655 Avg	507 Avg	90 Avg				
80.3 West	SA damper Position			East	80.1	537 Total	

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

Previous

U2 O2 Trends

East % O2				
6'	2.7	3.8	2.7	E A
13'	1.8	3.9	3.3	F B
18'	2.1	3.8	4.1	G C
Ave		3.14	% O2	H D

West % O2				
6'	2.9	1.5	0.0	E A
13'	3.7	3.1	1.9	F B
18'	0.0	4.1	3.9	G C
Ave		3.10	% O2	H D

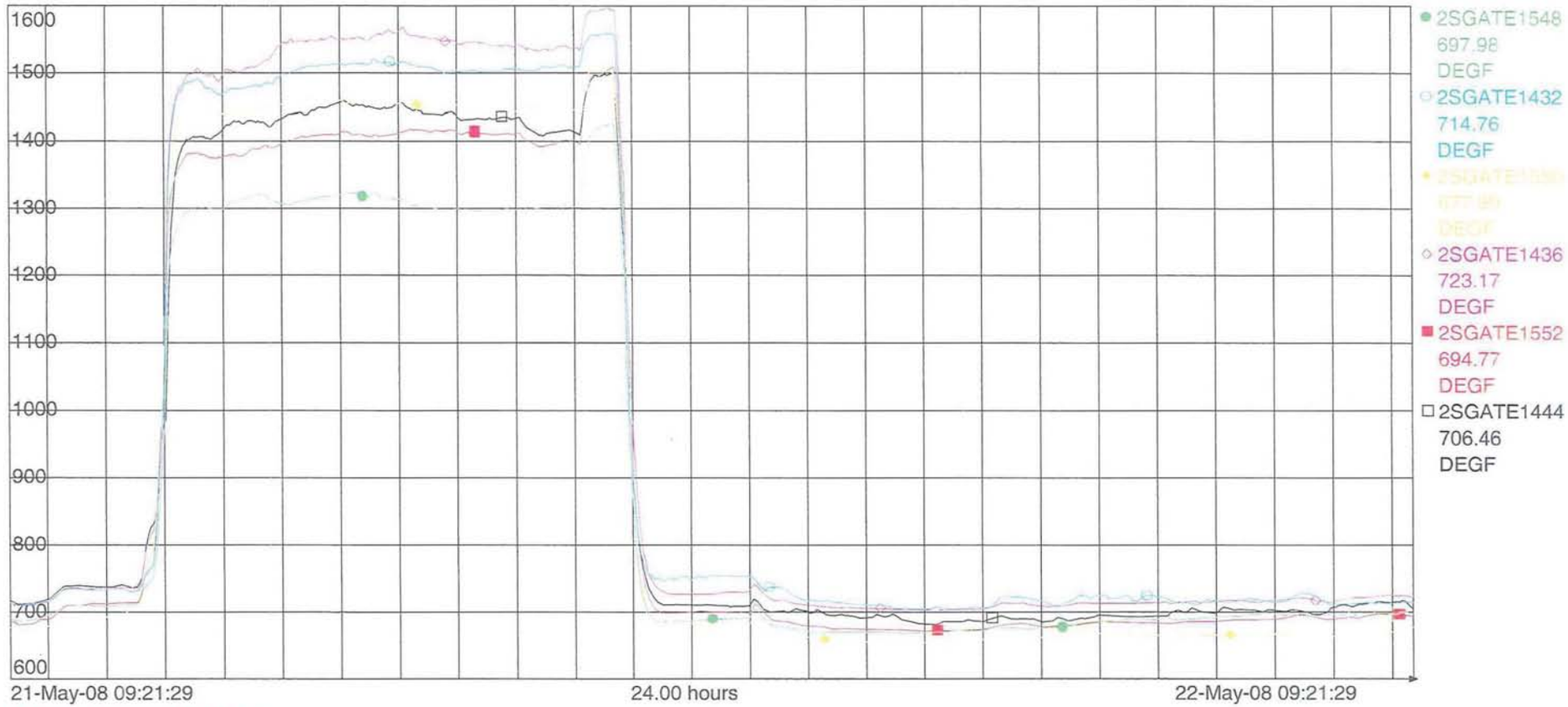
O2 Actual 3.13
O2 Target 2.99
NOx Actual 0.407
NOx Target 0.401

West		East
717	SA Air Temp	712
4.6	SA Duct Pr	4.1
738	Exit Gas Temp	763
3.10	Econ O2 %	3.14
-0.11	Drum Level	4.70
732	1st stg inlet t	734
140	1st stg sprays	50
698	1st stg outlet t	709
777	2nd stg inlet t	774
41	2nd stg sprays	30
767	2nd stg outlet t	767

39.8 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 948 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 948 MW | Menu | AQCS | Coal Yard | Common | 22-May-08 06:42:09 | IPSC

IP7021619

Ad-Hoc Trend

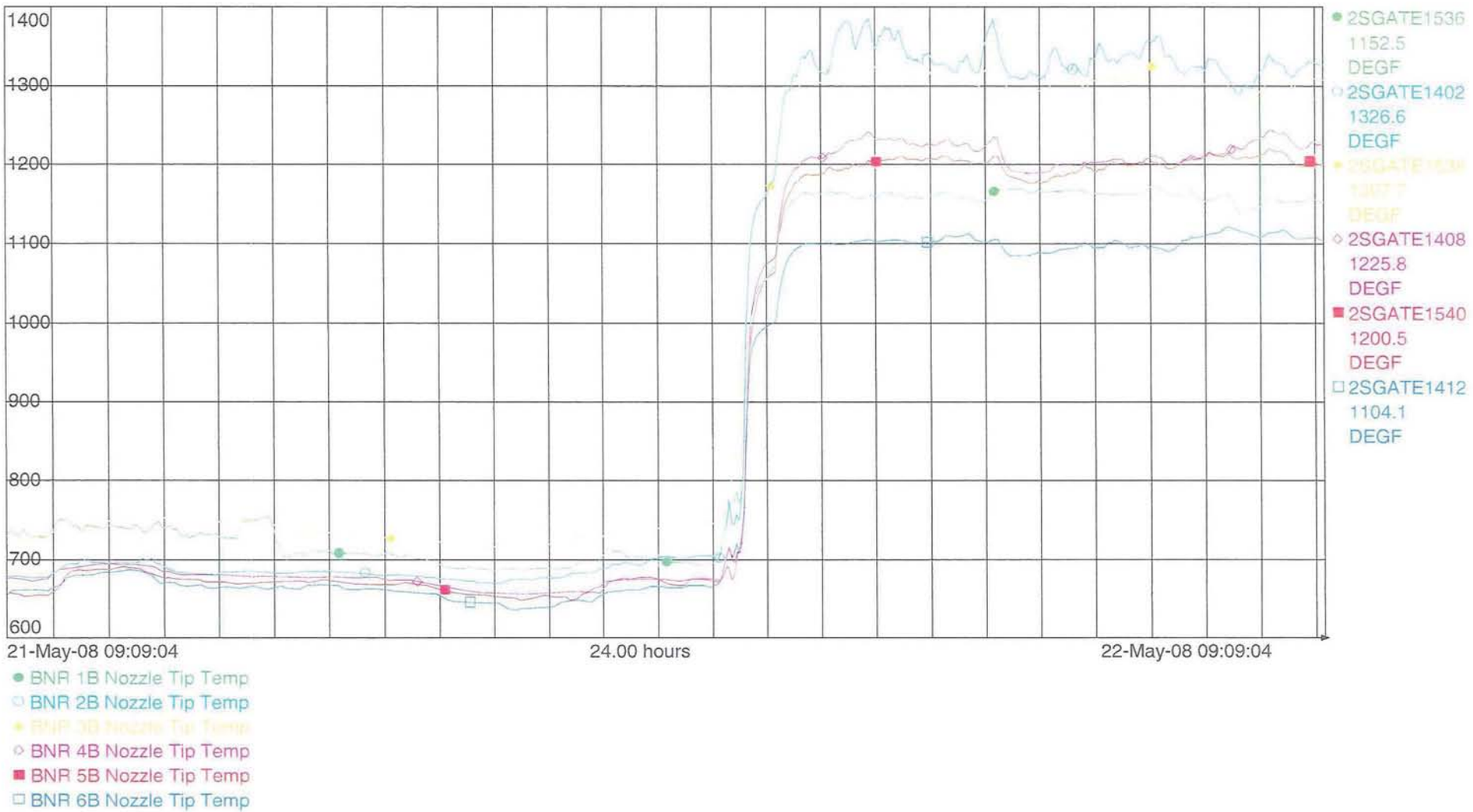


- BNR 1A Nozzle Tip Temp
- BNR 2A Nozzle Tip Temp
- BNR 3A Nozzle Tip Temp
- BNR 4A Nozzle Tip Temp
- BNR 5A Nozzle Tip Temp
- BNR 6A Nozzle Tip Temp

IP70216 20

Display Trend Display1, 22-May-08 09:19:29

Ad-Hoc Trend



IP70216 21

Display Trend Display1, 22-May-08 09:07:04

' 'e Mag
A o/s

Next | Previous

O2 West 2.57 | O2 East 3.38

Windbox press 2.73	E6	E5	E4	E3	E2	E1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
55.7	8.0	5.5	5.0	5.0	5.5	8.0
	17.88	18.10	18.90	20.99	21.00	21.00
Avg 0.53	0.55	0.61	0.66	0.41	0.59	0.36
Avg 681	714	689	640	719	660	666
Avg 513	524	518	503	491	521	524
Avg 84	86	89	88	83	77	85
Total 507	80.9 West	SA damper Position			East	80.5

Windbox press 0.80	A6	A5	A4	A3	A2	A1
I/S, coal flow	4.00	4.00	3.50	4.00	4.00	4.00
0.1	8.0	5.5	5.5	5.5	5.5	8.0
	21.00	21.00	20.99	18.90	18.10	17.88
Avg 0.01	0.00	0.04	0.04	0.00	0.00	0.00
Avg 1453	1447	1408	1559	1464	1518	1321
Avg 916	912	889	958	929	945	863
Avg 70	68	67	68	61	82	74
Total 421	34.5 West	SA damper Position			East	34.9

Windbox press 2.85	F6	F5	F4	F3	F2	F1
I/S, coal flow	4.00	3.00	3.50	4.00	4.00	4.00
55.4	8.0	5.5	5.0	5.0	5.5	8.0
	17.85	17.85	18.21	20.09	21.00	21.00
Avg 0.37	0.74	0.00	0.56	0.33	0.00	0.59
Avg 640	663	675	749	541	513	698
Avg 522	541	549	513	509	505	518
Avg 89	98	77	84	96	79	97
Total 532	81.4 West	SA damper Position			East	80.6

Windbox press 2.31	B6	B5	B4	B3	B2	B1
I/S, coal flow	4.00	4.00	4.00	3.50	4.00	3.50
55.9	9.0	5.5	5.0	5.0	5.5	9.0
	21.00	21.00	20.19	18.70	18.15	17.75
Avg 0.37	0.57	0.71	0.00	0.41	0.53	0.00
Avg 688	663	668	678	730	683	707
Avg 514	531	526	519	481	494	531
Avg 82	119	2	94	92	84	98
Total 489	81.5 West	SA damper Position			East	80.6

Drum Level -0.54 Avg
-0.40 West -1.29 Middle 5.14 East

945.86 mw
388.53 tph

Spin Vane setting	
Outer register setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
1/3 OFA % dmpr	1
2/3 OFA % dmpr	56
PSH Dmpr	RH Dmpr
99.0	31.0
Duct Press actual	target
53.3	52.0
4693	Total SA flow
-0.27	Furnace Press

O2 West 2.57 | O2 East 3.38

Windbox press 2.24	D6	D5	D4	D3	D2	D1
I/S, coal flow	4.00	4.00	4.00	4.00	3.50	4.00
55.5	8.0	5.5	5.0	5.0	5.5	8.0
	21.00	21.00	19.69	18.09	17.57	17.42
0.45 Avg	0.34	0.40	0.20	0.52	0.65	0.60
713 Avg	733	657	732	706	760	689
512 Avg	508	510	505	521	488	538
82 Avg	94	81	82	88	64	84
494 Total	80.6 West	SA damper Position			East	80.0

Windbox press 2.46	H6	H5	H4	H3	H2	H1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
55.4	8.0	5.5	5.5	5.5	5.5	8.0
	17.42	17.57	18.09	19.69	21.00	21.00
0.36 Avg	0.62	0.46	0.30	0.26	0.20	0.31
702 Avg	684	756	700	684	714	674
517 Avg	514	526	528	509	512	510
86 Avg	96	92	84	85	80	82
519 Total	79.7 West	SA damper Position			East	80.9

Windbox press 2.58	C6	C5	C4	C3	C2	C1
I/S, coal flow	3.50	4.00	4.00	3.50	4.00	4.00
55.5	7.0	5.5	5.5	5.5	5.5	7.0
	21.00	21.00	20.41	19.24	18.76	17.31
0.45 Avg	0.48	0.27	0.44	0.25	0.68	0.58
702 Avg	685	705	690	717	716	699
506 Avg	487	509	493	529	519	498
88 Avg	84	90	86	81	89	98
527 Total	80.5 West	SA damper Position			East	80.6

Windbox press 2.32	G6	G5	G4	G3	G2	G1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
56.1	9.0	5.5	5.5	5.5	5.5	9.0
	17.00	17.97	18.35	20.75	21.00	21.00
0.56 Avg	0.62	0.74	0.64	0.47	0.38	0.54
672 Avg	655	680	617	743	656	685
511 Avg	525	518	497	510	513	502
85 Avg	86	74	91	86	79	96
512 Total	81.0 West	SA damper Position			East	79.8

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	3.7	4.6	3.8	E A
13'	2.3	3.5	3.4	F B
18'	2.1	3.5	3.7	G C
			3.38 % O2	H D

Ave

West % O2

6'	4.3	2.8	1.1	E A
13'	3.7	2.7	1.0	F B
18'	0.0	3.0	1.9	G C
Ave			2.57 % O2	H D

O2 Actual	3.00
O2 Target	2.97
NOx Actual	0.412
NOx Target	0.408

West		East
720	SA Air Temp	712
4.6	SA Duct Pr	4.2
738	Exit Gas Temp	760
2.57	Econ O2 %	3.38
-0.40	Drum Level	5.14
723	1st stg inlet t	721
119	1st stg sprays	18
705	1st stg outlet t	711
777	2nd stg inlet t	776
63	2nd stg sprays	72
761	2nd stg outlet t	763

57.4 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 949 MW | Menu | AQCS

U2 BURNER OVRWS

Burner Fronts

Unit 2 946 MW | Menu | AQCS | Coal Yard | Common

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A o/s

#11

A6 4 : 1

has pen 6.5

Next

Previous

O2 West 2.22 | O2 East 3.30

Windbox press 2.56	E6	E5	E4	E3	E2	E1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
55.7	8.0	5.5	5.0	5.0	5.5	8.0
	17.88	18.10	18.90	20.99	21.00	21.00
Avg 0.51	0.51	0.59	0.65	0.38	0.58	0.35
Avg 687	717	692	645	726	666	677
Avg 516	528	521	506	492	521	528
Avg 83	84	87	87	82	76	83
Total 499	80.7 West	SA damper Position			East	80.9

Windbox press 0.72	A6	A5	A4	A3	A2	A1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
0.1	~~8.0~~ 6.5	5.5	5.0	5.0	5.5	~~8.0~~ 6.5
	21.00	21.00	20.99	18.90	18.10	17.88
Avg 0.01	0.00	0.05	0.04	0.00	0.00	0.00
Avg 1417	1399	1379	1492	1456	1485	1293
Avg 715	691	703	733	732	740	692
Avg 71	67	66	72	67	82	71
Total 425	34.5 West	SA damper Position			East	34.9

Windbox press 2.69	F6	F5	F4	F3	F2	F1
I/S, coal flow	4.00	3.00	3.50	4.00	4.00	4.00
55.4	8.0	5.5	5.0	5.0	5.5	8.0
	17.85	17.85	18.21	20.09	21.00	21.00
Avg 0.35	0.62	0.00	0.57	0.34	0.00	0.55
Avg 641	667	681	746	539	513	701
Avg 525	543	553	516	513	508	519
Avg 87	97	75	83	94	78	96
Total 522	80.5 West	SA damper Position			East	80.5

Windbox press 2.10	B6	B5	B4	B3	B2	B1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
54.7	9.0	5.5	5.0	5.0	5.5	9.0
	21.00	21.00	20.19	18.70	18.15	17.75
Avg 0.35	0.53	0.64	0.00	0.49	0.44	0.00
Avg 697	667	675	682	745	683	729
Avg 516	534	529	520	483	498	528
Avg 82	116	2	92	93	83	106
Total 491	81.1 West	SA damper Position			East	80.4

Drum Level -0.49 Avg
-0.49 West -1.50 Middle 4.92 East

946.00 mw
387.55 tph

Spin Vane setting	
Outer register setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
1/3 OFA % dmpr	2
2/3 OFA % dmpr	56
PSH Dmpr	RH Dmpr
91.7	37.2
Duct Press actual	target
53.3	52.4
4612	Total SA flow
-0.43	Furnace Press

O2 West 2.22 | O2 East 3.30

Windbox press 2.08	D6	D5	D4	D3	D2	D1
I/S, coal flow	4.00	4.00	4.00	4.00	3.50	4.00
55.5	8.0	5.5	5.0	5.0	5.5	8.0
	21.00	21.00	19.69	18.09	17.57	17.42
0.44 Avg	0.35	0.34	0.21	0.46	0.68	0.62
723 Avg	735	665	751	713	775	699
514 Avg	509	513	508	524	490	542
74 Avg	92	79	81	87	42	66
447 Total	80.6 West	SA damper Position			East	81.8

Windbox press 2.29	H6	H5	H4	H3	H2	H1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
55.6	8.0	5.5	5.5	5.5	5.5	8.0
	17.42	17.57	18.09	19.69	21.00	21.00
0.39 Avg	0.61	0.42	0.28	0.30	0.28	0.43
709 Avg	703	758	682	704	729	678
519 Avg	517	528	531	512	514	513
85 Avg	94	90	83	83	79	82
511 Total	79.9 West	SA damper Position			East	81.0

Windbox press 2.41	C6	C5	C4	C3	C2	C1
I/S, coal flow	3.50	4.00	4.00	3.50	4.00	4.00
55.2	7.0	5.5	5.5	5.5	5.5	7.0
	21.00	21.00	20.41	19.24	18.76	17.31
0.42 Avg	0.48	0.28	0.46	0.27	0.59	0.44
718 Avg	688	717	696	767	739	702
509 Avg	491	512	497	531	522	501
87 Avg	84	88	85	81	87	96
521 Total	80.2 West	SA damper Position			East	80.0

Windbox press 2.14	G6	G5	G4	G3	G2	G1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
55.5	9.0	5.5	5.5	5.5	5.5	9.0
	17.00	17.97	18.35	20.75	21.00	21.00
0.57 Avg	0.60	0.78	0.72	0.46	0.39	0.48
671 Avg	652	686	618	730	655	687
514 Avg	528	521	499	514	514	505
85 Avg	85	73	91	85	79	94
507 Total	79.7 West	SA damper Position			East	80.1

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	4.0	4.7	3.6	E A
13'	2.8	3.2	3.0	F B
18'	2.2	3.0	3.2	G C
			3.30 % O2	H D

Ave

West % O2

6'	3.9	2.1	1.1	E A
13'	3.3	2.3	1.0	F B
18'	0.0	2.8	1.8	G C
Ave		2.22 % O2		H D

O2 Actual	2.78
O2 Target	2.96
NOx Actual	0.401
NOx Target	0.406

West		East
726	SA Air Temp	719
4.3	SA Duct Pr	4.0
744	Exit Gas Temp	765
2.22	Econ O2 %	3.30
-0.49	Drum Level	4.92
727	1st stg inlet t	728
110	1st stg sprays	41
707	1st stg outlet t	709
774	2nd stg inlet t	775
18	2nd stg sprays	17
778	2nd stg outlet t	774

49.9 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 950 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 946 MW | Menu | AQCS | Coal Yard | Common | 21-May-08 12:23:11 IPSC

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A1) 8 , set F4 to 3.5 on spin #8

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O2 West 2.62 | O2 East 3.01

Windbox press 2.36	E6	E5	E4	E3	E2	E1	Spin Vane setting
I/S, coal flow 49.1	4.00	4.00	4.00	4.00	4.00	4.00	
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.47	0.44	0.57	0.57	0.43	0.55	0.25	Combustion index
Avg 699	731	697	655	737	674	699	Burner tip temp
Avg 518	528	517	509	499	521	532	Burner body temp
Avg 82	84	86	86	81	75	82	IBAMs flow KPPH
Total 493	70.2 West	SA damper Position			East	70.7	

Windbox press 2.06	A6	A5	A4	A3	A2	A1	Spin Vane setting
I/S, coal flow 48.8	4.00	4.00	4.00	4.00	4.00	4.00	
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.44	0.27	0.37	0.47	0.40	0.44	0.66	Combustion index
Avg 720	737	713	736	692	733	708	Burner tip temp
Avg 514	534	532	494	495	514	514	Burner body temp
Avg 88	84	79	87	84	102	89	IBAMs flow KPPH
Total 525	70.8 West	SA damper Position			East	70.5	

Windbox press 2.32	F6	F5	F4	F3	F2	F1	Spin Vane setting
I/S, coal flow 48.7	4.00	3.00	3.50	4.00	4.00	4.00	
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.33	0.63	0.00	0.55	0.33	0.00	0.47	Combustion index
Avg 661	694	709	771	557	527	709	Burner tip temp
Avg 521	536	552	512	514	508	507	Burner body temp
Avg 85	95	73	81	91	77	93	IBAMs flow KPPH
Total 510	70.4 West	SA damper Position			East	70.4	

Windbox press 1.76	B6	B5	B4	B3	B2	B1	Spin Vane setting
I/S, coal flow 47.9	4.00	4.00	4.00	4.00	4.00	4.00	
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.32	0.61	0.55	0.00	0.38	0.41	0.00	Combustion index
Avg 709	684	688	695	748	696	743	Burner tip temp
Avg 513	530	529	518	480	497	525	Burner body temp
Avg 80	113	2	90	90	82	101	IBAMs flow KPPH
Total 479	71.3 West	SA damper Position			East	71.2	

Drum Level -0.41 Avg
-0.35 West -1.39 Middle 3.99 East

948.22 mw
388.15 tph

1/3 OFA % dmpr 2
2/3 OFA % dmpr 56

PSH Dmpr 99.9 | RH Dmpr 30.1

Duct Press actual 53.6 | target 48.9

4556 Total SA flow
-0.41 Furnace Press

O2 West 2.62 | O2 East 3.01

D6	D5	D4	D3	D2	D1	Windbox press 1.76
4.00	4.00	4.00	4.00	3.50	4.00	I/S, coal flow 48.4
8.0	5.5	5.0	5.0	5.5	8.0	
21.00	21.00	19.69	18.09	17.57	17.42	
0.25	0.40	0.17	0.42	0.61	0.61	0.41 Avg
749	674	761	723	775	707	731 Avg
514	517	511	522	490	543	517 Avg
88	78	79	85	9	50	65 Avg
70.4 West	SA damper Position			East	70.4	389 Total

H6	H5	H4	H3	H2	H1	Windbox press 1.95
4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 48.5
8.0	5.5	5.5	5.5	5.5	8.0	
17.42	17.57	18.09	19.69	21.00	21.00	
0.58	0.42	0.22	0.30	0.27	0.41	0.37 Avg
720	774	697	721	729	685	721 Avg
517	528	535	510	513	512	519 Avg
92	88	81	81	77	79	83 Avg
71.5 West	SA damper Position			East	70.9	498 Total

C6	C5	C4	C3	C2	C1	Windbox press 2.07
3.50	4.00	4.00	3.50	4.00	4.00	I/S, coal flow 48.6
7.0	5.5	5.5	5.5	5.5	7.0	
21.00	21.00	20.41	19.24	18.76	17.31	
0.48	0.26	0.37	0.24	0.65	0.42	0.40 Avg
693	732	711	800	718	712	728 Avg
488	513	493	526	521	500	507 Avg
82	86	82	78	85	94	84 Avg
71.4 West	SA damper Position			East	71.5	507 Total

G6	G5	G4	G3	G2	G1	Windbox press 1.79
4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 48.6
9.0	5.5	5.5	5.5	5.5	9.0	
17.00	17.97	18.35	20.75	21.00	21.00	
0.61	0.62	0.54	0.43	0.31	0.43	0.49 Avg
661	698	647	718	665	696	681 Avg
529	519	501	513	514	495	512 Avg
82	73	89	83	76	91	82 Avg
70.9 West	SA damper Position			East	71.5	494 Total

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	3.1	4.2	3.9	E A
13'	1.8	3.0	3.4	F B
18'	1.3	2.8	3.6	G C
		3.01	% O2	H D

Ave

West % O2

6'	4.1	2.5	0.8	E A
13'	4.0	2.7	1.3	F B
18'	0.0	3.0	2.3	G C
Ave		2.62	% O2	H D

O2 Actual 2.83
O2 Target 2.97
NOx Actual 0.446
NOx Target 0.406

West		East
728	SA Air Temp	722
4.0	SA Duct Pr	3.6
743	Exit Gas Temp	766
2.62	Econ O2 %	3.01
-0.35	Drum Level	3.99
727	1st stg inlet t	727
127	1st stg sprays	31
707	1st stg outlet t	712
774	2nd stg inlet t	774
20	2nd stg sprays	18
776	2nd stg outlet t	776

47.2 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 949 MW | Menu | AQCS

U2 BURNER OVRWS

Burner Fronts

Unit 2 948 MW | Menu | AQCS | Coal Yard | Common

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947.48 mw
390.11 tph

O2 West 2.37 O2 East 3.02

Windbox press 2.79	E6	E5	E4	E3	E2	E1	
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
56.2	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.51	0.55	0.56	0.59	0.44	0.54	0.33	Combustion index
Avg 689	711	697	657	726	667	678	Burner tip temp
Avg 519	526	522	509	502	522	533	Burner body temp
Avg 89	90	94	93	88	81	90	IBAMs flow KPPH
Total 535	81.5 West	SA damper Position			East	80.9	

1/3 OFA % dmpr 1
2/3 OFA % dmpr 47

Windbox press 2.59	A6	A5	A4	A3	A2	A1	
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
55.3	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.47	0.30	0.39	0.44	0.49	0.56	0.66	Combustion index
Avg 693	714	684	713	665	697	684	Burner tip temp
Avg 513	535	528	494	495	514	513	Burner body temp
Avg 95	91	85	96	91	110	97	IBAMs flow KPPH
Total 569	82.3 West	SA damper Position			East	81.2	

PSH Dmpr 94.0 RH Dmpr 35.3

Windbox press 0.67	F6	F5	F4	F3	F2	F1	
I/S, coal flow	4.00	3.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
0.0	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00	Combustion index
Avg 1286	1380	1290	1387	1240	1129	1289	Burner tip temp
Avg 835	828	786	854	891	841	812	Burner body temp
Avg 67	75	57	67	72	62	71	IBAMs flow KPPH
Total 405	30.1 West	SA damper Position			East	29.9	

Duct Press actual 54.7 target 52.8

Windbox press 2.21	B6	B5	B4	B3	B2	B1	
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
54.7	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.35	0.56	0.62	0.00	0.46	0.46	0.00	Combustion index
Avg 695	658	655	681	741	693	739	Burner tip temp
Avg 513	538	526	514	475	496	531	Burner body temp
Avg 83	119	2	96	97	87	104	IBAMs flow KPPH
Total 501	81.0 West	SA damper Position			East	80.9	

4748 Total SA flow
-0.35 Furnace Press

Drum Level -0.84 Avg
0.11 West -0.84 Middle -0.68 East

O2 West 2.37 O2 East 3.02

Windbox press 2.35	D6	D5	D4	D3	D2	D1	
I/S, coal flow	4.00	4.00	4.00	4.00	3.50	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
55.2	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.43 Avg	0.32	0.54	0.20	0.52	0.65	0.38	Combustion index
721 Avg	744	684	711	708	782	699	Burner tip temp
513 Avg	508	511	505	523	490	541	Burner body temp
87 Avg	99	84	86	91	62	81	IBAMs flow KPPH
520 Total	81.4 West	SA damper Position			East	81.8	

Windbox press 2.50	H6	H5	H4	H3	H2	H1	
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
56.6	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.35 Avg	0.63	0.40	0.22	0.42	0.19	0.20	Combustion index
708 Avg	690	794	682	722	682	680	Burner tip temp
520 Avg	516	534	530	513	512	515	Burner body temp
90 Avg	100	94	88	88	83	86	IBAMs flow KPPH
539 Total	82.0 West	SA damper Position			East	81.4	

Windbox press 2.67	C6	C5	C4	C3	C2	C1	
I/S, coal flow	3.50	4.00	4.00	3.50	4.00	4.00	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
54.9	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.44 Avg	0.72	0.32	0.40	0.39	0.40	0.49	Combustion index
719 Avg	736	719	675	785	695	704	Burner tip temp
509 Avg	491	510	497	532	521	502	Burner body temp
92 Avg	89	93	89	85	93	102	IBAMs flow KPPH
551 Total	82.0 West	SA damper Position			East	81.5	

Windbox press 2.41	G6	G5	G4	G3	G2	G1	
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
55.6	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.56 Avg	0.70	0.71	0.67	0.44	0.33	0.54	Combustion index
662 Avg	670	645	628	674	649	701	Burner tip temp
512 Avg	526	516	498	508	515	508	Burner body temp
89 Avg	89	77	95	91	83	100	IBAMs flow KPPH
535 Total	81.1 West	SA damper Position			East	81.7	

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	3.1	3.8	3.4	E A
13'	1.6	2.8	3.4	F B
18'	1.8	3.4	3.9	G C
Ave		3.02	% O2	H D

West % O2

6'	3.4	2.9	1.3	E A
13'	3.3	2.8	0.9	F B
18'	0.0	2.8	1.7	G C
Ave		2.37	% O2	H D

O2 Actual 2.72
O2 Target 2.97
NOx Actual 0.408
NOx Target 0.412

West		East
725	SA Air Temp	719
4.5	SA Duct Pr	4.0
745	Exit Gas Temp	767
2.37	Econ O2 %	3.02
0.11	Drum Level	-0.68
729	1st stg inlet t	729
141	1st stg sprays	52
706	1st stg outlet t	707
775	2nd stg inlet t	776
24	2nd stg sprays	29
769	2nd stg outlet t	770

67.0 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 951 MW | Menu | AQCS

U2 BURNER OVRWS

Burner Fronts

Unit 2 947 MW | Menu | AQCS | Coal Yard | Common

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IPSC

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[illegible] F rose to 30% , [illegible] off at same [illegible] adjusted
Spin Fu[illegible] 4" [illegible] 3.5" and C3 tip temp dropped back down.

IP7021626

W r C3 @ 3 on adjustable
@ 13'00 round to 2 1/2
C3 Sp'n 3.5 cir'ar d tmpr
H5 Sp'n 3.5

#'6 w 'n coo
air on 30%

Next

Previous

948.01 mw
415.90 tph

O2 West 2.74 | O2 East 2.92

Windbox press 2.64	E6	E5	E4	E3	E2	E1	
I/S, coal flow 59.3	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.50	0.44	0.57	0.52	0.40	0.59	0.45	Combustion index
Avg 685	723	689	664	733	660	640	Burner tip temp
Avg 523	531	526	513	506	524	539	Burner body temp
Avg 88	89	92	91	86	80	87	IBAMs flow KPPH
Total 526	86.9 West	SA damper Position			East	86.9	

1/3 OFA % dmpr 1
2/3 OFA % dmpr 56

Windbox press 2.34	A6	A5	A4	A3	A2	A1	
I/S, coal flow 59.8	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.44	0.29	0.40	0.47	0.42	0.44	0.62	Combustion index
Avg 700	703	682	724	690	702	697	Burner tip temp
Avg 518	536	533	500	500	519	519	Burner body temp
Avg 93	89	84	93	90	108	95	IBAMs flow KPPH
Total 558	85.8 West	SA damper Position			East	86.3	

PSH Dmpr 99.8 | RH Dmpr 30.2

Windbox press 0.43	F6	F5	F4	F3	F2	F1	
I/S, coal flow 0.0	4.00	3.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00	Combustion index
Avg 1281	1376	1290	1376	1237	1104	1303	Burner tip temp
Avg 839	833	790	854	895	843	821	Burner body temp
Avg 66	72	55	67	70	60	70	IBAMs flow KPPH
Total 393	30.1 West	SA damper Position			East	29.8	

Duct Press actual 54.0 | target 53.4

Windbox press 1.98	B6	B5	B4	B3	B2	B1	
I/S, coal flow 58.7	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.0	5.0	5.5	9.0	Outer register setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.37	0.57	0.63	0.00	0.49	0.50	0.00	Combustion index
Avg 685	655	654	678	689	695	740	Burner tip temp
Avg 518	541	531	519	477	501	540	Burner body temp
Avg 83	118	2	94	94	86	103	IBAMs flow KPPH
Total 497	85.7 West	SA damper Position			East	85.7	

4740 Total SA flow
-0.50 Furnace Press

Drum Level 0.13 Avg
0.80 West 0.24 Middle -2.14 East

O2 West 2.74 | O2 East 2.92

Windbox press 2.07	D6	D5	D4	D3	D2	D1	
I/S, coal flow 59.2	4.00	4.00	4.00	4.00	3.50	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.45 Avg	0.29	0.54	0.25	0.54	0.63	0.46	Combustion index
730 Avg	742	689	738	714	794	701	Burner tip temp
515 Avg	509	514	495	529	496	547	Burner body temp
78 Avg	95	82	85	89	47	71	IBAMs flow KPPH
470 Total	87.4 West	SA damper Position			East	86.8	

Windbox press 2.24	H6	H5	H4	H3	H2	H1	
I/S, coal flow 61.1	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.41 Avg	0.68	0.39	0.34	0.45	0.27	0.36	Combustion index
701 Avg	674	728	673	764	680	687	Burner tip temp
525 Avg	522	539	533	518	515	521	Burner body temp
89 Avg	98	95	87	87	82	85	IBAMs flow KPPH
532 Total	85.8 West	SA damper Position			East	85.8	

Windbox press 2.40	C6	C5	C4	C3	C2	C1	
I/S, coal flow 59.0	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.44 Avg	0.61	0.33	0.29	0.21	0.52	0.65	Combustion index
734 Avg	781	725	698	819	697	681	Burner tip temp
513 Avg	498	510	501	538	526	506	Burner body temp
93 Avg	99	91	87	89	91	99	IBAMs flow KPPH
557 Total	86.5 West	SA damper Position			East	86.0	

Windbox press 2.24	G6	G5	G4	G3	G2	G1	
I/S, coal flow 60.3	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.49 Avg	0.64	0.76	0.40	0.24	0.45	0.45	Combustion index
673 Avg	653	656	621	741	658	714	Burner tip temp
519 Avg	529	522	503	523	521	516	Burner body temp
87 Avg	87	75	93	88	82	98	IBAMs flow KPPH
525 Total	86.0 West	SA damper Position			East	86.1	

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	2.7	3.8	3.5	E A
13'	1.3	2.8	3.4	F B
18'	1.5	3.5	4.0	G C
Ave		2.92	% O2	H D

West % O2

6'	4.0	3.3	1.2	E A
13'	3.7	3.4	1.0	F B
18'	0.0	3.4	2.0	G C
Ave		2.74	% O2	H D

O2 Actual 2.85
O2 Target 2.98
NOx Actual 0.356
NOx Target 0.387

West		East
733	SA Air Temp	731
4.3	SA Duct Pr	3.9
752	Exit Gas Temp	778
2.74	Econ O2 %	2.92
0.80	Drum Level	-2.14
728	1st stg inlet t	730
118	1st stg sprays	55
706	1st stg outlet t	708
775	2nd stg inlet t	776
32	2nd stg sprays	42
768	2nd stg outlet t	767

78.5 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 951 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 948 MW | Menu | AQCS | Coal Yard | Common | 19-May-08 10:35:40 | IPSC

IP7021627

#16

after [illegible] ~ C1 & C6 8.0 to 7.0
C3 & C4 5.0 to 5.5

Next

O2 West 3.03 — O2 East 2.99

Windbox press 2.80	E6	E5	E4	E3	E2	E1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
55.9	8.0	5.5	5.0	5.0	5.5	8.0
	17.88	18.10	18.90	20.99	21.00	21.00
Avg 0.47	0.40	0.55	0.44	0.53	0.58	0.33
Avg 699	708	686	691	762	662	686
Avg 522	527	525	516	509	517	537
Avg 89	89	94	93	87	81	89
Total 534	81.2 West	SA damper Position			East	81.3

Windbox press 2.49	A6	A5	A4	A3	A2	A1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
55.6	8.0	5.5	5.0	5.0	5.5	8.0
	21.00	21.00	20.99	18.90	18.10	17.88
Avg 0.43	0.31	0.33	0.49	0.34	0.45	0.61
Avg 705	693	681	739	702	720	694
Avg 515	537	529	495	499	517	513
Avg 95	90	86	95	91	110	96
Total 569	81.0 West	SA damper Position			East	81.2

Windbox press 1.01	F6	F5	F4	F3	F2	F1
I/S, coal flow	4.00	3.00	4.00	4.00	4.00	4.00
0.0	8.0	5.5	5.0	5.0	5.5	8.0
	17.85	17.85	18.21	20.09	21.00	21.00
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avg 1292	1366	1338	1371	1241	1122	1313
Avg 839	829	807	846	891	845	819
Avg 72	79	61	73	77	64	77
Total 430	36.0 West	SA damper Position			East	35.5

Windbox press 2.14	B6	B5	B4	B3	B2	B1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
54.8	9.0	5.5	5.0	5.0	5.5	9.0
	21.00	21.00	20.19	18.70	18.15	17.75
Avg 0.34	0.55	0.63	0.00	0.44	0.45	0.00
Avg 689	668	670	669	743	696	690
Avg 516	538	530	520	479	497	530
Avg 85	119	2	95	96	92	103
Total 507	80.7 West	SA damper Position			East	81.3

Drum Level -0.56 Avg
-0.75 West -1.56 Middle 0.11 East

951.47 mw
387.76 tph

Spin Vane setting
Outer register setting
Adjustable restrictor setting
Combustion index
Burner tip temp
Burner body temp
IBAMs flow KPPH

1/3 OFA % dmpr 1
2/3 OFA % dmpr 49

PSH Dmpr 100.0 — RH Dmpr 30.0

Duct Press actual 52.3 — target 51.0

4800 Total SA flow

-0.42 Furnace Press

O2 West 3.03 — O2 East 2.99

Windbox press 2.27	D6	D5	D4	D3	D2	D1
I/S, coal flow	4.00	4.00	4.00	4.00	3.50	4.00
55.3	8.0	5.5	5.0	5.0	5.5	8.0
	21.00	21.00	19.69	18.09	17.57	17.42
0.53 Avg	0.27	0.61	0.30	0.50	0.73	0.73
708 Avg	734	682	715	706	733	679
515 Avg	513	507	511	523	492	546
85 Avg	98	85	86	90	63	86
510 Total	80.8 West	SA damper Position			East	80.2

Windbox press 2.45	H6	H5	H4	H3	H2	H1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
55.3	8.0	5.5	5.5	5.5	5.5	8.0
	17.42	17.57	18.09	19.69	21.00	21.00
0.40 Avg	0.91	0.27	0.32	0.43	0.25	0.26
718 Avg	695	731	691	749	707	734
524 Avg	526	533	536	515	517	519
91 Avg	99	97	88	87	83	87
543 Total	81.0 West	SA damper Position			East	81.0

Windbox press 2.60	C6	C5	C4	C3	C2	C1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
54.9	7.0	5.5	5.5	5.5	5.5	7.0
	21.00	21.00	20.41	19.24	18.76	17.31
0.45 Avg	0.53	0.44	0.56	0.17	0.47	0.47
723 Avg	710	714	691	829	696	700
512 Avg	497	513	501	535	523	505
94 Avg	101	93	87	90	93	102
567 Total	80.2 West	SA damper Position			East	80.4

Windbox press 2.43	G6	G5	G4	G3	G2	G1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
55.0	9.0	5.5	5.5	5.5	5.5	9.0
	17.00	17.97	18.35	20.75	21.00	21.00
0.56 Avg	0.60	0.72	0.70	0.14	0.48	0.74
665 Avg	687	631	625	724	647	679
516 Avg	532	519	497	519	517	510
89 Avg	90	76	95	89	83	100
534 Total	80.2 West	SA damper Position			East	81.2

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

Previous

U2 O2 Trends

East % O2

6'	2.2	3.2	3.8	E A
13'	1.5	2.7	3.8	F B
18'	2.0	3.5	4.2	G C
Ave			2.99 % O2	H D

West % O2

6'	3.7	3.8	2.5	E A
13'	3.6	3.5	1.7	F B
18'	0.0	3.1	2.1	G C
Ave			3.03 % O2	H D

O2 Actual 3.03
O2 Target 2.97
NOx Actual 0.412
NOx Target 0.317

West		East
729	SA Air Temp	722
4.5	SA Duct Pr	4.1
748	Exit Gas Temp	771
3.03	Econ O2 %	2.99
-0.75	Drum Level	0.11
729	1st stg inlet t	727
105	1st stg sprays	39
711	1st stg outlet t	711
779	2nd stg inlet t	780
56	2nd stg sprays	71
765	2nd stg outlet t	765

73.5 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 949 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 951 MW | Menu | AQCS | Coal Yard | Common | 16-May-08 13:35:11 | IPSC

IP7021628

#15
after [illegible]
B[illegible] to 50
no change

Next | Previous

950.15 mw
384.13 tph

O2 West 3.08 | O2 East 2.87

	E6	E5	E4	E3	E2	E1
Windbox press 2.70						
I/S, coal flow 55.2	4.00	4.00	4.00	4.00	4.00	4.00
Spin Vane setting	8.0	5.5	5.0	5.0	5.5	8.0
Outer register setting	17.88	18.10	18.90	20.99	21.00	21.00
Adjustable restrictor setting	0.46	0.56	0.46	0.47	0.54	0.34
Combustion index	707	683	687	760	663	682
Burner tip temp	526	524	515	506	516	535
Burner body temp	89	93	92	85	80	89
IBAMs flow KPPH	80.4 West	SA damper Position			East	80.1

Avg 0.47; Avg 697; Avg 520; Avg 88; Total 529

	A6	A5	A4	A3	A2	A1
Windbox press 2.38						
I/S, coal flow 55.2	4.00	4.00	4.00	4.00	4.00	4.00
Spin Vane setting	8.0	5.5	5.0	5.0	5.5	8.0
Outer register setting	21.00	21.00	20.99	18.90	18.10	17.88
Adjustable restrictor setting	0.35	0.29	0.47	0.37	0.45	0.67
Combustion index	693	681	739	703	721	687
Burner tip temp	536	527	492	498	515	512
Burner body temp	89	84	94	91	110	94
IBAMs flow KPPH	79.9 West	SA damper Position			East	81.2

Avg 0.43; Avg 704; Avg 513; Avg 94; Total 564

	F6	F5	F4	F3	F2	F1
Windbox press 0.82						
I/S, coal flow 0.0	4.00	3.00	4.00	4.00	4.00	4.00
Spin Vane setting	8.0	5.5	5.0	5.0	5.5	8.0
Outer register setting	17.85	17.85	18.21	20.09	21.00	21.00
Adjustable restrictor setting	0.00	0.00	0.00	0.00	0.00	0.00
Combustion index	1365	1338	1373	1239	1113	1302
Burner tip temp	827	804	845	890	843	817
Burner body temp	79	60	72	77	63	76
IBAMs flow KPPH	36.0 West	SA damper Position			East	35.5

Avg 0.00; Avg 1288; Avg 838; Avg 71; Total 426

	B6	B5	B4	B3	B2	B1
Windbox press 2.01						
I/S, coal flow 54.0	4.00	4.00	4.00	4.00	4.00	4.00
Spin Vane setting	9.0	5.5	5.0	5.0	5.5	9.0
Outer register setting	21.00	21.00	20.19	18.70	18.15	17.75
Adjustable restrictor setting	0.44	0.58	0.00	0.40	0.42	0.00
Combustion index	666	668	668	740	693	694
Burner tip temp	537	528	518	479	495	529
Burner body temp	118	2	94	96	91	103
IBAMs flow KPPH	80.4 West	SA damper Position			East	81.4

Avg 0.30; Avg 688; Avg 514; Avg 84; Total 503

Drum Level -0.87 Avg
-1.01 West -1.75 Middle -0.60 East

1/3 OFA % dmpr 1
2/3 OFA % dmpr 49

PSH Dmpr 99.8 | RH Dmpr 30.2

Duct Press actual 51.9 | target 51.3

4746 Total SA flow
-0.44 Furnace Press

O2 West 3.08 | O2 East 2.87

	D6	D5	D4	D3	D2	D1
Windbox press 2.14						
I/S, coal flow 54.5	4.00	4.00	4.00	4.00	3.50	4.00
Spin Vane setting	8.0	5.5	5.0	5.0	5.5	8.0
Outer register setting	21.00	21.00	19.69	18.09	17.57	17.42
Adjustable restrictor setting	0.25	0.64	0.27	0.52	0.72	0.72
Combustion index	732	682	712	705	734	678
Burner tip temp	513	506	512	522	491	545
Burner body temp	96	84	85	89	56	78
IBAMs flow KPPH	80.8 West	SA damper Position			East	79.5

0.52 Avg; 707 Avg; 515 Avg; 83 Avg; 500 Total

	H6	H5	H4	H3	H2	H1
Windbox press 2.32						
I/S, coal flow 55.0	4.00	4.00	4.00	4.00	4.00	4.00
Spin Vane setting	8.0	5.5	5.5	5.5	5.5	8.0
Outer register setting	17.42	17.57	18.09	19.69	21.00	21.00
Adjustable restrictor setting	0.89	0.29	0.34	0.45	0.26	0.32
Combustion index	691	736	689	747	709	736
Burner tip temp	525	533	533	514	517	518
Burner body temp	99	97	88	87	83	86
IBAMs flow KPPH	80.7 West	SA damper Position			East	79.9

0.42 Avg; 718 Avg; 523 Avg; 90 Avg; 538 Total

	C6	C5	C4	C3	C2	C1
Windbox press 2.43						
I/S, coal flow 55.1	4.00	4.00	4.00	4.00	4.00	4.00
Spin Vane setting	8.0	5.5	5.0	5.0	5.5	8.0
Outer register setting	21.00	21.00	20.41	19.24	18.76	17.31
Adjustable restrictor setting	0.57	0.46	0.58	0.16	0.50	0.44
Combustion index	710	727	692	812	695	700
Burner tip temp	497	509	498	533	521	502
Burner body temp	102	92	85	88	93	101
IBAMs flow KPPH	79.9 West	SA damper Position			East	79.9

0.44 Avg; 722 Avg; 510 Avg; 93 Avg; 560 Total

	G6	G5	G4	G3	G2	G1
Windbox press 2.20						
I/S, coal flow 55.0	4.00	4.00	4.00	4.00	4.00	4.00
Spin Vane setting	9.0	5.5	5.5	5.5	5.5	9.0
Outer register setting	17.00	17.97	18.35	20.75	21.00	21.00
Adjustable restrictor setting	0.63	0.72	0.65	0.13	0.48	0.69
Combustion index	687	630	625	729	645	684
Burner tip temp	530	517	497	518	515	509
Burner body temp	89	76	95	89	83	100
IBAMs flow KPPH	81.1 West	SA damper Position			East	79.9

0.55 Avg; 667 Avg; 514 Avg; 89 Avg; 531 Total

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	2.1	3.2	3.9	E
13'	0.9	2.8	3.5	A F B
18'	1.8	3.5	3.9	G C
Ave		2.87	% O2	H D

West % O2

6'	3.7	4.0	2.5	E
13'	3.3	4.2	1.7	A F B
18'	0.0	3.2	1.9	G C
Ave		3.08	% O2	H D

O2 Actual 2.95
O2 Target 2.97
NOx Actual 0.403
NOx Target 0.349

West		East
727	SA Air Temp	720
4.4	SA Duct Pr	4.2
746	Exit Gas Temp	769
3.08	Econ O2 %	2.87
-1.01	Drum Level	-0.60
728	1st stg inlet t	725
91	1st stg sprays	38
711	1st stg outlet t	710
779	2nd stg inlet t	781
49	2nd stg sprays	74
764	2nd stg outlet t	765

72.3 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 950 MW Menu AQCS

U2 BURNER OVRWS

Burner Fronts

Unit 2 950 MW Menu AQCS | Coal Yard | Common

16-May-08 12:42:38
IPSC

IP7021629

#14
after moving 34 &
C4 5.5 to 5.0
no change

Next | Previous

950.80 mw
385.27 tph

O2 West 3.04 | O2 East 2.93

Windbox press 2.70	E6	E5	E4	E3	E2	E1	
I/S, coal flow 55.2	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.48	0.41	0.55	0.49	0.48	0.55	0.35	Combustion index
Avg 698	706	684	691	764	663	680	Burner tip temp
Avg 519	525	523	513	506	515	535	Burner body temp
Avg 89	89	94	93	87	80	89	IBAMs flow KPPH
Total 533	80.4 West	SA damper Position			East	81.2	

1/3 OFA % dmpr 1
2/3 OFA % dmpr 49

Windbox press 2.36	A6	A5	A4	A3	A2	A1	
I/S, coal flow 55.6	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.42	0.33	0.30	0.49	0.37	0.51	0.61	Combustion index
Avg 703	691	679	738	702	720	690	Burner tip temp
Avg 512	535	526	492	497	514	510	Burner body temp
Avg 94	89	85	94	91	110	96	IBAMs flow KPPH
Total 567	80.5 West	SA damper Position			East	80.2	

PSH Dmpr 96.3 | RH Dmpr 33.2

Windbox press 0.86	F6	F5	F4	F3	F2	F1	
I/S, coal flow 0.0	4.00	3.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00	Combustion index
Avg 1288	1359	1332	1370	1240	1121	1305	Burner tip temp
Avg 836	825	803	843	889	843	816	Burner body temp
Avg 71	79	60	72	77	64	76	IBAMs flow KPPH
Total 428	36.2 West	SA damper Position			East	35.5	

Duct Press actual 52.1 | target 51.4

Windbox press 2.05	B6	B5	B4	B3	B2	B1	
I/S, coal flow 53.7	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.0	5.5	5.5	9.0	Outer register setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.35	0.51	0.56	0.00	0.37	0.46	0.00	Combustion index
Avg 686	663	666	667	751	691	686	Burner tip temp
Avg 513	535	527	518	482	494	526	Burner body temp
Avg 84	118	2	94	98	91	103	IBAMs flow KPPH
Total 506	80.4 West	SA damper Position			East	81.1	

4773 Total SA flow
-0.55 Furnace Press

Drum Level -1.19 Avg
-0.75 West -1.83 Middle -0.93 East

O2 West 3.04 | O2 East 2.93

Windbox press 2.14	D6	D5	D4	D3	D2	D1	
I/S, coal flow 54.8	4.00	4.00	4.00	4.00	3.50	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.54 Avg	0.27	0.65	0.25	0.54	0.74	0.74	Combustion index
707 Avg	733	683	710	703	733	676	Burner tip temp
513 Avg	511	505	510	521	490	543	Burner body temp
84 Avg	97	85	85	90	60	80	IBAMs flow KPPH
501 Total	80.8 West	SA damper Position			East	79.6	

Windbox press 2.33	H6	H5	H4	H3	H2	H1	
I/S, coal flow 55.5	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.42 Avg	0.94	0.32	0.34	0.46	0.29	0.31	Combustion index
719 Avg	694	741	688	745	710	736	Burner tip temp
523 Avg	525	532	534	513	516	517	Burner body temp
90 Avg	99	97	88	87	83	87	IBAMs flow KPPH
541 Total	80.7 West	SA damper Position			East	79.9	

Windbox press 2.49	C6	C5	C4	C3	C2	C1	
I/S, coal flow 55.7	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.5	5.5	8.0	Outer register setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.45 Avg	0.57	0.46	0.54	0.17	0.48	0.47	Combustion index
719 Avg	709	719	688	805	693	699	Burner tip temp
509 Avg	496	508	497	531	520	501	Burner body temp
94 Avg	102	93	86	90	93	102	IBAMs flow KPPH
564 Total	80.0 West	SA damper Position			East	80.9	

Windbox press 2.26	G6	G5	G4	G3	G2	G1	
I/S, coal flow 55.3	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.56 Avg	0.60	0.72	0.69	0.13	0.49	0.72	Combustion index
666 Avg	690	628	625	731	645	682	Burner tip temp
513 Avg	530	516	496	516	514	507	Burner body temp
89 Avg	89	76	96	89	83	100	IBAMs flow KPPH
535 Total	81.3 West	SA damper Position			East	81.0	

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2	E	A	F	B	G	C	H	D
6'	2.0		3.4		3.8			
13'	0.9		3.0		3.8			
18'	1.6		3.5		4.1			
Ave			2.93		% O2			

West % O2	E	A	F	B	G	C	H	D
6'	3.6		3.6		2.1			
13'	3.5		3.9		1.8			
18'	0.0		3.7		2.0			
Ave			3.04		% O2			

O2 Actual	2.99
O2 Target	2.97
NOx Actual	0.406
NOx Target	0.392

West		East
726	SA Air Temp	718
4.4	SA Duct Pr	3.9
746	Exit Gas Temp	769
3.04	Econ O2 %	2.93
-0.75	Drum Level	-0.93
727	1st stg inlet t	724
99	1st stg sprays	35
711	1st stg outlet t	711
780	2nd stg inlet t	781
58	2nd stg sprays	78
763	2nd stg outlet t	764

71.3 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 946 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 951 MW | Menu | AQCS | Coal Yard | Common | 16-May-08 12:13:10 | IPSC

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Next | Previous

951.47 mw
382.73 tph

O2 West 2.45 | O2 East 2.94

Windbox press 2.71	E6	E5	E4	E3	E2	E1	
I/S, coal flow 54.8	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.47	0.51	0.57	0.46	0.51	0.54	0.36	Combustion index
Avg 693	695	681	692	763	661	664	Burner tip temp
Avg 517	523	521	511	504	513	531	Burner body temp
Avg 88	89	93	92	86	80	88	IBAMs flow KPPH
Total 528	80.3 West	SA damper Position			East	80.0	

1/3 OFA % dmpr 1
2/3 OFA % dmpr 49

Windbox press 2.40	A6	A5	A4	A3	A2	A1	
I/S, coal flow 55.2	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.43	0.32	0.30	0.46	0.36	0.42	0.62	Combustion index
Avg 701	690	679	737	700	719	683	Burner tip temp
Avg 509	533	522	489	493	511	507	Burner body temp
Avg 94	89	84	93	91	109	96	IBAMs flow KPPH
Total 562	80.0 West	SA damper Position			East	80.2	

PSH Dmpr 76.1 | RH Dmpr 50.8

Windbox press 0.80	F6	F5	F4	F3	F2	F1	
I/S, coal flow 0.0	4.00	3.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.00	0.00	0.00	0.02	0.00	0.00	0.00	Combustion index
Avg 1284	1354	1328	1364	1235	1120	1304	Burner tip temp
Avg 832	822	801	838	882	840	813	Burner body temp
Avg 71	78	59	72	77	63	76	IBAMs flow KPPH
Total 425	36.0 West	SA damper Position			East	35.5	

Duct Press actual 52.2 | target 50.8

Windbox press 1.96	B6	B5	B4	B3	B2	B1	
I/S, coal flow 54.2	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.34	0.49	0.62	0.00	0.47	0.51	0.00	Combustion index
Avg 692	661	664	665	762	693	709	Burner tip temp
Avg 511	533	525	517	478	491	524	Burner body temp
Avg 84	117	2	93	97	91	102	IBAMs flow KPPH
Total 502	81.1 West	SA damper Position			East	80.3	

4736 Total SA flow
-0.31 Furnace Press

Drum Level -1.25 Avg
-1.25 West -1.81 Middle -0.57 East

O2 West 2.45 | O2 East 2.94

Windbox press 2.13	D6	D5	D4	D3	D2	D1	
I/S, coal flow 55.0	4.00	4.00	4.00	4.00	3.50	4.00	Spin Vane setting
	8.0	5.5	5.0	5.0	5.5	8.0	Outer register setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.55 Avg	0.33	0.64	0.32	0.52	0.73	0.70	Combustion index
709 Avg	732	701	710	701	739	672	Burner tip temp
511 Avg	509	507	508	518	488	540	Burner body temp
82 Avg	96	83	84	89	66	85	IBAMs flow KPPH
495 Total	80.8 West	SA damper Position			East	79.6	

Windbox press 2.34	H6	H5	H4	H3	H2	H1	
I/S, coal flow 54.4	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.42 Avg	0.88	0.31	0.29	0.48	0.30	0.28	Combustion index
716 Avg	670	749	686	744	711	737	Burner tip temp
520 Avg	520	530	533	510	512	513	Burner body temp
89 Avg	98	96	87	85	83	86	IBAMs flow KPPH
536 Total	79.5 West	SA damper Position			East	80.3	

Windbox press 2.39	C6	C5	C4	C3	C2	C1	
I/S, coal flow 55.4	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.44 Avg	0.50	0.40	0.59	0.19	0.49	0.49	Combustion index
711 Avg	710	712	681	780	690	695	Burner tip temp
506 Avg	494	505	496	529	516	498	Burner body temp
94 Avg	101	92	86	89	92	101	IBAMs flow KPPH
562 Total	79.5 West	SA damper Position			East	80.2	

Windbox press 2.20	G6	G5	G4	G3	G2	G1	
I/S, coal flow 54.5	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.54 Avg	0.60	0.70	0.66	0.13	0.50	0.71	Combustion index
662 Avg	688	628	622	714	641	681	Burner tip temp
510 Avg	528	514	494	509	512	504	Burner body temp
88 Avg	89	75	95	89	83	99	IBAMs flow KPPH
531 Total	79.6 West	SA damper Position			East	79.4	

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2				
6'	1.7	3.0	3.4	E A
13'	1.9	3.4	3.5	F B
18'	1.8	4.0	3.7	G C
		2.94	% O2	H D

Ave West % O2				
6'	3.4	2.8	1.6	E A
13'	3.3	3.0	1.2	F B
18'	0.0	3.4	0.9	G C
Ave		2.45	% O2	H D

O2 Actual 2.69
O2 Target 2.97
NOx Actual 0.404
NOx Target 0.392

West		East
722	SA Air Temp	713
4.4	SA Duct Pr	3.9
745	Exit Gas Temp	769
2.45	Econ O2 %	2.94
-1.25	Drum Level	-0.57
721	1st stg inlet t	717
74	1st stg sprays	20
710	1st stg outlet t	711
780	2nd stg inlet t	780
66	2nd stg sprays	83
765	2nd stg outlet t	762

67.1 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 952 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 951 MW | Menu | AQCS | Coal Yard | Common | 16-May-08 10:52:39 | IPSC

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Next

Previous

O2 West 2.70 | O2 East 3.10

Windbox press 2.61	E6	E5	E4	E3	E2	E1
I/S, coal flow 55.3	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	4.5	4.5	5.5	8.0
	17.88	18.10	18.90	20.99	21.00	21.00
Avg 0.46	0.52	0.57	0.37	0.47	0.53	0.32
Avg 693	695	679	697	770	660	659
Avg 516	522	518	509	504	513	529
Avg 88	90	93	91	84	81	88
Total 527	80.3 West	SA damper Position			East	80.8

Windbox press 2.29	A6	A5	A4	A3	A2	A1
I/S, coal flow 56.4	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	4.5	4.5	5.5	8.0
	21.00	21.00	20.99	18.90	18.10	17.88
Avg 0.41	0.31	0.31	0.44	0.37	0.48	0.62
Avg 700	689	679	738	702	716	675
Avg 509	533	521	493	491	510	507
Avg 94	89	85	92	89	110	96
Total 562	80.2 West	SA damper Position			East	80.2

Windbox press 0.76	F6	F5	F4	F3	F2	F1
I/S, coal flow 0.0	4.00	3.00	4.00	4.00	4.00	4.00
	8.0	5.5	4.5	4.5	5.5	8.0
	17.85	17.85	18.21	20.09	21.00	21.00
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avg 1282	1355	1328	1362	1228	1117	1304
Avg 831	820	799	836	879	839	812
Avg 71	79	60	71	78	64	77
Total 429	36.0 West	SA damper Position			East	35.5

Windbox press 2.00	B6	B5	B4	B3	B2	B1
I/S, coal flow 54.9	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	5.5	4.5	4.5	5.5	9.0
	21.00	21.00	20.19	18.70	18.15	17.75
Avg 0.32	0.50	0.63	0.00	0.39	0.45	0.00
Avg 687	662	664	664	733	693	702
Avg 510	533	525	514	473	490	524
Avg 84	118	2	94	95	91	103
Total 504	81.1 West	SA damper Position			East	80.3

Drum Level -1.08 Avg
-1.08 West -1.81 Middle 0.97 East

949.75 mw
384.49 tph

Spin Vane setting	
Outer register setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
1/3 OFA % dmpr	1
2/3 OFA % dmpr	49
PSH Dmpr	RH Dmpr
69.5	57.1
Duct Press actual	target
51.6	51.0
Total SA flow	4767
Furnace Press	-0.50

O2 West 2.70 | O2 East 3.10

Windbox press 2.04	D6	D5	D4	D3	D2	D1
I/S, coal flow 54.6	4.00	4.00	4.00	4.00	3.50	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	21.00	21.00	19.69	18.09	17.57	17.42
0.53 Avg	0.30	0.62	0.25	0.52	0.75	0.72
708 Avg	729	699	711	700	737	671
511 Avg	510	508	505	518	487	539
82 Avg	97	84	86	90	57	78
494 Total	80.7 West	SA damper Position			East	79.6

Windbox press 2.20	H6	H5	H4	H3	H2	H1
I/S, coal flow 55.3	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	8.0
	17.42	17.57	18.09	19.69	21.00	21.00
0.41 Avg	0.88	0.36	0.29	0.46	0.27	0.28
711 Avg	669	754	679	741	687	734
518 Avg	519	530	529	510	508	513
90 Avg	99	97	88	85	84	87
541 Total	80.4 West	SA damper Position			East	79.3

Windbox press 2.39	C6	C5	C4	C3	C2	C1
I/S, coal flow 54.6	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	8.0
	21.00	21.00	20.41	19.24	18.76	17.31
0.44 Avg	0.53	0.44	0.57	0.20	0.48	0.48
710 Avg	708	709	682	781	687	693
506 Avg	493	505	496	529	515	497
94 Avg	102	93	86	89	93	102
564 Total	80.8 West	SA damper Position			East	80.3

Windbox press 2.17	G6	G5	G4	G3	G2	G1
I/S, coal flow 55.0	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	5.5	5.5	5.5	5.5	9.0
	17.00	17.97	18.35	20.75	21.00	21.00
0.55 Avg	0.62	0.73	0.70	0.13	0.48	0.70
660 Avg	682	626	621	713	638	680
509 Avg	527	513	494	508	512	503
89 Avg	90	76	96	90	83	100
535 Total	80.1 West	SA damper Position			East	80.3

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2				
6'	1.6	3.0	4.0	E
13'	1.4	3.4	4.2	A F B
18'	1.3	4.3	4.4	G C
Ave		3.10	% O2	H D

West % O2				
6'	3.6	3.1	1.7	E
13'	3.4	3.5	1.6	A F B
18'	0.0	3.8	1.3	G C
Ave		2.70	% O2	H D

O2 Actual	2.91
O2 Target	2.97
NOx Actual	0.392
NOx Target	0.391

West		East
721	SA Air Temp	711
4.4	SA Duct Pr	3.9
745	Exit Gas Temp	771
2.70	Econ O2 %	3.10
-1.08	Drum Level	0.97
721	1st stg inlet t	714
76	1st stg sprays	12
709	1st stg outlet t	714
778	2nd stg inlet t	781
70	2nd stg sprays	101
760	2nd stg outlet t	760

65.2 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 949 MW | Menu | AQCS

U2 BURNER OVRWS

Burner Fronts

Unit 2 950 MW | Menu | AQCS | Coal Yard | Common

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IPSC

IP7021632

Change [illegible]

Field after change to G, C, H + D to [illegible] Stand [illegible] temps burn

Next

Previous

O2 West 2.80 | O2 East 2.90

Windbox press 2.60	E6	E5	E4	E3	E2	E1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
54.5	8.0	5.5	4.5	4.5	5.5	8.0
	17.88	18.10	18.90	20.99	21.00	21.00
Avg 0.47	0.50	0.57	0.42	0.45	0.53	0.32
Avg 694	692	679	700	764	663	663
Avg 515	521	517	508	502	512	528
Avg 88	90	93	90	85	81	89
Total 529	79.3 West	SA damper Position			East	80.9

Windbox press 2.29	A6	A5	A4	A3	A2	A1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
54.9	8.0	5.5	4.5	4.5	5.5	8.0
	21.00	21.00	20.99	18.90	18.10	17.88
Avg 0.42	0.37	0.33	0.43	0.33	0.44	0.61
Avg 699	687	677	739	701	714	675
Avg 508	533	521	492	489	508	505
Avg 94	90	85	92	89	111	96
Total 563	80.9 West	SA damper Position			East	79.8

Windbox press 0.70	F6	F5	F4	F3	F2	F1
I/S, coal flow	4.00	3.00	4.00	4.00	4.00	4.00
0.0	8.0	5.5	4.5	4.5	5.5	8.0
	17.85	17.85	18.21	20.09	21.00	21.00
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avg 1278	1352	1325	1358	1224	1112	1299
Avg 828	818	798	834	877	835	809
Avg 72	79	61	72	77	63	77
Total 430	36.0 West	SA damper Position			East	35.5

Windbox press 1.91	B6	B5	B4	B3	B2	B1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
54.3	9.0	5.5	4.5	4.5	5.5	9.0
	21.00	21.00	20.19	18.70	18.15	17.75
Avg 0.34	0.58	0.62	0.00	0.40	0.41	0.00
Avg 682	658	663	662	708	691	713
Avg 508	532	523	513	471	489	521
Avg 84	118	2	94	95	92	104
Total 505	79.6 West	SA damper Position			East	80.1

Drum Level -0.85 Avg
-0.85 West -1.69 Middle -0.42 East

950.92 mw
381.58 tph

Spin Vane setting	
Outer register setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
1/3 OFA % dmpr	1
2/3 OFA % dmpr	49
PSH Dmpr	RH Dmpr
55.5	73.6
Duct Press actual	target
52.1	50.9
4761	Total SA flow
-0.57	Furnace Press

O2 West 2.80 | O2 East 2.90

Windbox press 2.02	D6	D5	D4	D3	D2	D1
I/S, coal flow	4.00	4.00	4.00	4.00	3.50	4.00
55.0	8.0	5.5	5.0	5.0	5.5	8.0
	21.00	21.00	19.69	18.09	17.57	17.42
0.55 Avg	0.34	0.64	0.31	0.53	0.71	0.73
706 Avg	728	696	710	697	738	669
509 Avg	509	505	504	516	485	536
83 Avg	97	84	85	90	55	76
499 Total	80.6 West	SA damper Position			East	80.0

Windbox press 2.20	H6	H5	H4	H3	H2	H1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
54.4	8.0	5.5	5.5	5.5	5.5	8.0
	17.42	17.57	18.09	19.69	21.00	21.00
0.41 Avg	0.91	0.29	0.31	0.45	0.22	0.30
710 Avg	672	769	658	742	693	729
517 Avg	518	529	528	508	507	511
90 Avg	99	97	88	87	84	87
541 Total	80.0 West	SA damper Position			East	80.2

Windbox press 2.30	C6	C5	C4	C3	C2	C1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
54.4	8.0	5.5	5.5	5.5	5.5	8.0
	21.00	21.00	20.41	19.24	18.76	17.31
0.44 Avg	0.56	0.42	0.61	0.17	0.46	0.47
695 Avg	707	704	681	719	673	689
504 Avg	492	503	495	525	514	497
95 Avg	102	93	86	89	93	102
567 Total	80.1 West	SA damper Position			East	80.4

Windbox press 2.08	G6	G5	G4	G3	G2	G1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
54.6	9.0	5.5	5.5	5.5	5.5	9.0
	17.00	17.97	18.35	20.75	21.00	21.00
0.55 Avg	0.60	0.73	0.69	0.12	0.46	0.70
660 Avg	674	626	620	727	636	677
507 Avg	526	512	493	506	509	501
89 Avg	90	76	96	90	83	100
535 Total	80.1 West	SA damper Position			East	80.0

Inner air set w/pin thru 5th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2

6'	1.3	2.8	3.9	E
13'	1.5	3.0	4.2	A F B
18'	1.3	3.6	4.4	G C
Ave		2.90	% O2	H D

West % O2

6'	3.6	2.7	1.9	E
13'	3.0	4.1	1.8	A F B
18'	0.0	3.9	1.2	G C
Ave		2.80	% O2	H D

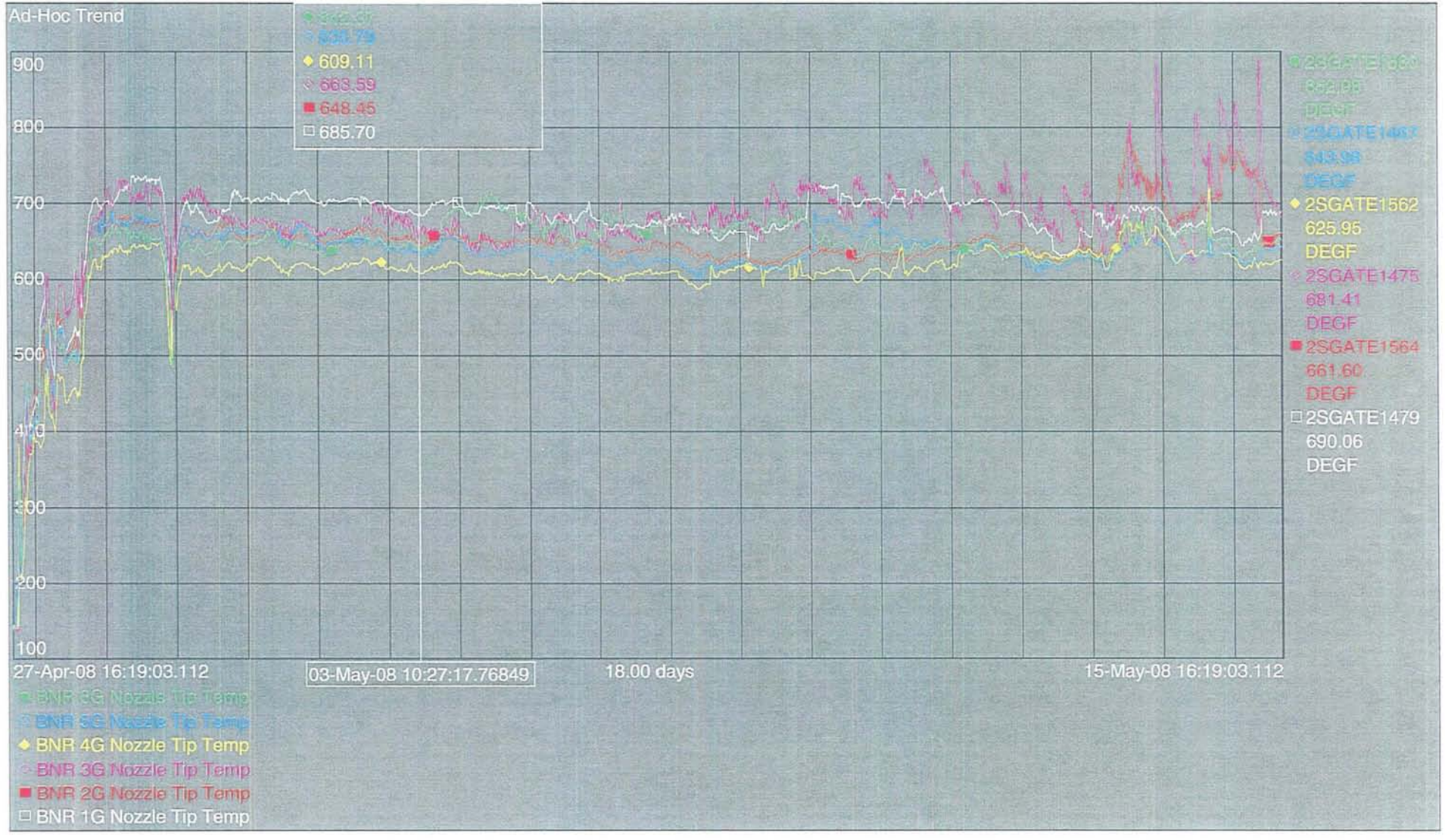
O2 Actual	2.84
O2 Target	2.96
NOx Actual	0.393
NOx Target	0.389

West		East
720	SA Air Temp	708
4.3	SA Duct Pr	3.9
745	Exit Gas Temp	768
2.80	Econ O2 %	2.90
-0.85	Drum Level	-0.42
720	1st stg inlet t	713
68	1st stg sprays	12
709	1st stg outlet t	711
777	2nd stg inlet t	780
88	2nd stg sprays	119
755	2nd stg outlet t	754

59.9 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 950 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 951 MW | Menu | AQCS | Coal Yard | Common | 16-May-08 09:11:09 | IPSC

IP7021633

G row



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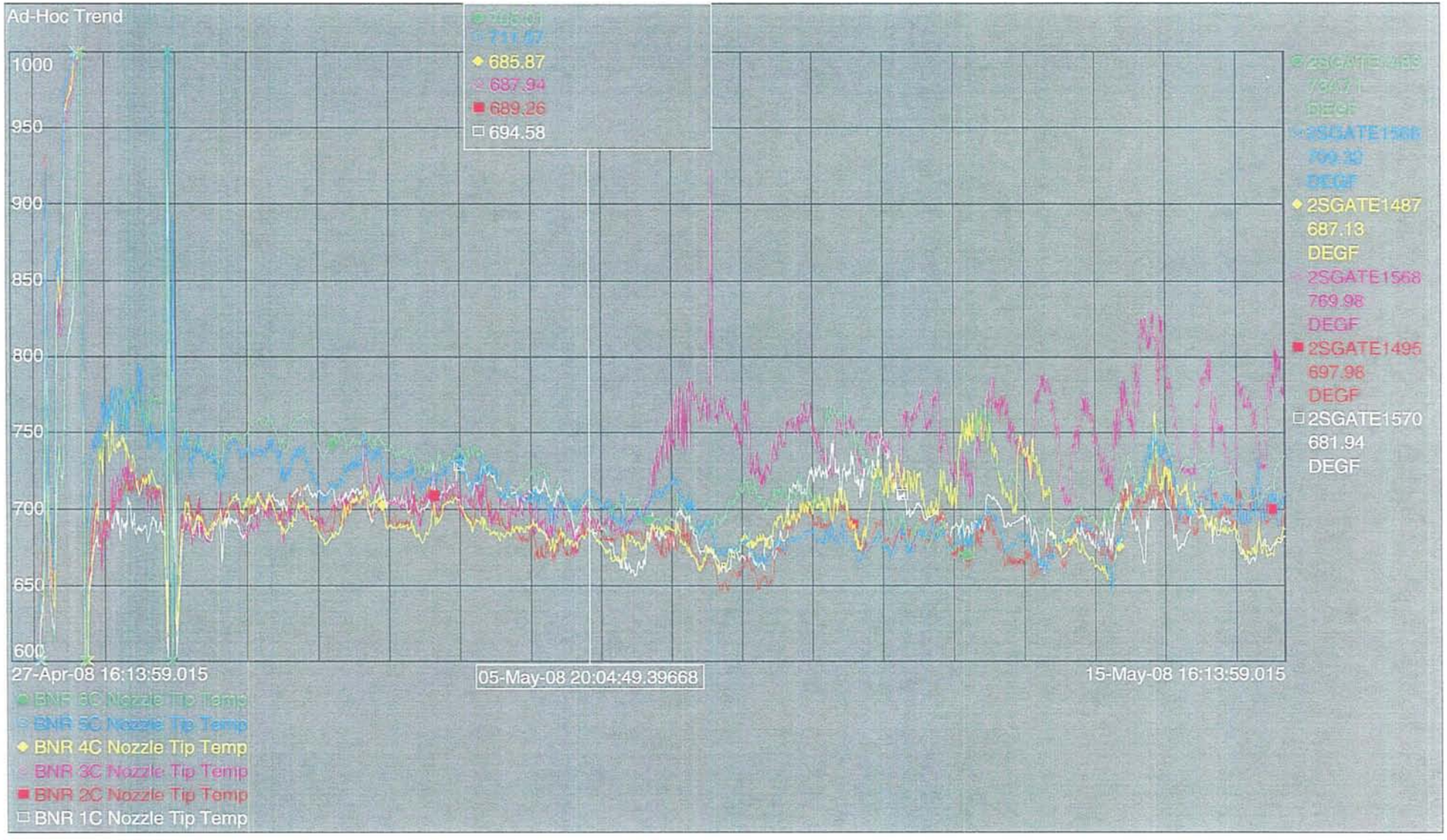

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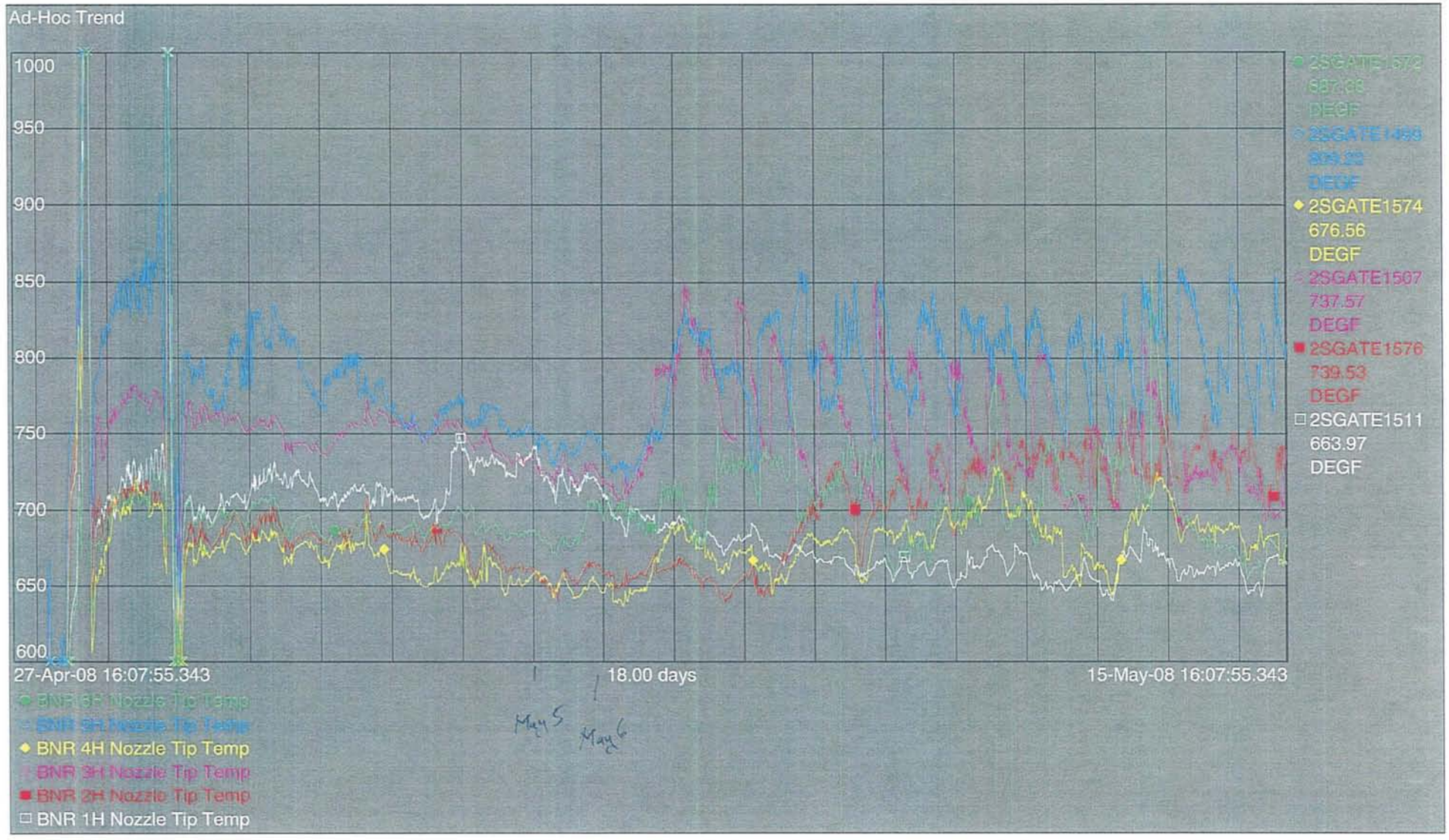

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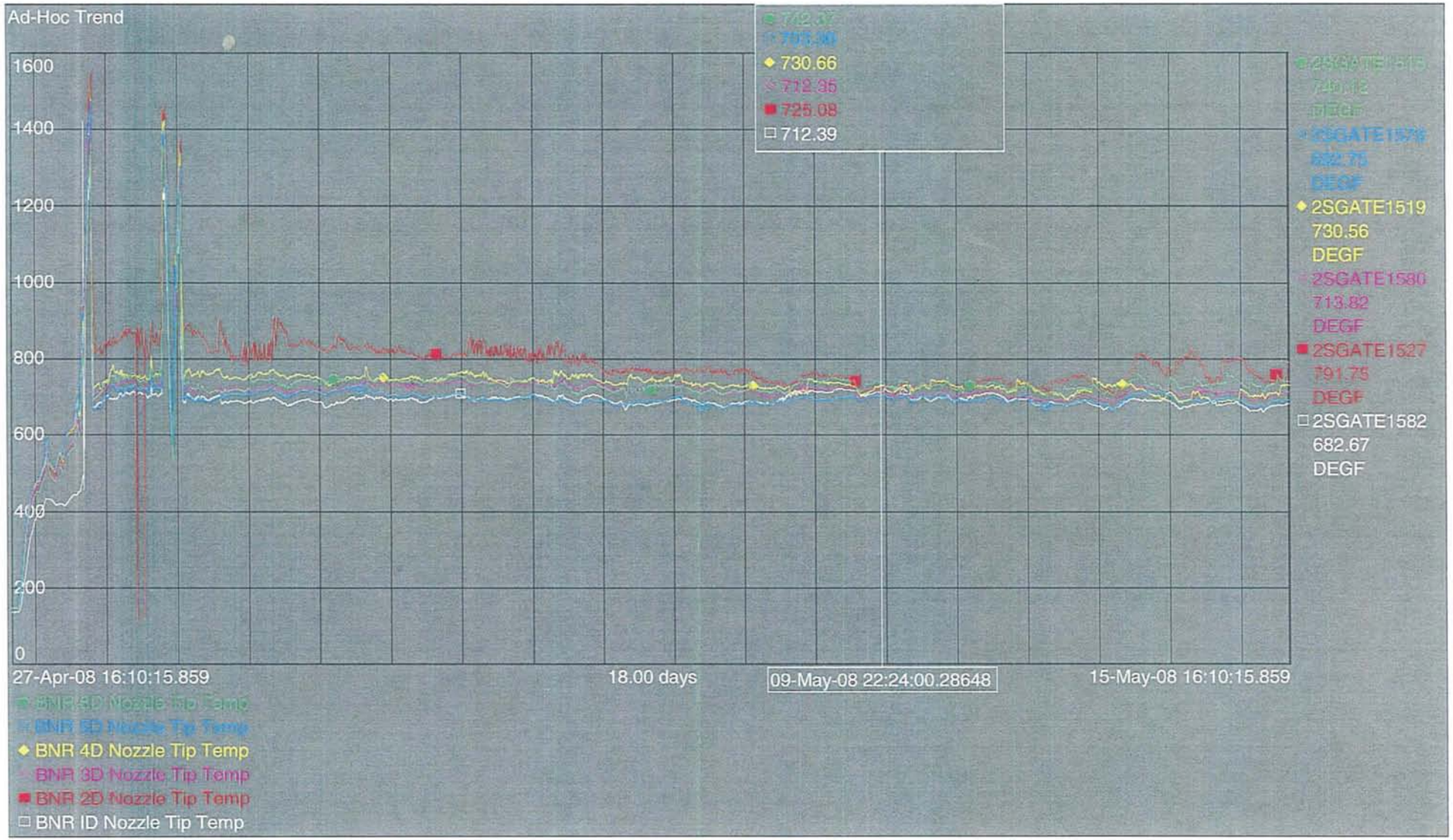

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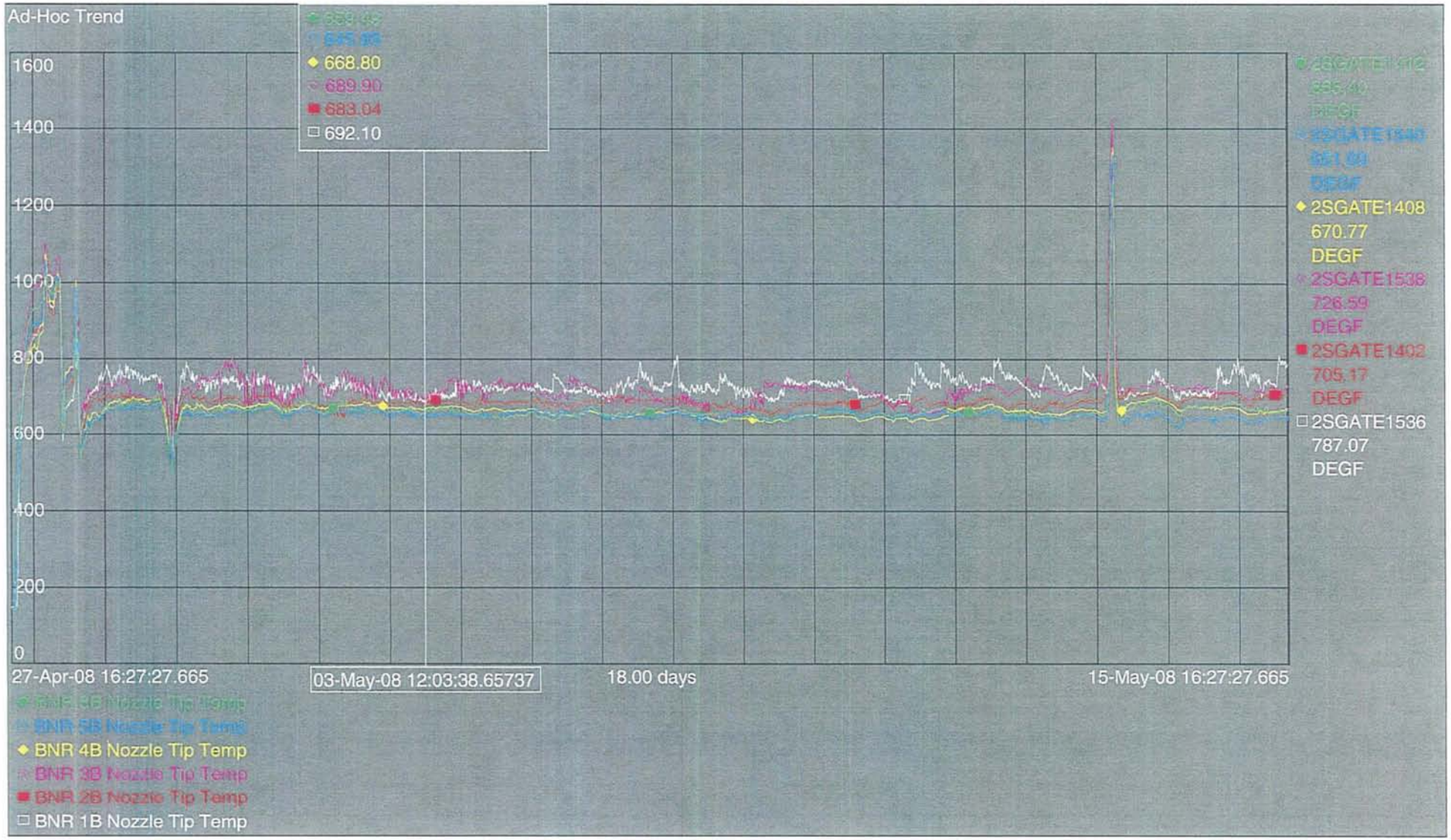

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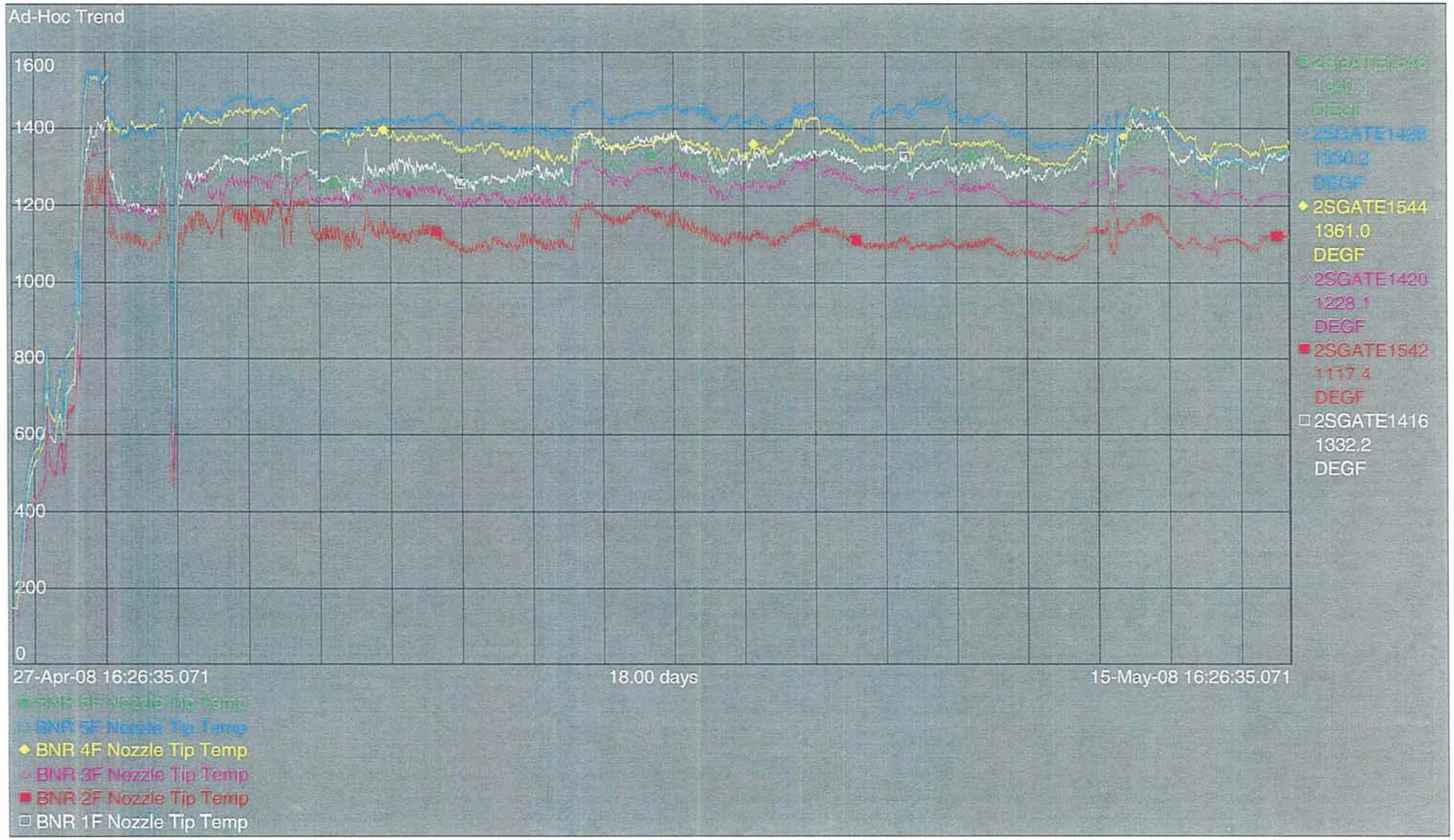
F row



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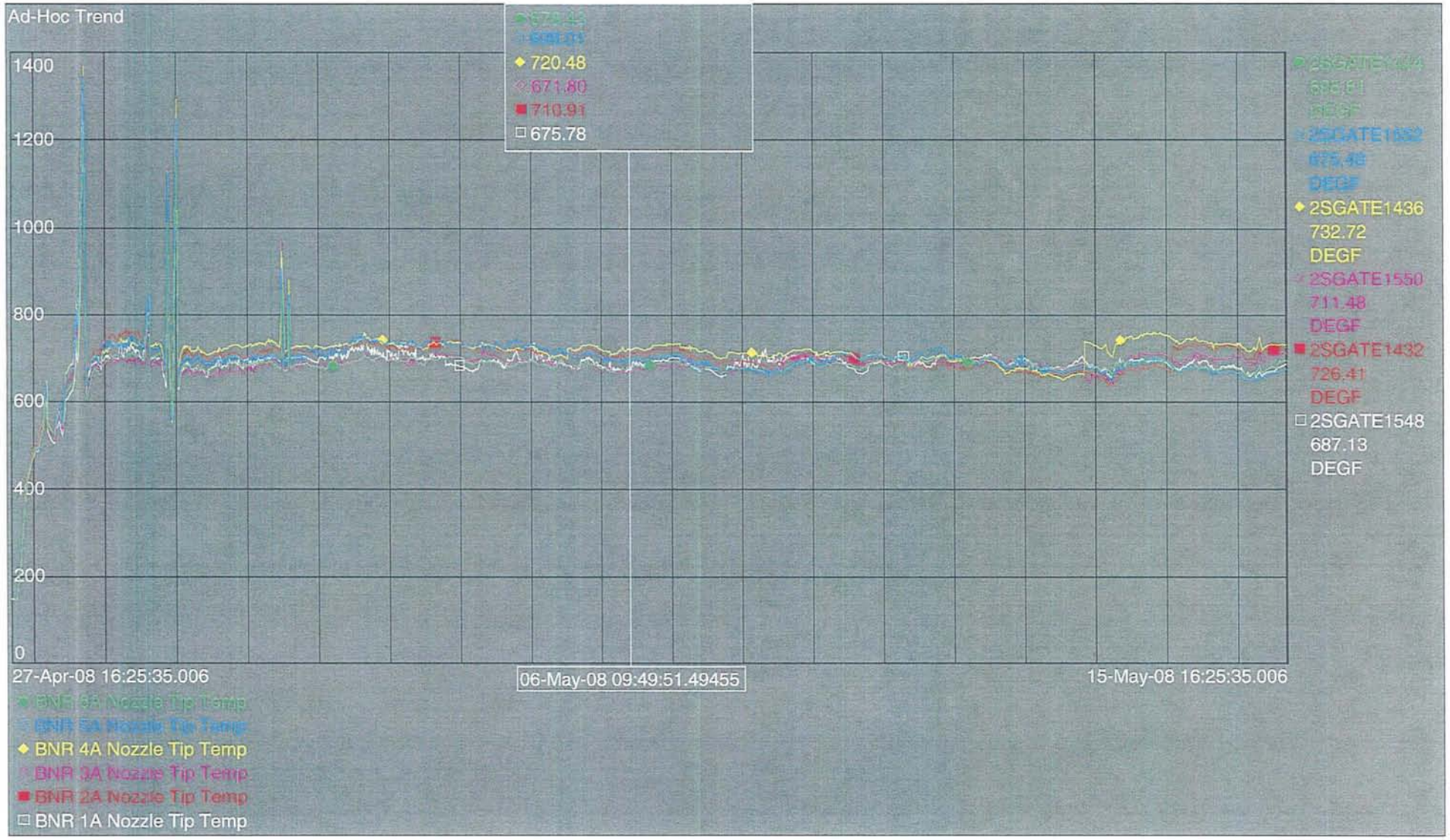

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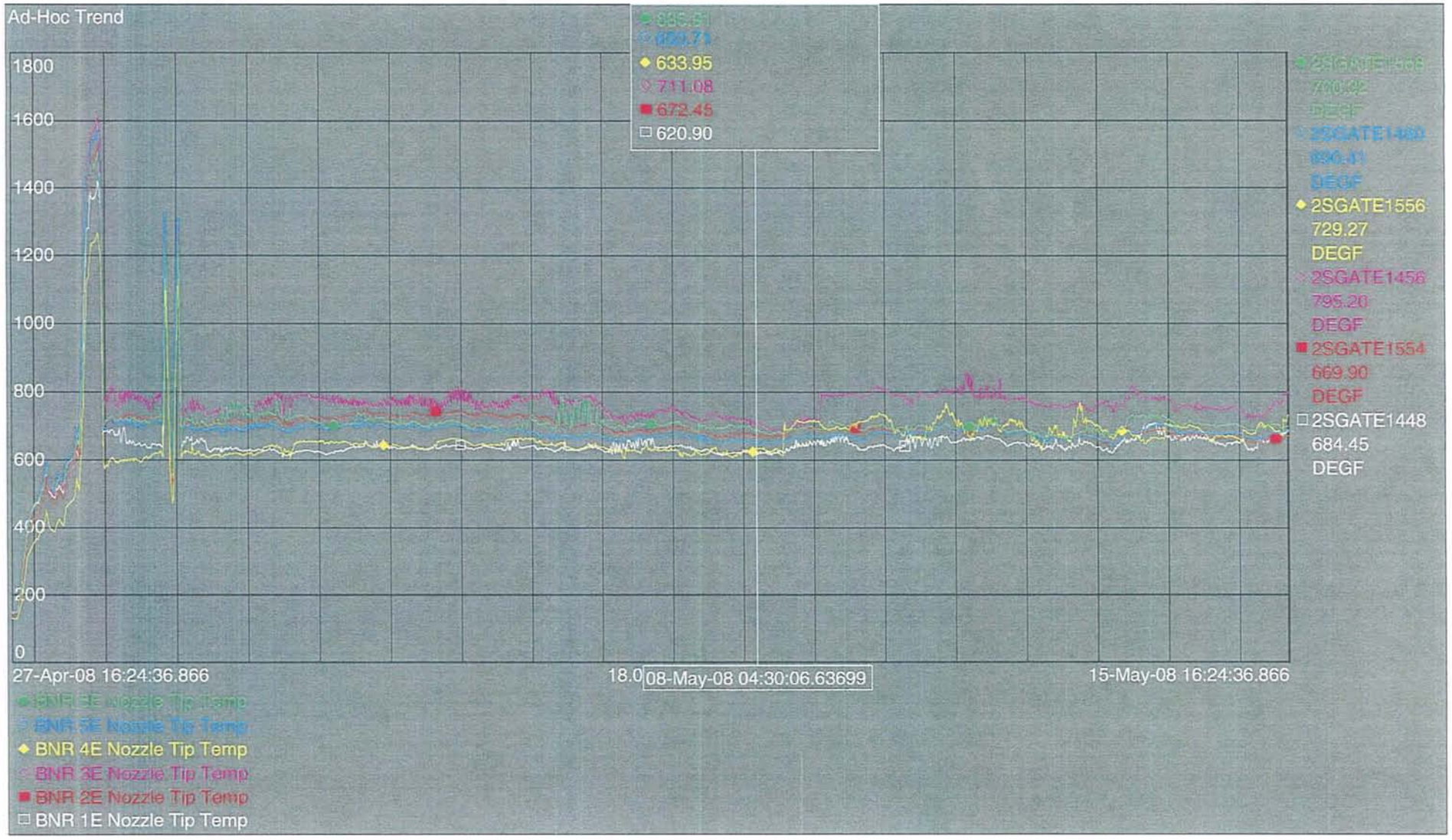
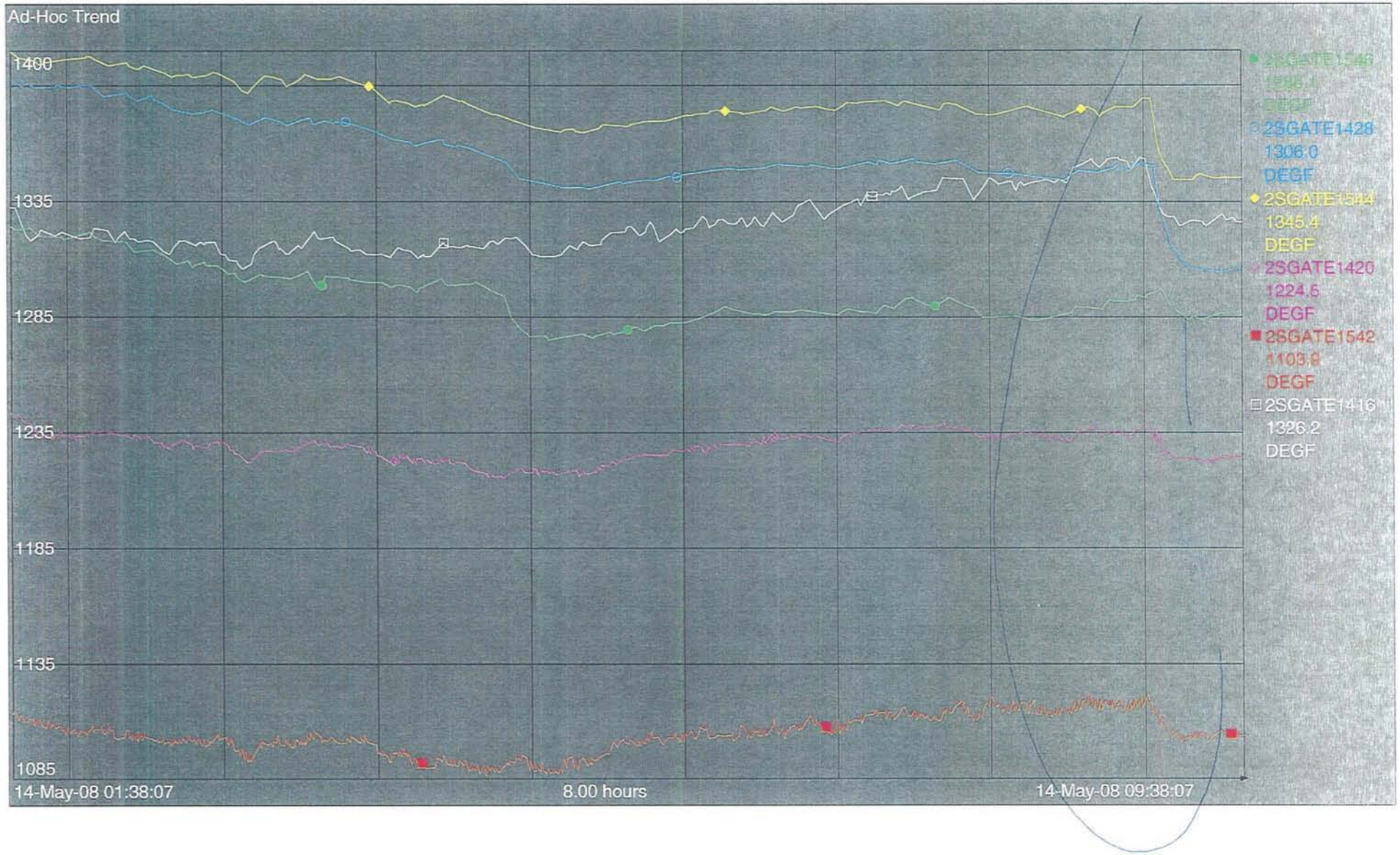


IP7021641

Set U2 F inner air from 1st hole back to 5th hole. All tip temps dropped ≈ 9:00



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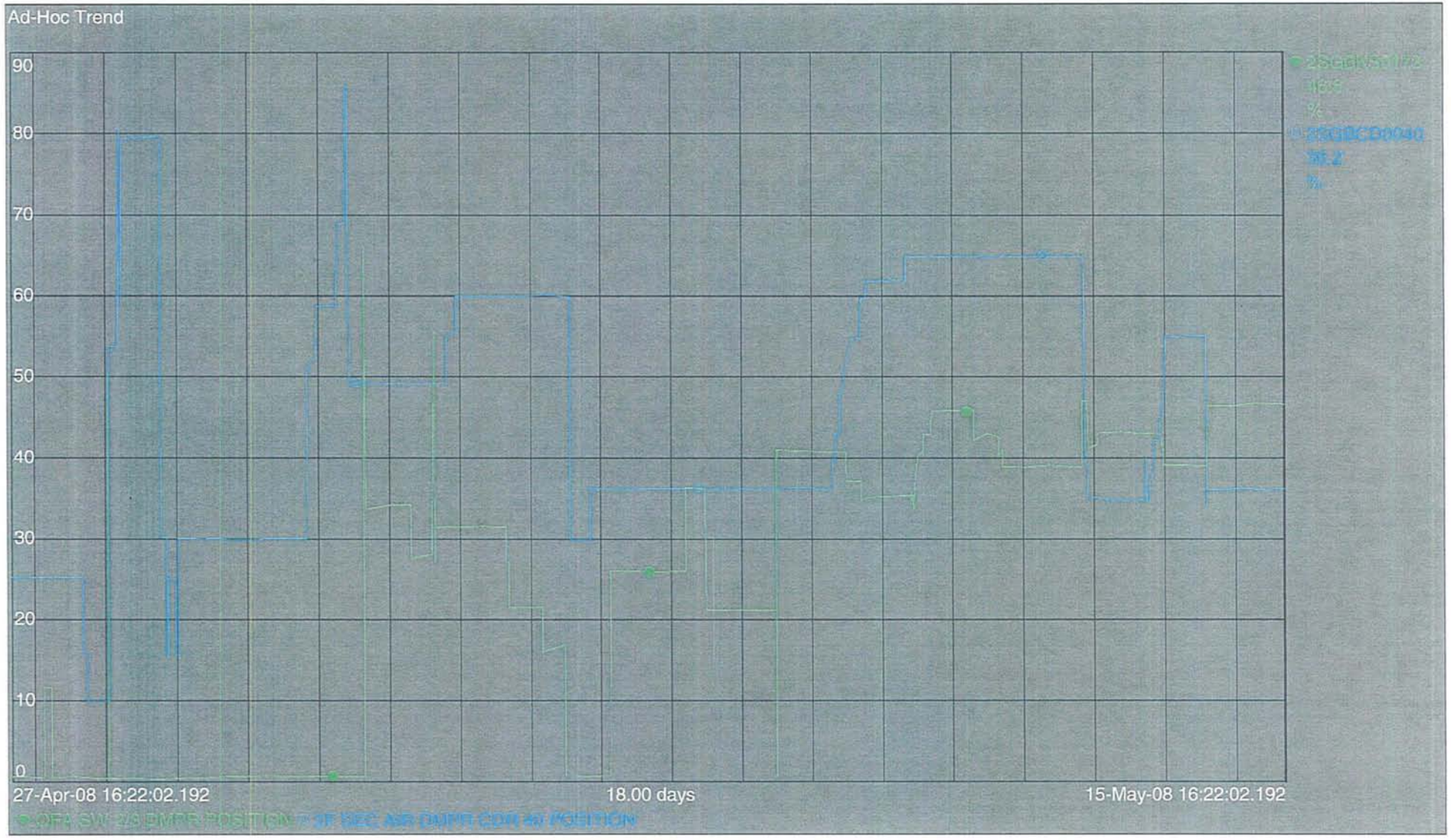
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90
80
70
60
50
40
30
20
10
0
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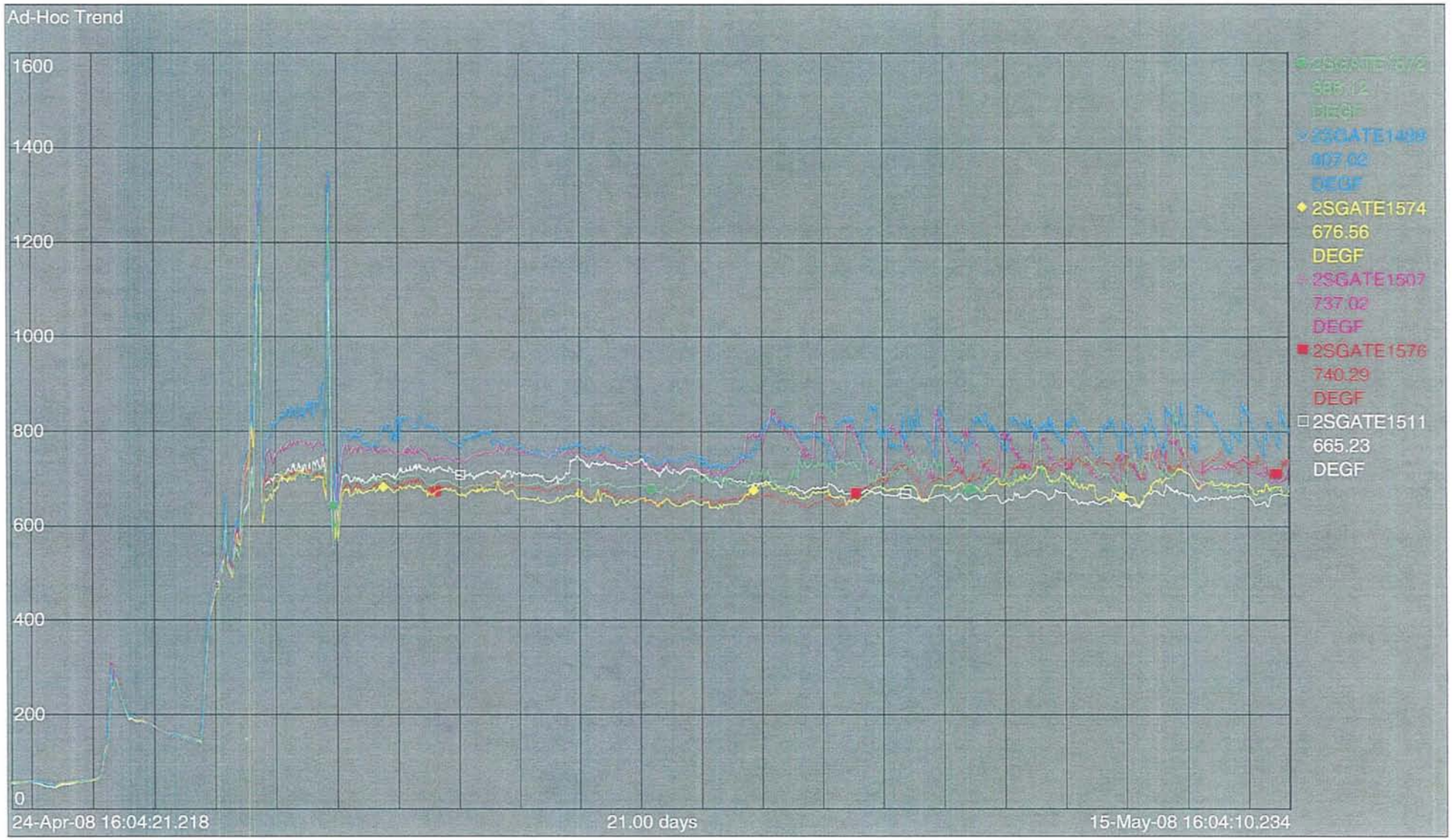
18.00 days
15-May-08 16:22:02.192

IP70216 43

H row



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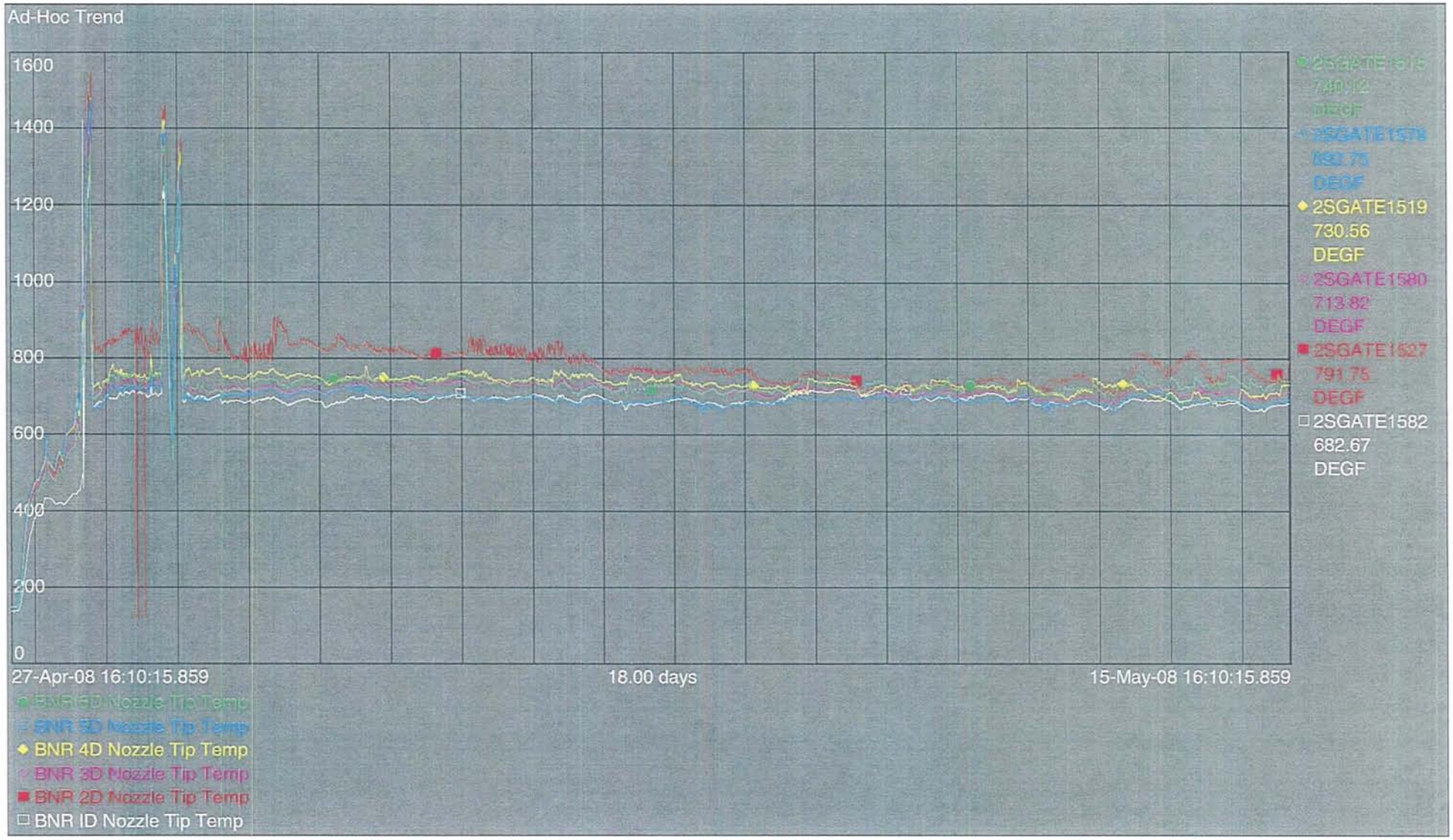
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1400
1200
1000
800
600
400
200
0
27-Apr-08 16:10:15.859
18.00 days
15-May-08 16:10:15.859
2SGATE1519
730.56
DEGF
2SGATE1580
713.82
DEGF
2SGATE1527
791.75
DEGF
2SGATE1582
682.67
DEGF
BNR 4D Nozzle Tip Temp
BNR 3D Nozzle Tip Temp
BNR 2D Nozzle Tip Temp
BNR ID Nozzle Tip Temp

IP70216645

#11

w/n FBCG
Inner set @ 5th hole

Next

O2 West 3.10 | O2 East 3.15

949.97 mw
399.22 tph

Windbox press 3.01	E6	E5	E4	E3	E2	E1	
I/S, coal flow 57.1	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	4.5	4.5	5.5	8.0	Outer register setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.47	0.46	0.55	0.43	0.43	0.55	0.33	Combustion index
Avg 693	706	681	695	750	663	663	Burner tip temp
Avg 522	528	522	514	513	524	532	Burner body temp
Avg 92	94	98	95	89	85	93	IBAMs flow KPPH
Total 552	82.9 West	SA damper Position			East	83.0	

1/3 OFA % dmpr 1
2/3 OFA % dmpr 47

Windbox press 2.71	A6	A5	A4	A3	A2	A1	
I/S, coal flow 57.2	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	4.5	4.5	5.5	8.0	Outer register setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.44	0.37	0.31	0.40	0.41	0.43	0.70	Combustion index
Avg 695	679	666	731	702	724	671	Burner tip temp
Avg 517	540	527	509	497	515	514	Burner body temp
Avg 98	94	89	97	93	116	101	IBAMs flow KPPH
Total 589	83.0 West	SA damper Position			East	83.1	

PSH Dmpr 73.4 | RH Dmpr 53.1

Windbox press 0.95	F6	F5	F4	F3	F2	F1	
I/S, coal flow 0.0	4.00	3.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	4.5	4.5	5.5	8.0	Outer register setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00	Combustion index
Avg 1281	1336	1323	1350	1228	1124	1327	Burner tip temp
Avg 833	823	800	836	882	838	820	Burner body temp
Avg 74	82	63	75	81	67	80	IBAMs flow KPPH
Total 446	36.0 West	SA damper Position			East	35.5	

Duct Press actual 55.0 | target 51.8

Windbox press 2.31	B6	B5	B4	B3	B2	B1	
I/S, coal flow 56.1	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	4.5	4.5	5.5	9.0	Outer register setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.35	0.58	0.62	0.00	0.46	0.44	0.00	Combustion index
Avg 690	659	647	664	728	703	738	Burner tip temp
Avg 516	538	528	519	478	497	534	Burner body temp
Avg 105	124	Scan Off	99	100	95	108	IBAMs flow KPPH
Total 524	83.1 West	SA damper Position			East	83.6	

4871 Total SA flow
-0.70 Furnace Press

Drum Level -0.97 Avg
-0.07 West -0.89 Middle -5.28 East

O2 West 3.10 | O2 East 3.15

	D6	D5	D4	D3	D2	D1	Windbox press 2.33	
I/S, coal flow 57.7	4.00	4.00	4.00	4.00	3.50	4.00		
	8.0	5.5	4.5	4.5	5.5	8.0		
	21.00	21.00	19.69	18.09	17.57	17.42		
	0.19	0.62	0.28	0.60	0.75	0.65	0.51	Avg
	734	691	711	706	739	678	710	Avg
	507	509	505	523	495	546	514	Avg
	102	89	90	94	73	4	74	Avg
	83.5 West	SA damper Position			East	83.4	444	Total

	H6	H5	H4	H3	H2	H1	Windbox press 2.67	
I/S, coal flow 56.1	4.00	4.00	4.00	4.00	4.00	4.00		
	8.0	5.5	4.5	4.5	5.5	8.0		
	17.42	17.57	18.09	19.69	21.00	21.00		
	0.88	0.30	0.47	0.25	0.33	0.78	0.50	Avg
	679	786	683	700	709	670	705	Avg
	520	532	525	523	518	519	523	Avg
	104	102	89	83	92	89	93	Avg
	83.0 West	SA damper Position			East	82.9	558	Total

	C6	C5	C4	C3	C2	C1	Windbox press 2.66	
I/S, coal flow 56.8	4.00	4.00	4.00	4.00	4.00	4.00		
	8.0	5.5	4.5	4.5	5.5	8.0		
	21.00	21.00	20.41	19.24	18.76	17.31		
	0.52	0.50	0.61	0.23	0.51	0.48	0.48	Avg
	715	709	671	780	693	675	707	Avg
	497	503	498	532	521	503	509	Avg
	108	97	87	91	97	107	98	Avg
	83.0 West	SA damper Position			East	83.1	585	Total

	G6	G5	G4	G3	G2	G1	Windbox press 2.42	
I/S, coal flow 57.2	4.00	4.00	4.00	4.00	4.00	4.00		
	9.0	5.5	4.5	4.5	5.5	9.0		
	17.00	17.97	18.35	20.75	21.00	21.00		
	0.63	0.68	0.69	0.32	0.50	0.70	0.59	Avg
	650	641	621	725	652	689	663	Avg
	530	518	489	514	517	510	513	Avg
	94	80	98	94	87	105	93	Avg
	82.6 West	SA damper Position			East	83.2	556	Total

Inner air set w/pin thru 7th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

Previous

U2 O2 Trends

East % O2

6'	2.1	3.4	3.6	E
13'	1.7	3.9	3.5	A F B
18'	1.6	4.3	3.9	G C H
		3.15	% O2	D

Ave

West % O2

6'	4.4	3.2	3.1	E
13'	3.8	2.8	2.0	A F B
18'	0.0	3.4	1.8	G C H
Ave		3.10	% O2	D

O2 Actual 3.11
O2 Target 2.96
NOx Actual 0.368
NOx Target 0.373

West		East
725	SA Air Temp	720
4.8	SA Duct Pr	4.5
747	Exit Gas Temp	776
3.10	Econ O2 %	3.15
-0.07	Drum Level	-5.28
724	1st stg inlet t	725
84	1st stg sprays	39
711	1st stg outlet t	710
787	2nd stg inlet t	785
88	2nd stg sprays	117
759	2nd stg outlet t	755

66.3 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 953 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 950 MW | Menu | AQCS | Coal Yard | Common | 15-May-08 10:58:40 | IPSC

IP7021646

Next

Previous

951.22 mw
400.92 tph

O2 West 3.00 O2 East 3.02

Windbox press 3.08	E6	E5	E4	E3	E2	E1	Spin Vane setting
	4.00	4.00	4.00	4.00	4.00	4.00	
I/S, coal flow	8.0	5.5	4.5	4.5	5.5	8.0	Outer register setting
57.0	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.49	0.45	0.60	0.48	0.48	0.57	0.30	Combustion index
Avg 689	699	674	702	740	662	655	Burner tip temp
Avg 518	522	517	510	509	520	529	Burner body temp
Avg 92	94	98	95	89	85	93	IBAMs flow KPPH
Total 554	82.7 West	SA damper Position			East	82.4	

1/3 OFA % dmpr 1
2/3 OFA % dmpr 47

Windbox press 2.76	A6	A5	A4	A3	A2	A1	Spin Vane setting
	4.00	4.00	4.00	4.00	4.00	4.00	
I/S, coal flow	8.0	5.5	4.5	4.5	5.5	8.0	Outer register setting
57.7	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.43	0.36	0.36	0.43	0.42	0.46	0.67	Combustion index
Avg 690	674	660	726	697	721	667	Burner tip temp
Avg 513	536	522	504	493	512	511	Burner body temp
Avg 98	95	89	96	94	116	101	IBAMs flow KPPH
Total 590	82.8 West	SA damper Position			East	83.5	

PSH Dmpr 79.7 RH Dmpr 48.4

Windbox press 1.02	F6	F5	F4	F3	F2	F1	Spin Vane setting
	4.00	3.00	4.00	4.00	4.00	4.00	
I/S, coal flow	8.0	5.5	4.5	4.5	5.5	8.0	Outer register setting
0.0	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00	Combustion index
Avg 1276	1321	1315	1346	1226	1121	1327	Burner tip temp
Avg 825	811	791	830	877	831	814	Burner body temp
Avg 75	82	63	75	82	67	81	IBAMs flow KPPH
Total 450	36.0 West	SA damper Position			East	35.5	

Duct Press actual 54.5 target 51.6

Windbox press 2.38	B6	B5	B4	B3	B2	B1	Spin Vane setting
	4.00	4.00	4.00	4.00	4.00	4.00	
I/S, coal flow	9.0	5.5	4.5	4.5	5.5	9.0	Outer register setting
55.9	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.32	0.53	0.61	0.00	0.45	0.41	0.00	Combustion index
Avg 694	676	643	664	728	712	744	Burner tip temp
Avg 510	533	520	518	479	494	520	Burner body temp
Avg 88	124	2	99	101	94	109	IBAMs flow KPPH
Total 526	83.1 West	SA damper Position			East	82.5	

4887 Total SA flow

-0.58 Furnace Press

Drum Level -0.90 Avg
0.03 West -0.87 Middle -5.72 East

O2 West 3.00 O2 East 3.02

D6	D5	D4	D3	D2	D1	Windbox press 2.48
4.00	4.00	4.00	4.00	3.50	4.00	
8.0	5.5	4.5	4.5	5.5	8.0	I/S, coal flow
21.00	21.00	19.69	18.09	17.57	17.42	56.4
0.24	0.68	0.32	0.58	0.75	0.65	0.53 Avg
727	683	708	700	746	674	706 Avg
502	504	502	519	490	543	510 Avg
102	89	90	95	81	4	78 Avg
83.6 West	SA damper Position			East	83.4	465 Total

H6	H5	H4	H3	H2	H1	Windbox press 2.69
4.00	4.00	4.00	4.00	4.00	4.00	
8.0	5.5	4.5	4.5	5.5	8.0	I/S, coal flow
17.42	17.57	18.09	19.69	21.00	21.00	58.2
0.90	0.29	0.38	0.30	0.32	0.77	0.49 Avg
675	812	681	694	707	666	706 Avg
517	530	520	520	516	517	519 Avg
104	103	89	83	92	89	93 Avg
82.9 West	SA damper Position			East	83.3	560 Total

C6	C5	C4	C3	C2	C1	Windbox press 2.81
4.00	4.00	4.00	4.00	4.00	4.00	
8.0	5.5	4.5	4.5	5.5	8.0	I/S, coal flow
21.00	21.00	20.41	19.24	18.76	17.31	57.2
0.53	0.47	0.61	0.18	0.57	0.50	0.47 Avg
711	706	676	728	706	679	701 Avg
493	502	495	527	514	501	505 Avg
108	98	87	91	97	107	98 Avg
82.6 West	SA damper Position			East	82.9	587 Total

G6	G5	G4	G3	G2	G1	Windbox press 2.55
4.00	4.00	4.00	4.00	4.00	4.00	
9.0	5.5	4.5	4.5	5.5	9.0	I/S, coal flow
17.00	17.97	18.35	20.75	21.00	21.00	57.0
0.60	0.69	0.69	0.40	0.50	0.70	0.58 Avg
642	633	622	873	727	656	692 Avg
520	509	487	513	510	509	508 Avg
94	80	99	93	88	106	93 Avg
83.5 West	SA damper Position			East	83.4	559 Total

Inner air set w/pin thru 7th slot from full open
Alarms i/s 650 F o/s 1200 F body temp, i/s 900 F o/s 1500 F tip temp

U2 O2 Trends

East % O2				
6'	2.4	3.7	3.5	E A
13'	2.1	3.8	3.6	F B
18'	1.8	3.7	3.2	G C
		3.02	% O2	H D
Ave				

West % O2				
6'	4.2	2.9	3.0	E A
13'	4.3	2.9	1.8	F B
18'	0.0	3.1	1.5	G C
Ave		3.00	% O2	H D

O2 Actual	2.94
O2 Target	2.97
NOx Actual	0.371
NOx Target	0.376

West		East
721	SA Air Temp	717
4.9	SA Duct Pr	4.5
745	Exit Gas Temp	773
3.00	Econ O2 %	3.02
0.03	Drum Level	-5.72
725	1st stg inlet t	724
90	1st stg sprays	45
710	1st stg outlet t	708
785	2nd stg inlet t	785
60	2nd stg sprays	94
764	2nd stg outlet t	766

60.2 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 948 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 951 MW | Menu | AQCS | Coal Yard | Common | 15-May-08 09:15:09 | IPSC

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A5 -

F row set @ 5th notch #10

Next

Previous

O2 West 3.06 O2 East 2.88

Windbox press 2.81	E6	E5	E4	E3	E2	E1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
54.8	8.0	5.5	4.5	4.5	5.5	8.0
	17.88	18.10	18.90	20.99	21.00	21.00
Avg 0.49	0.47	0.57	0.74	0.37	0.42	0.38
Avg 689	704	680	663	756	672	658
Avg 522	526	521	514	515	522	531
Avg 90	92	96	92	87	84	91
Total 540	77.3 West	SA damper Position			East	77.1

Windbox press 2.58	A6	A5	A4	A3	A2	A1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
54.3	8.0	5.5	4.5	4.5	5.5	8.0
	21.00	21.00	20.99	18.90	18.10	17.88
Avg 0.43	0.28	0.34	0.41	0.38	0.43	0.71
Avg 704	679	675	739	707	732	693
Avg 518	540	525	509	499	518	517
Avg 96	92	87	94	91	114	100
Total 578	78.9 West	SA damper Position			East	78.5

Windbox press 2.16	F6	F5	F4	F3	F2	F1
I/S, coal flow	4.00	3.00	4.00	4.00	4.00	4.00
0.0	8.0	5.5	4.5	4.5	5.5	8.0
	17.85	17.85	18.21	20.09	21.00	21.00
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avg 1247	1273	1288	1327	1205	1086	1307
Avg 822	798	788	826	872	832	819
Avg 87	97	74	86	94	76	94
Total 520	55.1 West	SA damper Position			East	54.9

Windbox press 2.25	B6	B5	B4	B3	B2	B1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
53.0	9.0	5.5	4.5	4.5	5.5	9.0
	21.00	21.00	20.19	18.70	18.15	17.75
Avg 0.36	0.61	0.61	0.00	0.47	0.44	0.00
Avg 690	677	646	676	727	700	712
Avg 516	536	525	523	489	500	524
Avg 88	122	2	98	99	95	110
Total 526	79.2 West	SA damper Position			East	77.5

Drum Level -1.16 Avg
-0.13 West -1.22 Middle -8.61 East

945.12 mw
377.12 tph

Spin Vane setting	
Outer register setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
1/3 OFA % dmpr	1
2/3 OFA % dmpr	39
PSH Dmpr	RH Dmpr
98.2	31.5
Duct Press actual	target
53.7	49.9
Total SA flow	4743
Furnace Press	-0.57

O2 West 3.06 O2 East 2.88

Windbox press 2.41	D6	D5	D4	D3	D2	D1
I/S, coal flow	4.00	4.00	4.00	4.00	3.50	4.00
54.1	8.0	5.5	4.5	4.5	5.5	8.0
	21.00	21.00	19.69	18.09	17.57	17.42
0.53 Avg	0.37	0.57	0.33	0.56	0.68	0.65
711 Avg	729	691	693	717	746	688
517 Avg	509	510	513	524	496	551
74 Avg	100	87	87	93	68	4
444 Total	78.4 West	SA damper Position			East	78.4

Windbox press 2.51	H6	H5	H4	H3	H2	H1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
54.4	8.0	5.5	4.5	4.5	5.5	8.0
	17.42	17.57	18.09	19.69	21.00	21.00
0.48 Avg	0.83	0.35	0.35	0.31	0.29	0.69
715 Avg	684	783	691	722	748	663
525 Avg	520	530	527	528	523	523
92 Avg	102	100	88	82	90	89
551 Total	78.1 West	SA damper Position			East	78.3

Windbox press 2.61	C6	C5	C4	C3	C2	C1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
54.0	8.0	5.5	4.5	4.5	5.5	8.0
	21.00	21.00	20.41	19.24	18.76	17.31
0.45 Avg	0.54	0.46	0.57	0.18	0.49	0.50
721 Avg	729	709	691	791	706	694
510 Avg	497	506	499	533	519	508
96 Avg	106	96	87	89	95	105
577 Total	78.1 West	SA damper Position			East	77.9

Windbox press 2.39	G6	G5	G4	G3	G2	G1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
54.2	9.0	5.5	4.5	4.5	5.5	9.0
	17.00	17.97	18.35	20.75	21.00	21.00
0.60 Avg	0.59	0.71	0.64	0.41	0.55	0.68
682 Avg	669	635	637	765	710	676
511 Avg	521	512	492	515	513	512
91 Avg	92	78	95	91	86	104
546 Total	78.6 West	SA damper Position			East	78.5

Inner air set w/pin thru 7th slot from full open

U2 O2 Trends

East % O2

6'	2.0	3.2	3.8	E A
13'	1.6	2.8	3.7	F B
18'	2.2	3.3	3.3	G C
Ave		2.88	% O2	H D

West % O2

6'	4.4	3.9	3.4	E A
13'	3.6	2.3	1.9	F B
18'	0.0	2.6	2.2	G C
Ave		3.06	% O2	H D

O2 Actual	2.95
O2 Target	2.98
NOx Actual	0.425
NOx Target	0.392

West		East
723	SA Air Temp	722
4.7	SA Duct Pr	4.4
739	Exit Gas Temp	769
3.06	Econ O2 %	2.88
-0.13	Drum Level	-8.61
727	1st stg inlet t	724
64	1st stg sprays	23
714	1st stg outlet t	714
782	2nd stg inlet t	784
84	2nd stg sprays	113
759	2nd stg outlet t	760

62.4 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 947 MW | Menu | AQCS | U2 BURNER OVRWS | Burner Fronts | Unit 2 945 MW | Menu | AQCS | Coal Yard | Common | 14-May-08 13:43:38 | IPSC

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put a

Next

Previous

947.85 mw
415.90 tph

O2 West 2.72 O2 East 2.90

Windbox press 3.14	E6	E5	E4	E3	E2	E1
I/S, coal flow 59.7	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	4.5	4.5	5.5	8.0
	17.88	18.10	18.90	20.99	21.00	21.00
Avg 0.52	0.48	0.60	0.77	0.42	0.47	0.36
Avg 702	729	678	684	786	679	657
Avg 525	534	527	520	515	524	534
Avg 93	94	98	95	88	86	93
Total 555	85.3 West	SA damper Position			East	85.7

Windbox press 2.86	A6	A5	A4	A3	A2	A1
I/S, coal flow 60.3	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	4.5	4.5	5.5	8.0
	21.00	21.00	20.99	18.90	18.10	17.88
Avg 0.52	0.25	0.52	0.44	0.56	0.57	0.71
Avg 698	690	691	750	689	675	693
Avg 521	546	534	516	499	515	518
Avg 99	95	89	98	93	116	102
Total 593	84.9 West	SA damper Position			East	86.0

Windbox press 1.06	F6	F5	F4	F3	F2	F1
I/S, coal flow 0.0	4.00	3.00	4.00	4.00	4.00	4.00
	8.0	5.5	4.5	4.5	5.5	8.0
	17.85	17.85	18.21	20.09	21.00	21.00
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avg 1345	1360	1444	1436	1283	1151	1399
Avg 854	839	830	859	904	855	837
Avg 75	82	62	76	82	66	80
Total 447	34.9 West	SA damper Position			East	35.0

Windbox press 2.44	B6	B5	B4	B3	B2	B1
I/S, coal flow 58.8	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	5.5	4.5	4.5	5.5	9.0
	21.00	21.00	20.19	18.70	18.15	17.75
Avg 0.37	0.61	0.72	0.00	0.46	0.43	0.00
Avg 691	668	645	684	719	725	708
Avg 518	538	531	528	487	500	525
Avg 89	125	2	100	100	98	110
Total 535	85.5 West	SA damper Position			East	85.5

Drum Level -0.97 Avg
-0.08 West -0.80 Middle -1.85 East

Spin Vane setting	
Outer register setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
1/3 OFA % dmpr	1
2/3 OFA % dmpr	43
PSH Dmpr	RH Dmpr
99.9	30.1
Duct Press actual	target
56.2	50.7
4862	Total SA flow
-0.54	Furnace Press

O2 West 2.72 O2 East 2.90

Windbox press 2.50	D6	D5	D4	D3	D2	D1
I/S, coal flow 59.0	4.00	4.00	4.00	4.00	3.50	4.00
	8.0	5.5	4.5	4.5	5.5	8.0
	21.00	21.00	19.69	18.09	17.57	17.42
0.57 Avg	0.36	0.66	0.49	0.55	0.69	0.66
728 Avg	744	705	732	723	767	696
518 Avg	512	512	507	527	497	553
77 Avg	103	89	91	95	83	4
465 Total	86.3 West	SA damper Position			East	84.9

Windbox press 2.79	H6	H5	H4	H3	H2	H1
I/S, coal flow 60.0	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	4.5	4.5	5.5	8.0
	17.42	17.57	18.09	19.69	21.00	21.00
0.48 Avg	0.67	0.41	0.60	0.18	0.31	0.78
735 Avg	738	809	694	749	742	675
529 Avg	527	538	529	530	528	524
94 Avg	104	102	91	84	92	91
564 Total	85.5 West	SA damper Position			East	86.3

Windbox press 2.91	C6	C5	C4	C3	C2	C1
I/S, coal flow 58.3	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	4.5	4.5	5.5	8.0
	21.00	21.00	20.41	19.24	18.76	17.31
0.41 Avg	0.52	0.50	0.28	0.27	0.49	0.43
720 Avg	733	697	706	765	709	710
514 Avg	504	513	506	534	521	509
99 Avg	109	98	88	92	98	108
593 Total	86.1 West	SA damper Position			East	86.0

Windbox press 2.59	G6	G5	G4	G3	G2	G1
I/S, coal flow 59.2	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	5.5	4.5	4.5	5.5	9.0
	17.00	17.97	18.35	20.75	21.00	21.00
0.55 Avg	0.57	0.76	0.52	0.30	0.54	0.62
677 Avg	667	640	674	649	751	686
514 Avg	527	517	500	513	515	514
93 Avg	94	81	97	95	88	106
561 Total	86.2 West	SA damper Position			East	86.2

Inner air set w/pin thru 7th slot from full open

U2 O2 Trends

East % O2

6'	2.0	3.9	4.4	E A
13'	1.2	3.1	3.5	F B
18'	2.0	3.1	3.1	G C
Ave	2.90	% O2		H D

West % O2

6'	4.4	2.7	1.4	E A
13'	3.6	2.0	1.7	F B
18'	0.0	3.0	3.0	G C
Ave	2.72	% O2		H D

O2 Actual	2.82
O2 Target	2.98
NOx Actual	0.360
NOx Target	0.353

West		East
739	SA Air Temp	731
4.9	SA Duct Pr	4.5
758	Exit Gas Temp	783
2.72	Econ O2 %	2.90
-0.08	Drum Level	-1.85
733	1st stg inlet t	726
130	1st stg sprays	13
711	1st stg outlet t	725
786	2nd stg inlet t	793
72	2nd stg sprays	126
764	2nd stg outlet t	764

54.4 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 949 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 948 MW | Menu | AQCS | Coal Yard | Common | 13-May-08 11:02:39 | IPSC

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7 after [illegible]
Inner 5 to 7th hole

Next | Previous

950.08 mw
412.19 tph

O2 West 2.84 | O2 East 2.81

Windbox press 3.13	E6	E5	E4	E3	E2	E1	
I/S, coal flow 58.5	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	4.5	4.5	5.5	8.0	Outer register setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.50	0.46	0.56	0.78	0.44	0.45	0.33	Combustion index
Avg 700	722	676	687	782	675	658	Burner tip temp
Avg 522	529	523	515	512	521	531	Burner body temp
Avg 92	94	98	94	89	86	93	IBAMs flow KPPH
Total 554	86.1 West	SA damper Position			East	85.5	

1/3 OFA % dmpr 1
2/3 OFA % dmpr 43

Windbox press 2.80	A6	A5	A4	A3	A2	A1	
I/S, coal flow 59.6	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	4.5	4.5	5.5	8.0	Outer register setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.50	0.28	0.42	0.48	0.56	0.56	0.72	Combustion index
Avg 692	684	685	744	683	670	687	Burner tip temp
Avg 517	541	530	512	496	512	514	Burner body temp
Avg 99	95	90	97	94	115	102	IBAMs flow KPPH
Total 592	85.6 West	SA damper Position			East	85.6	

PSH Dmpr 93.2 | RH Dmpr 35.9

Windbox press 1.03	F6	F5	F4	F3	F2	F1	
I/S, coal flow 0.0	4.00	3.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	4.5	4.5	5.5	8.0	Outer register setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.01	0.00	0.00	0.04	0.00	0.00	0.00	Combustion index
Avg 1333	1359	1431	1399	1273	1141	1393	Burner tip temp
Avg 848	834	824	853	898	851	830	Burner body temp
Avg 74	83	61	75	82	66	80	IBAMs flow KPPH
Total 447	34.9 West	SA damper Position			East	35.0	

Duct Press actual 55.4 | target 51.3

Windbox press 2.43	B6	B5	B4	B3	B2	B1	
I/S, coal flow 58.5	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	4.5	4.5	5.5	9.0	Outer register setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.35	0.62	0.63	0.00	0.43	0.40	0.00	Combustion index
Avg 684	664	642	677	717	705	696	Burner tip temp
Avg 515	535	527	524	484	497	520	Burner body temp
Avg 89	125	2	100	100	98	110	IBAMs flow KPPH
Total 535	85.6 West	SA damper Position			East	85.8	

4832 Total SA flow
-0.52 Furnace Press

Drum Level -1.09 Avg
-0.37 West -1.15 Middle -1.66 East

O2 West 2.84 | O2 East 2.81

Windbox press 2.53	D6	D5	D4	D3	D2	D1	
I/S, coal flow 59.2	4.00	4.00	4.00	4.00	3.50	4.00	
	8.0	5.5	4.5	4.5	5.5	8.0	
	21.00	21.00	19.69	18.09	17.57	17.42	
0.56 Avg	0.38	0.66	0.40	0.56	0.69	0.64	
722 Avg	738	698	733	716	754	691	
515 Avg	508	509	504	524	494	549	
76 Avg	102	89	90	95	73	4	
453 Total	85.8 West	SA damper Position			East	85.0	

Windbox press 2.78	H6	H5	H4	H3	H2	H1	
I/S, coal flow 58.5	4.00	4.00	4.00	4.00	4.00	4.00	
	8.0	5.5	4.5	4.5	5.5	8.0	
	17.42	17.57	18.09	19.69	21.00	21.00	
0.47 Avg	0.66	0.41	0.51	0.19	0.32	0.75	
739 Avg	753	824	680	750	758	670	
525 Avg	524	534	523	527	526	520	
94 Avg	104	102	89	84	91	90	
561 Total	85.6 West	SA damper Position			East	85.3	

Windbox press 2.84	C6	C5	C4	C3	C2	C1	
I/S, coal flow 58.4	4.00	4.00	4.00	4.00	4.00	4.00	
	8.0	5.5	4.5	4.5	5.5	8.0	
	21.00	21.00	20.41	19.24	18.76	17.31	
0.43 Avg	0.56	0.54	0.26	0.27	0.46	0.49	
721 Avg	725	690	700	781	713	718	
511 Avg	502	509	502	532	518	504	
99 Avg	108	98	89	91	98	108	
592 Total	86.3 West	SA damper Position			East	86.2	

Windbox press 2.60	G6	G5	G4	G3	G2	G1	
I/S, coal flow 58.5	4.00	4.00	4.00	4.00	4.00	4.00	
	9.0	5.5	4.5	4.5	5.5	9.0	
	17.00	17.97	18.35	20.75	21.00	21.00	
0.57 Avg	0.64	0.76	0.52	0.31	0.50	0.71	
668 Avg	645	635	662	660	728	674	
511 Avg	524	513	497	509	512	511	
93 Avg	94	80	98	93	88	105	
559 Total	85.2 West	SA damper Position			East	85.8	

Inner air set w/pin thru 7th slot from full open

U2 O2 Trends

East % O2

6'	2.5	4.0	4.0	E
13'	1.7	2.6	2.9	A F B
18'	2.1	3.0	2.7	G C
			2.81 % O2	H D

Ave

West % O2

6'	4.1	2.7	1.5	E
13'	3.5	3.1	2.0	A F B
18'	0.0	3.1	3.0	G C
Ave			2.84 % O2	H D

O2 Actual 2.84
O2 Target 2.98
NOx Actual 0.354
NOx Target 0.354

West		East
734	SA Air Temp	726
4.8	SA Duct Pr	4.5
757	Exit Gas Temp	781
2.84	Econ O2 %	2.81
-0.37	Drum Level	-1.66
730	1st stg inlet t	724
119	1st stg sprays	13
710	1st stg outlet t	722
785	2nd stg inlet t	791
89	2nd stg sprays	135
758	2nd stg outlet t	758

51.6 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 949 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 950 MW | Menu | AQCS | Coal Yard | Common | 13-May-08 10:07:39 | IPSC

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#2

Next

Previous

O2 West 2.80 | O2 East 2.97

Windbox press 3.11	E6	E5	E4	E3	E2	E1
I/S, coal flow 59.5	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	4.5	4.5	5.5	8.0
	17.88	18.10	18.90	20.99	21.00	21.00
Avg 0.52	0.53	0.61	0.75	0.43	0.41	0.38
Avg 689	693	668	684	762	668	656
Avg 517	524	518	511	502	516	533
Avg 91	93	97	93	88	85	92
Total 548	85.7 West	SA damper Position			East	86.5

Windbox press 2.81	A6	A5	A4	A3	A2	A1
I/S, coal flow 59.0	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	4.5	4.5	5.5	8.0
	21.00	21.00	20.99	18.90	18.10	17.88
Avg 0.51	0.26	0.53	0.54	0.56	0.60	0.59
Avg 688	690	675	736	672	665	690
Avg 513	533	525	503	493	512	514
Avg 98	94	89	96	93	114	101
Total 587	85.5 West	SA damper Position			East	85.7

Windbox press 1.02	F6	F5	F4	F3	F2	F1
I/S, coal flow 0.0	4.00	3.00	4.00	4.00	4.00	4.00
	8.0	5.5	4.5	4.5	5.5	8.0
	17.85	17.85	18.21	20.09	21.00	21.00
Avg 0.00	0.00	0.00	0.03	0.00	0.00	0.00
Avg 1307	1348	1386	1374	1251	1134	1353
Avg 846	832	818	852	896	848	828
Avg 74	81	62	74	80	67	79
Total 444	34.9 West	SA damper Position			East	35.0

Windbox press 2.44	B6	B5	B4	B3	B2	B1
I/S, coal flow 59.9	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	5.5	4.5	4.5	5.5	9.0
	21.00	21.00	20.19	18.70	18.15	17.75
Avg 0.37	0.70	0.65	0.00	0.43	0.46	0.00
Avg 681	642	638	668	716	700	722
Avg 514	533	527	519	477	493	533
Avg 89	123	2	99	100	101	109
Total 534	85.8 West	SA damper Position			East	85.7

Drum Level -1.58 Avg
-1.08 West -1.78 Middle -1.41 East

947.00 mw
414.09 tph

Spin Vane setting	
Outer register setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
1/3 OFA % dmpr	1
2/3 OFA % dmpr	43
PSH Dmpr	RH Dmpr
73.3	53.4
Duct Press actual	target
55.7	50.7
Total SA flow	4799
Furnace Press	-0.43

O2 West 2.80 | O2 East 2.97

Windbox press 2.42	D6	D5	D4	D3	D2	D1
I/S, coal flow 59.4	4.00	4.00	4.00	4.00	3.50	4.00
	8.0	5.5	4.5	4.5	5.5	8.0
	21.00	21.00	19.69	18.09	17.57	17.42
0.54 Avg	0.28	0.64	0.43	0.55	0.69	0.69
711 Avg	724	690	737	709	721	688
512 Avg	508	504	504	519	490	545
74 Avg	102	88	90	94	78	4
446 Total	85.6 West	SA damper Position			East	85.3

Windbox press 2.67	H6	H5	H4	H3	H2	H1
I/S, coal flow 59.7	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	4.5	4.5	5.5	8.0
	17.42	17.57	18.09	19.69	21.00	21.00
0.48 Avg	0.61	0.40	0.62	0.19	0.26	0.77
729 Avg	728	801	674	758	742	669
520 Avg	522	534	519	514	521	516
93 Avg	103	101	89	84	89	89
558 Total	86.5 West	SA damper Position			East	85.6

Windbox press 2.84	C6	C5	C4	C3	C2	C1
I/S, coal flow 58.6	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	4.5	4.5	5.5	8.0
	21.00	21.00	20.41	19.24	18.76	17.31
0.44 Avg	0.62	0.51	0.37	0.30	0.47	0.38
707 Avg	714	682	679	761	698	704
508 Avg	496	503	497	531	520	500
98 Avg	107	97	87	91	97	106
587 Total	86.4 West	SA damper Position			East	86.1

Windbox press 2.60	G6	G5	G4	G3	G2	G1
I/S, coal flow 58.7	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	5.5	4.5	4.5	5.5	9.0
	17.00	17.97	18.35	20.75	21.00	21.00
0.55 Avg	0.62	0.74	0.52	0.33	0.46	0.71
654 Avg	645	633	648	663	649	684
509 Avg	523	514	491	507	510	506
92 Avg	93	80	97	93	86	104
553 Total	86.0 West	SA damper Position			East	86.1

Inner air set w/pin thru 5th slot from full open

U2 O2 Trends

East % O2

6'	3.0	4.2	3.6	E A
13'	2.6	2.7	2.8	F B
18'	2.4	3.4	2.2	G C
		2.97	% O2	H D

Ave

West % O2

6'	4.3	2.1	1.0	E A
13'	3.9	2.9	2.1	F B
18'	0.0	3.6	2.5	G C
Ave		2.80	% O2	H D

O2 Actual	2.88
O2 Target	2.98
NOx Actual	0.354
NOx Target	0.354

West		East
728	SA Air Temp	722
4.8	SA Duct Pr	4.4
750	Exit Gas Temp	777
2.80	Econ O2 %	2.97
-1.08	Drum Level	-1.41
726	1st stg inlet t	723
103	1st stg sprays	12
710	1st stg outlet t	719
785	2nd stg inlet t	790
103	2nd stg sprays	145
755	2nd stg outlet t	755

46.9 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 950 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 947 MW | Menu | AQCS | Coal Yard | Common | 13-May-08 08:39:08 | IPSC

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#8

Next

Previous

950.04 mw
388.30 tph

O2 West 2.80 | O2 East 2.62

Windbox press 2.80	E6	E5	E4	E3	E2	E1	
I/S, coal flow 56.2	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	4.5	4.5	5.5	8.0	Outer register setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.50	0.50	0.54	0.68	0.40	0.43	0.54	Combustion index
Avg 676	670	664	657	758	667	638	Burner tip temp
Avg 506	511	508	502	493	504	516	Burner body temp
Avg 90	92	96	91	87	84	91	IBAMs flow KPPH
Total 542	81.8 West	SA damper Position			East	82.7	

1/3 OFA % dmpr 1
2/3 OFA % dmpr 39

Windbox press 2.49	A6	A5	A4	A3	A2	A1	
I/S, coal flow 55.9	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	4.5	4.5	5.5	8.0	Outer register setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.52	0.27	0.56	0.54	0.54	0.60	0.62	Combustion index
Avg 672	679	672	657	679	662	681	Burner tip temp
Avg 500	521	510	486	483	501	502	Burner body temp
Avg 97	93	87	95	93	113	100	IBAMs flow KPPH
Total 581	82.1 West	SA damper Position			East	81.5	

PSH Dmpr 70.2 | RH Dmpr 56.1

Windbox press 2.41	F6	F5	F4	F3	F2	F1	
I/S, coal flow 0.0	4.00	3.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	4.5	4.5	5.5	8.0	Outer register setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00	Combustion index
Avg 1254	1293	1354	1324	1192	1067	1295	Burner tip temp
Avg 812	795	796	811	857	817	799	Burner body temp
Avg 90	101	77	90	96	81	98	IBAMs flow KPPH
Total 543	64.9 West	SA damper Position			East	64.8	

Duct Press actual 52.9 | target 51.3

Windbox press 2.18	B6	B5	B4	B3	B2	B1	
I/S, coal flow 54.3	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	4.5	4.5	5.5	9.0	Outer register setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.38	0.62	0.66	0.00	0.46	0.53	0.00	Combustion index
Avg 677	645	646	664	709	679	717	Burner tip temp
Avg 501	521	517	504	468	483	514	Burner body temp
Avg 88	123	2	99	100	96	108	IBAMs flow KPPH
Total 529	82.2 West	SA damper Position			East	80.8	

4783 Total SA flow
-0.51 Furnace Press

Drum Level -0.74 Avg
-0.27 West -0.74 Middle -5.33 East

O2 West 2.80 | O2 East 2.62

Windbox press 2.22	D6	D5	D4	D3	D2	D1	
I/S, coal flow 55.9	4.00	4.00	4.00	4.00	3.50	4.00	
	8.0	5.5	4.5	4.5	5.5	8.0	
	21.00	21.00	19.69	18.09	17.57	17.42	
0.51 Avg	0.30	0.63	0.48	0.49	0.58	0.60	
705 Avg	722	681	704	692	754	681	
502 Avg	500	493	503	505	479	532	
73 Avg	101	87	88	92	68	4	
439 Total	81.2 West	SA damper Position			East	81.5	

Windbox press 2.43	H6	H5	H4	H3	H2	H1	
I/S, coal flow 55.3	4.00	4.00	4.00	4.00	4.00	4.00	
	8.0	5.5	4.5	4.5	5.5	8.0	
	17.42	17.57	18.09	19.69	21.00	21.00	
0.48 Avg	0.60	0.32	0.65	0.19	0.36	0.76	
712 Avg	711	804	659	706	744	650	
507 Avg	506	518	508	503	508	502	
92 Avg	102	100	89	84	88	89	
553 Total	81.5 West	SA damper Position			East	81.6	

Windbox press 2.53	C6	C5	C4	C3	C2	C1	
I/S, coal flow 55.4	4.00	4.00	4.00	4.00	4.00	4.00	
	8.0	5.5	4.5	4.5	5.5	8.0	
	21.00	21.00	20.41	19.24	18.76	17.31	
0.40 Avg	0.42	0.49	0.37	0.25	0.43	0.43	
683 Avg	690	684	679	703	673	672	
495 Avg	483	492	486	518	505	487	
97 Avg	106	96	86	89	96	105	
579 Total	81.6 West	SA damper Position			East	81.5	

Windbox press 2.29	G6	G5	G4	G3	G2	G1	
I/S, coal flow 55.6	4.00	4.00	4.00	4.00	4.00	4.00	
	9.0	5.5	4.5	4.5	5.5	9.0	
	17.00	17.97	18.35	20.75	21.00	21.00	
0.56 Avg	0.62	0.75	0.52	0.35	0.54	0.50	
643 Avg	626	618	631	726	626	633	
495 Avg	510	502	482	496	500	483	
91 Avg	92	78	96	91	85	102	
544 Total	82.4 West	SA damper Position			East	81.5	

U2 O2 Trends

East % O2

6'	2.0	3.3	3.9	E
13'	1.5	2.6	3.2	A F B
18'	1.5	2.8	2.5	G C
			2.62 % O2	H D

Ave

West % O2

6'	4.7	2.8	1.5	E
13'	3.8	2.9	1.7	A F B
18'	0.0	3.0	2.0	G C
Ave			2.80 % O2	H D

O2 Actual 2.70
O2 Target 2.98
NOx Actual 0.403
NOx Target 0.392

West		East
707	SA Air Temp	700
4.7	SA Duct Pr	4.3
732	Exit Gas Temp	755
2.80	Econ O2 %	2.62
-0.27	Drum Level	-5.33
724	1st stg inlet t	721
89	1st stg sprays	23
710	1st stg outlet t	712
783	2nd stg inlet t	784
118	2nd stg sprays	141
753	2nd stg outlet t	752

50.6 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 948 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 950 MW | Menu | AQCS | Coal Yard | Common | 12-May-08 14:43:40 | IPSC

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#3 & #4 50 & 45

Next

949.78 mw
389.42 tph

O2 West 2.97 O2 East 2.73

Windbox press 2.87	E6	E5	E4	E3	E2	E1
I/S, coal flow 56.1	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	17.88	18.10	18.90	20.99	21.00	21.00
Avg 0.49	0.47	0.57	0.65	0.40	0.37	0.38
Avg 675	666	661	672	754	666	630
Avg 502	507	505	498	489	502	514
Avg 89	90	94	89	85	82	89
Total 534	80.8 West	SA damper Position			East	80.8

Windbox press 2.56	A6	A5	A4	A3	A2	A1
I/S, coal flow 56.8	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	21.00	21.00	20.99	18.90	18.10	17.88
Avg 0.49	0.25	0.50	0.55	0.46	0.55	0.64
Avg 667	674	669	651	676	659	675
Avg 496	516	507	476	481	497	498
Avg 96	91	86	95	92	111	97
Total 573	81.1 West	SA damper Position			East	81.9

Windbox press 2.52	F6	F5	F4	F3	F2	F1
I/S, coal flow 0.0	4.00	3.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	17.85	17.85	18.21	20.09	21.00	21.00
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avg 1251	1300	1355	1309	1182	1064	1294
Avg 809	793	793	804	854	815	797
Avg 89	99	75	90	94	79	96
Total 535	64.9 West	SA damper Position			East	64.8

Windbox press 2.29	B6	B5	B4	B3	B2	B1
I/S, coal flow 54.8	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	5.5	5.0	5.0	5.5	9.0
	21.00	21.00	20.19	18.70	18.15	17.75
Avg 0.39	0.68	0.65	0.00	0.48	0.50	0.00
Avg 675	645	643	659	704	675	730
Avg 498	516	513	501	469	480	511
Avg 86	120	2	95	98	94	105
Total 519	81.1 West	SA damper Position			East	82.0

Drum Level -0.66 Avg
-0.02 West -0.66 Middle -4.05 East

Spin Vane setting	
Outer register setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
PSH Dmpr	RH Dmpr
82.9	45.0
Spin Vane setting	
Outer register setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
Duct Press actual	target
52.8	50.4
Spin Vane setting	
Outer register setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
4684	Total SA flow
-0.43	Furnace Press

O2 West 2.97 O2 East 2.73

Windbox press 2.35	D6	D5	D4	D3	D2	D1
I/S, coal flow 55.2	4.00	4.00	4.00	4.00	3.50	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	21.00	21.00	19.69	18.09	17.57	17.42
0.51 Avg	0.33	0.62	0.49	0.55	0.56	0.54
701 Avg	721	681	697	688	745	677
499 Avg	497	490	499	503	476	529
69 Avg	98	85	86	91	56	4
414 Total	81.1 West	SA damper Position			East	81.1

Windbox press 2.52	H6	H5	H4	H3	H2	H1
I/S, coal flow 55.7	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	17.42	17.57	18.09	19.69	21.00	21.00
0.48 Avg	0.62	0.29	0.61	0.19	0.34	0.73
702 Avg	714	747	656	702	748	647
505 Avg	503	514	507	500	506	498
91 Avg	100	98	88	85	86	87
545 Total	82.0 West	SA damper Position			East	81.7

Windbox press 2.62	C6	C5	C4	C3	C2	C1
I/S, coal flow 55.9	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.0	5.0	5.5	8.0
	21.00	21.00	20.41	19.24	18.76	17.31
0.40 Avg	0.39	0.50	0.38	0.27	0.41	0.44
684 Avg	689	681	684	715	664	670
492 Avg	480	490	483	514	501	485
95 Avg	104	94	87	90	94	103
572 Total	80.8 West	SA damper Position			East	82.1

Windbox press 2.29	G6	G5	G4	G3	G2	G1
I/S, coal flow 55.9	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	5.5	5.0	5.0	5.5	9.0
	17.00	17.97	18.35	20.75	21.00	21.00
0.53 Avg	0.59	0.74	0.51	0.37	0.51	0.45
628 Avg	621	614	627	654	621	631
493 Avg	506	497	482	495	498	481
89 Avg	90	76	95	89	84	100
537 Total	81.8 West	SA damper Position			East	82.2

Previous

U2 O2 Trends

East % O2

6'	2.1	3.2	3.8	E
13'	1.5	2.6	3.5	A F B
18'	1.8	3.0	3.2	G C
Ave		2.73	% O2	H D

West % O2

6'	4.3	2.8	1.4	E
13'	4.2	3.0	1.9	A F B
18'	0.0	3.1	2.6	G C
Ave		2.97	% O2	H D

O2 Actual	2.85
O2 Target	2.97
NOx Actual	0.401
NOx Target	0.392

West		East
700	SA Air Temp	694
4.6	SA Duct Pr	4.2
724	Exit Gas Temp	747
2.97	Econ O2 %	2.73
-0.02	Drum Level	-4.05
724	1st stg inlet t	721
94	1st stg sprays	24
710	1st stg outlet t	712
785	2nd stg inlet t	785
93	2nd stg sprays	121
759	2nd stg outlet t	760

46.4 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 953 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 950 MW | Menu | AQCS | Coal Yard | Common | 12-May-08 13:17:40 | IPSC

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Next

949.78 mw
381.55 tph

O2 West 2.90 | O2 East 3.09

Windbox press 3.68	E6	E5	E4	E3	E2	E1	Spin Vane setting	D6	D5	D4	D3	D2	D1	Windbox press 3.11
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Outer register setting	4.00	4.00	4.00	4.00	3.50	4.00	I/S, coal flow
55.0	8.0	5.5	5.0	5.0	5.5	8.0	Adjustable restrictor setting	8.0	5.5	5.0	5.0	5.5	8.0	54.6
Avg 0.51	17.88	18.10	18.90	20.99	21.00	21.00	Combustion index	21.00	21.00	19.69	18.09	17.57	17.42	
Avg 669	0.50	0.52	0.60	0.53	0.46	0.47	Burner tip temp	0.44	0.75	0.50	0.54	0.44	0.57	0.54 Avg
Avg 512	693	659	625	732	676	627	Burner body temp	721	682	737	723	768	685	719 Avg
Avg 98	516	514	506	499	514	522	IBAMs flow KPPH	513	501	516	517	487	537	512 Avg
Total 586	98	102	101	96	92	97		108	93	95	100	92	4	82 Avg
	78.1 West	SA damper Position			East	79.7		80.7 West	SA damper Position			East	78.8	493 Total

Windbox press 3.36	A6	A5	A4	A3	A2	A1	Spin Vane setting	H6	H5	H4	H3	H2	H1	Windbox press 3.31
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Outer register setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow
54.7	8.0	5.5	5.0	5.0	5.5	8.0	Adjustable restrictor setting	8.0	5.5	5.0	5.0	5.5	8.0	54.6
Avg 0.48	21.00	21.00	20.99	18.90	18.10	17.88	Combustion index	17.42	17.57	18.09	19.69	21.00	21.00	
Avg 691	0.36	0.52	0.47	0.42	0.52	0.60	Burner tip temp	0.76	0.37	0.21	0.24	0.35	0.46	0.40 Avg
Avg 508	680	692	717	681	703	676	Burner body temp	705	817	669	799	655	683	721 Avg
Avg 104	532	518	490	491	509	509	IBAMs flow KPPH	515	522	526	507	500	507	513 Avg
Total 626	100	94	104	101	120	106		109	108	96	93	98	95	100 Avg
	80.0 West	SA damper Position			East	78.9	PSH Dmpr 100.0	78.6 West	SA damper Position			East	78.5	599 Total
							RH Dmpr 30.0							

Windbox press 1.60	F6	F5	F4	F3	F2	F1	Spin Vane setting	C6	C5	C4	C3	C2	C1	Windbox press 3.45
I/S, coal flow	4.00	3.00	3.00	4.00	4.00	4.00	Outer register setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow
0.0	5.5	6.0	5.0	5.0	5.5	5.5	Adjustable restrictor setting	8.0	5.5	5.0	5.0	5.5	8.0	53.6
Avg 0.00	17.85	17.85	18.21	20.09	21.00	21.00	Combustion index	21.00	21.00	20.41	19.24	18.76	17.31	
Avg 1292	0.00	0.00	0.00	0.00	0.00	0.00	Burner tip temp	0.66	0.45	0.56	0.35	0.41	0.56	0.50 Avg
Avg 847	1317	1425	1338	1241	1119	1311	Burner body temp	689	691	671	768	668	673	693 Avg
Avg 78	819	855	835	891	850	831	IBAMs flow KPPH	492	498	495	526	510	497	503 Avg
Total 470	87	67	73	87	70	85		113	103	94	98	103	112	104 Avg
	36.1 West	SA damper Position			East	36.2	Duct Press actual 53.4 target 51.6	78.5 West	SA damper Position			East	78.3	623 Total

Windbox press 2.95	B6	B5	B4	B3	B2	B1	Spin Vane setting	G6	G5	G4	G3	G2	G1	Windbox press 3.17
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Outer register setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow
52.7	9.0	5.5	5.0	5.0	5.5	9.0	Adjustable restrictor setting	9.0	5.5	5.0	5.0	5.5	9.0	54.5
Avg 0.40	21.00	21.00	20.19	18.70	18.15	17.75	Combustion index	17.00	17.97	18.35	20.75	21.00	21.00	
Avg 669	0.75	0.66	0.00	0.51	0.45	0.00	Burner tip temp	0.60	0.72	0.68	0.52	0.77	0.69	0.66 Avg
Avg 506	661	641	645	663	681	726	Burner body temp	664	616	596	672	632	666	641 Avg
Avg 89	522	522	511	475	484	520	IBAMs flow KPPH	522	508	491	503	508	492	504 Avg
Total 533	128	2	104	107	79	114		98	85	105	99	92	111	98 Avg
	78.6 West	SA damper Position			East	78.4	4806 Total SA flow	78.1 West	SA damper Position			East	78.5	590 Total

Drum Level -0.06 Avg
0.81 West 0.10 Middle -4.53 East

-0.54 Furnace Press

Previous

U2 O2 Trends

East % O2				
6'	2.7	3.9	5.3	E A
13'	1.7	2.1	4.0	F B
18'	2.2	2.8	3.3	G C
Ave		3.09	% O2	H D

West % O2				
6'	3.9	3.0	3.1	E A
13'	3.6	1.7	2.3	F B
18'	0.0	2.6	2.9	G C
Ave		2.90	% O2	H D

O2 Actual	3.00
O2 Target	2.99
NOx Actual	0.416
NOx Target	0.425

West		East
712	SA Air Temp	705
5.5	SA Duct Pr	5.0
730	Exit Gas Temp	754
2.90	Econ O2 %	3.09
0.81	Drum Level	-4.53
729	1st stg inlet t	725
92	1st stg sprays	30
712	1st stg outlet t	712
784	2nd stg inlet t	785
65	2nd stg sprays	85
766	2nd stg outlet t	765

65.4 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 952 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 950 MW | Menu | AQCS | Coal Yard | Common | 07-May-08 12:39:40 | IPSC

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Previous

948.90 mw
374.86 tph

O2 West 3.25 O2 East 2.54

Windbox press 3.02	E6	E5	E4	E3	E2	E1	
I/S, coal flow 54.3	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.54	0.64	0.49	0.63	0.53	0.45	0.52	Combustion index
Avg 668	696	665	617	718	682	628	Burner tip temp
Avg 507	509	509	501	497	507	518	Burner body temp
Avg 94	93	98	99	93	89	93	IBAMs flow KPPH
Total 566	78.6 West	SA damper Position			East	79.3	

Windbox press 2.71	A6	A5	A4	A3	A2	A1	
I/S, coal flow 54.2	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.48	0.33	0.53	0.48	0.43	0.44	0.66	Combustion index
Avg 688	675	685	715	678	700	672	Burner tip temp
Avg 500	522	510	481	487	501	501	Burner body temp
Avg 101	95	90	103	99	115	102	IBAMs flow KPPH
Total 603	79.0 West	SA damper Position			East	79.2	

PSH Dmpr 92.2 RH Dmpr 36.8

Windbox press 1.08	F6	F5	F4	F3	F2	F1	
I/S, coal flow 0.0	4.00	3.00	3.00	4.00	4.00	4.00	Spin Vane setting
	5.5	6.0	5.5	5.5	5.5	5.5	Outer register setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00	Combustion index
Avg 1308	1318	1443	1350	1262	1132	1346	Burner tip temp
Avg 850	814	858	835	898	859	837	Burner body temp
Avg 75	84	64	71	84	67	82	IBAMs flow KPPH
Total 452	36.1 West	SA damper Position			East	36.2	

Duct Press actual 53.4 target 50.9

Windbox press 2.31	B6	B5	B4	B3	B2	B1	
I/S, coal flow 52.8	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.38	0.72	0.67	0.00	0.49	0.42	0.00	Combustion index
Avg 668	654	647	643	679	669	716	Burner tip temp
Avg 499	515	514	506	470	477	512	Burner body temp
Avg 86	122	2	101	102	78	109	IBAMs flow KPPH
Total 514	78.2 West	SA damper Position			East	77.5	

4772 Total SA flow

-0.67 Furnace Press

Drum Level -0.11 Avg
0.56 West -0.14 Middle -4.67 East

O2 West 3.25 O2 East 2.54

Windbox press 2.48	D6	D5	D4	D3	D2	D1	
I/S, coal flow 53.4	4.00	4.00	4.00	4.00	3.50	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.52 Avg	0.40	0.71	0.51	0.51	0.44	0.56	Combustion index
714 Avg	711	675	730	717	770	683	Burner tip temp
505 Avg	505	493	509	512	481	531	Burner body temp
75 Avg	103	89	92	97	67	4	IBAMs flow KPPH
452 Total	78.1 West	SA damper Position			East	78.5	

Windbox press 2.68	H6	H5	H4	H3	H2	H1	
I/S, coal flow 53.8	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.38 Avg	0.72	0.43	0.22	0.16	0.30	0.43	Combustion index
717 Avg	677	816	679	794	654	680	Burner tip temp
507 Avg	504	514	525	503	493	500	Burner body temp
96 Avg	105	103	93	92	93	91	IBAMs flow KPPH
577 Total	78.2 West	SA damper Position			East	78.1	

Windbox press 2.79	C6	C5	C4	C3	C2	C1	
I/S, coal flow 53.6	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.50 Avg	0.65	0.44	0.60	0.41	0.41	0.49	Combustion index
688 Avg	684	689	663	760	661	672	Burner tip temp
495 Avg	483	492	489	519	502	488	Burner body temp
100 Avg	108	98	94	96	98	108	IBAMs flow KPPH
602 Total	78.0 West	SA damper Position			East	78.9	

Windbox press 2.54	G6	G5	G4	G3	G2	G1	
I/S, coal flow 53.5	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.68 Avg	0.61	0.75	0.75	0.53	0.76	0.70	Combustion index
636 Avg	669	606	588	662	628	665	Burner tip temp
498 Avg	511	501	494	497	502	486	Burner body temp
94 Avg	94	81	100	95	88	106	IBAMs flow KPPH
563 Total	78.8 West	SA damper Position			East	78.7	

U2 O2 Trends

East % O2

6'	2.0	3.2	4.4	E A
13'	0.9	2.2	3.3	F B
18'	1.2	2.7	2.9	G C
		2.54	% O2	H D

Ave

West % O2

6'	4.6	3.7	2.9	E A
13'	3.7	3.4	2.2	F B
18'	0.0	3.5	2.7	G C
Ave		3.25	% O2	H D

O2 Actual	2.90
O2 Target	2.97
NOx Actual	0.403
NOx Target	0.411

West		East
703	SA Air Temp	698
4.9	SA Duct Pr	4.4
725	Exit Gas Temp	749
3.25	Econ O2 %	2.54
0.56	Drum Level	-4.67
724	1st stg inlet t	723
68	1st stg sprays	26
713	1st stg outlet t	712
782	2nd stg inlet t	785
61	2nd stg sprays	84
766	2nd stg outlet t	767

57.3 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 949 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 949 MW | Menu | AQCS | Coal Yard | Common | 07-May-08 10:04:11 | IPSC

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Previous

950.98 mw
392.75 tph

O2 West 2.82 | O2 East 2.55

Windbox press 3.34	E6	E5	E4	E3	E2	E1	
I/S, coal flow 56.5	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.53	0.67	0.51	0.57	0.50	0.43	0.48	Combustion index
Avg 682	695	665	636	769	696	628	Burner tip temp
Avg 513	516	517	512	500	512	522	Burner body temp
Avg 96	95	101	102	96	90	95	IBAMs flow KPPH
Total 579	82.7 West	SA damper Position			East	81.7	

Windbox press 3.01	A6	A5	A4	A3	A2	A1	
I/S, coal flow 56.5	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.47	0.30	0.47	0.51	0.43	0.53	0.55	Combustion index
Avg 698	682	711	723	678	709	682	Burner tip temp
Avg 508	530	519	490	494	508	508	Burner body temp
Avg 103	97	93	106	101	119	104	IBAMs flow KPPH
Total 619	81.1 West	SA damper Position			East	82.8	

PSH Dmpr 78.1 | RH Dmpr 49.2

Windbox press 2.86	F6	F5	F4	F3	F2	F1	
I/S, coal flow 0.0	4.00	3.00	3.00	4.00	4.00	4.00	Spin Vane setting
	5.5	6.0	5.5	5.5	5.5	5.5	Outer register setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.03	Combustion index
Avg 1250	1256	1381	1312	1203	1092	1254	Burner tip temp
Avg 837	807	836	822	882	851	822	Burner body temp
Avg 92	101	81	86	103	82	100	IBAMs flow KPPH
Total 554	60.0 West	SA damper Position			East	59.9	

Duct Press actual 53.9 | target 51.7

Windbox press 2.72	B6	B5	B4	B3	B2	B1	
I/S, coal flow 55.1	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.39	0.72	0.62	0.00	0.46	0.56	0.00	Combustion index
Avg 682	647	654	653	759	668	714	Burner tip temp
Avg 509	528	524	517	480	484	521	Burner body temp
Avg 88	126	2	105	109	76	114	IBAMs flow KPPH
Total 531	81.0 West	SA damper Position			East	81.8	

4711 Total SA flow

-0.34 Furnace Press

Drum Level -1.06 Avg
-0.34 West -1.06 Middle -6.55 East

O2 West 2.82 | O2 East 2.55

Windbox press 2.80	D6	D5	D4	D3	D2	D1	
I/S, coal flow 55.5	4.00	4.00	4.00	4.00	3.50	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.52 Avg	0.37	0.65	0.57	0.56	0.37	0.59	Combustion index
729 Avg	718	683	751	730	798	692	Burner tip temp
512 Avg	509	501	521	520	488	533	Burner body temp
80 Avg	105	91	95	99	84	4	IBAMs flow KPPH
479 Total	80.8 West	SA damper Position			East	82.2	

Windbox press 3.03	H6	H5	H4	H3	H2	H1	
I/S, coal flow 55.8	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.51 Avg	0.65	0.56	0.66	0.51	0.42	0.27	Combustion index
693 Avg	675	737	648	722	654	724	Burner tip temp
513 Avg	511	520	530	509	499	509	Burner body temp
99 Avg	107	106	96	94	96	94	IBAMs flow KPPH
593 Total	83.1 West	SA damper Position			East	81.1	

Windbox press 3.15	C6	C5	C4	C3	C2	C1	
I/S, coal flow 55.7	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	7.0	Outer register setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.54 Avg	0.67	0.48	0.68	0.57	0.45	0.39	Combustion index
691 Avg	703	706	679	688	669	700	Burner tip temp
502 Avg	490	498	493	526	509	495	Burner body temp
102 Avg	110	101	95	98	101	109	IBAMs flow KPPH
614 Total	82.5 West	SA damper Position			East	81.6	

Windbox press 2.96	G6	G5	G4	G3	G2	G1	
I/S, coal flow 56.3	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.63 Avg	0.52	0.79	0.69	0.53	0.66	0.60	Combustion index
651 Avg	670	629	600	679	650	677	Burner tip temp
505 Avg	519	510	499	503	506	492	Burner body temp
96 Avg	97	83	103	98	91	107	IBAMs flow KPPH
579 Total	83.0 West	SA damper Position			East	81.8	

U2 O2 Trends

East % O2				
6'	2.2	3.0	4.3	E A
13'	1.4	2.3	3.4	F B
18'	1.6	2.4	2.5	G C
Ave		2.55	% O2	H D

West % O2				
6'	4.0	3.1	2.1	E A
13'	3.4	3.1	1.7	F B
18'	0.0	3.3	1.6	G C
Ave		2.82	% O2	H D

O2 Actual 2.68
O2 Target 2.98
NOx Actual 0.388
NOx Target 0.415

West		East
713	SA Air Temp	706
5.2	SA Duct Pr	4.7
733	Exit Gas Temp	759
2.82	Econ O2 %	2.55
-0.34	Drum Level	-6.55
726	1st stg inlet t	719
101	1st stg sprays	18
709	1st stg outlet t	712
783	2nd stg inlet t	785
84	2nd stg sprays	110
759	2nd stg outlet t	760

74.4 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 952 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 951 MW | Menu | AQCS | Coal Yard | Common | 05-May-08 12:56:41 IPSC

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949.52 mw
396.70 tph

O2 West 2.61 | O2 East 2.93

Windbox press 3.29	E6	E5	E4	E3	E2	E1	
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
56.2	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.52	0.58	0.48	0.64	0.55	0.39	0.49	Combustion index
Avg 702	771	673	651	770	709	635	Burner tip temp
Avg 517	522	521	513	504	516	527	Burner body temp
Avg 96	95	101	102	97	89	94	IBAMs flow KPPH
Total 579	82.2 West	SA damper Position			East	82.8	

Windbox press 2.97	A6	A5	A4	A3	A2	A1	
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
56.9	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.48	0.31	0.44	0.60	0.40	0.51	0.60	Combustion index
Avg 705	693	722	709	694	722	690	Burner tip temp
Avg 512	535	523	492	497	513	513	Burner body temp
Avg 103	97	93	105	101	119	104	IBAMs flow KPPH
Total 617	82.6 West	SA damper Position			East	83.3	

PSH Dmpr 99.7 | RH Dmpr 30.3

Windbox press 2.81	F6	F5	F4	F3	F2	F1	
I/S, coal flow	4.00	3.00	3.00	4.00	4.00	4.00	Spin Vane setting
0.0	5.5	6.0	5.5	5.5	5.5	5.5	Outer register setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00	Combustion index
Avg 1268	1268	1397	1327	1220	1103	1292	Burner tip temp
Avg 845	812	841	827	889	863	838	Burner body temp
Avg 92	101	81	85	103	82	99	IBAMs flow KPPH
Total 550	60.0 West	SA damper Position			East	60.0	

Duct Press actual 53.4 | target 52.8

Windbox press 2.67	B6	B5	B4	B3	B2	B1	
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
54.5	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.39	0.65	0.60	0.00	0.50	0.58	0.00	Combustion index
Avg 685	653	661	662	707	683	743	Burner tip temp
Avg 512	531	527	520	481	488	527	Burner body temp
Avg 88	125	2	104	108	76	112	IBAMs flow KPPH
Total 527	83.2 West	SA damper Position			East	81.7	

4771 Total SA flow

-0.55 Furnace Press

Drum Level -1.17 Avg
-0.59 West -1.36 Middle -1.13 East

O2 West 2.61 | O2 East 2.93

Windbox press 2.80	D6	D5	D4	D3	D2	D1	
I/S, coal flow	4.00	4.00	4.00	4.00	3.50	3.50	Spin Vane setting
56.2	7.0	5.5	5.5	5.5	5.5	6.0	Outer register setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.50 Avg	0.33	0.59	0.57	0.52	0.43	0.58	Combustion index
746 Avg	735	696	766	743	831	703	Burner tip temp
513 Avg	513	504	518	526	492	526	Burner body temp
78 Avg	103	90	95	99	79	4	IBAMs flow KPPH
470 Total	83.0 West	SA damper Position			East	83.6	

Windbox press 2.99	H6	H5	H4	H3	H2	H1	
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
57.1	7.0	5.5	5.5	5.5	5.5	6.0	Outer register setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.51 Avg	0.62	0.52	0.73	0.50	0.46	0.25	Combustion index
700 Avg	683	742	656	737	658	725	Burner tip temp
516 Avg	513	524	532	513	503	513	Burner body temp
98 Avg	106	106	96	94	96	92	IBAMs flow KPPH
590 Total	82.3 West	SA damper Position			East	83.0	

Windbox press 3.09	C6	C5	C4	C3	C2	C1	
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
56.4	7.0	5.5	5.5	5.5	5.5	6.0	Outer register setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.53 Avg	0.62	0.50	0.73	0.51	0.46	0.34	Combustion index
701 Avg	718	704	683	704	682	712	Burner tip temp
506 Avg	493	500	496	528	515	503	Burner body temp
102 Avg	109	101	95	97	101	107	IBAMs flow KPPH
610 Total	82.6 West	SA damper Position			East	82.4	

Windbox press 2.83	G6	G5	G4	G3	G2	G1	
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
56.4	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.63 Avg	0.56	0.80	0.68	0.52	0.63	0.59	Combustion index
657 Avg	675	634	604	683	658	686	Burner tip temp
507 Avg	522	512	502	504	510	495	Burner body temp
96 Avg	96	82	101	98	91	108	IBAMs flow KPPH
576 Total	82.4 West	SA damper Position			East	82.6	

U2 O2 Trends

East % O2

	E	A	F	B	G	C	H	D
6'	2.8	3.5	4.5					
13'	2.3	2.1	3.4					
18'	2.5	2.5	2.7					

Ave 2.93 % O2

West % O2

	E	A	F	B	G	C	H	D
6'	4.5	2.6	1.5					
13'	4.4	1.6	1.0					
18'	0.0	2.2	2.1					

Ave 2.61 % O2

O2 Actual	2.72
O2 Target	2.99
NOx Actual	0.390
NOx Target	0.407

West		East
722	SA Air Temp	717
5.1	SA Duct Pr	4.8
743	Exit Gas Temp	768
2.61	Econ O2 %	2.93
-0.59	Drum Level	-1.13
734	1st stg inlet t	735
125	1st stg sprays	49
713	1st stg outlet t	710
785	2nd stg inlet t	783
38	2nd stg sprays	24
780	2nd stg outlet t	775

63.2 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 948 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 950 MW | Menu | AQCS | Coal Yard | Common | 05-May-08 09:51:41 | IPSC

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to #3

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Previous

945.63 mw
360.46 tph

O2 West 3.01 | O2 East 3.17

Windbox press 3.44	E6	E5	E4	E3	E2	E1	
I/S, coal flow 52.0	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.51	0.65	0.37	0.70	0.42	0.41	0.49	Combustion index
Avg 703	730	709	646	759	740	638	Burner tip temp
Avg 521	525	524	521	508	518	530	Burner body temp
Avg 98	96	102	104	97	91	96	IBAMs flow KPPH
Total 588	76.2 West	SA damper Position			East	76.2	

Windbox press 3.09	A6	A5	A4	A3	A2	A1	
I/S, coal flow 52.0	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.47	0.33	0.49	0.54	0.42	0.48	0.55	Combustion index
Avg 723	699	746	745	698	734	719	Burner tip temp
Avg 515	539	527	497	500	515	514	Burner body temp
Avg 104	99	94	105	102	120	105	IBAMs flow KPPH
Total 627	75.2 West	SA damper Position			East	76.4	

PSH Dmpr 98.4 | RH Dmpr 31.5

Windbox press 2.48	F6	F5	F4	F3	F2	F1	
I/S, coal flow 0.0	4.00	3.00	3.00	4.00	4.00	4.00	Spin Vane setting
	5.5	6.0	5.5	5.5	5.5	5.5	Outer register setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.00	0.00	0.00	0.03	0.00	0.00	0.00	Combustion index
Avg 1278	1259	1398	1385	1232	1122	1268	Burner tip temp
Avg 849	810	835	850	895	863	840	Burner body temp
Avg 90	99	78	86	101	79	96	IBAMs flow KPPH
Total 539	49.1 West	SA damper Position			East	49.3	

Duct Press actual 51.3 | target 50.6

Windbox press 2.73	B6	B5	B4	B3	B2	B1	
I/S, coal flow 50.7	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.39	0.66	0.66	0.00	0.46	0.51	0.00	Combustion index
Avg 694	665	662	680	746	687	727	Burner tip temp
Avg 515	533	530	524	483	487	531	Burner body temp
Avg 86	126	2	103	109	65	111	IBAMs flow KPPH
Total 518	76.8 West	SA damper Position			East	75.5	

4722 Total SA flow

-0.50 Furnace Press

Drum Level -2.28 Avg
-1.44 West -2.31 Middle -8.98 East

O2 West 3.01 | O2 East 3.17

Windbox press 3.07	D6	D5	D4	D3	D2	D1	
I/S, coal flow 51.2	4.00	4.00	4.00	4.00	3.50	3.50	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	6.0	Outer register setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.49 Avg	0.42	0.41	0.65	0.52	0.37	0.55	Combustion index
748 Avg	751	719	752	736	830	698	Burner tip temp
519 Avg	522	512	533	522	494	529	Burner body temp
81 Avg	106	93	95	101	84	4	IBAMs flow KPPH
487 Total	76.2 West	SA damper Position			East	76.8	

Windbox press 3.17	H6	H5	H4	H3	H2	H1	
I/S, coal flow 52.3	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	6.0	Outer register setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.53 Avg	0.57	0.55	0.65	0.51	0.55	0.28	Combustion index
719 Avg	694	778	679	759	690	716	Burner tip temp
520 Avg	520	526	538	516	506	514	Burner body temp
99 Avg	108	107	99	96	95	94	IBAMs flow KPPH
597 Total	76.1 West	SA damper Position			East	75.8	

Windbox press 3.24	C6	C5	C4	C3	C2	C1	
I/S, coal flow 50.8	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	6.0	Outer register setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.48 Avg	0.48	0.38	0.70	0.46	0.39	0.39	Combustion index
716 Avg	744	731	705	706	706	708	Burner tip temp
510 Avg	497	507	502	530	518	505	Burner body temp
104 Avg	111	102	96	99	103	109	IBAMs flow KPPH
623 Total	75.5 West	SA damper Position			East	75.4	

Windbox press 3.08	G6	G5	G4	G3	G2	G1	
I/S, coal flow 51.8	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.69 Avg	0.58	0.84	0.72	0.59	0.66	0.58	Combustion index
661 Avg	662	652	622	657	665	706	Burner tip temp
510 Avg	525	517	508	505	511	494	Burner body temp
97 Avg	98	84	103	99	92	110	IBAMs flow KPPH
584 Total	75.9 West	SA damper Position			East	76.1	

U2 O2 Trends

East % O2

6'	3.0	4.1	4.1	E A
13'	1.7	2.5	3.9	F B
18'	2.1	3.4	3.8	G C
Ave		3.17	% O2	H D

West % O2

6'	4.1	3.0	3.0	E A
13'	4.2	1.8	2.4	F B
18'	0.0	2.5	3.0	G C
Ave		3.01	% O2	H D

O2 Actual 3.07
O2 Target 2.98
NOx Actual 0.452
NOx Target 0.461

West		East
721	SA Air Temp	712
5.5	SA Duct Pr	5.1
741	Exit Gas Temp	765
3.01	Econ O2 %	3.17
-1.44	Drum Level	-8.98
730	1st stg inlet t	728
91	1st stg sprays	19
711	1st stg outlet t	717
785	2nd stg inlet t	796
45	2nd stg sprays	103
770	2nd stg outlet t	772

54.9 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 947 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 946 MW | Menu | AQCS | Coal Yard | Common | 02-May-08 14:19:39 | IPSC

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13 40

3 ...
to # 2

Next

947.39 mw
360.52 tph

O2 West 3.05 | O2 East 2.76

Windbox press 3.45	E6	E5	E4	E3	E2	E1	
I/S, coal flow 51.5	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.50	0.67	0.35	0.69	0.47	0.40	0.45	Combustion index
Avg 704	733	704	642	769	738	639	Burner tip temp
Avg 520	524	523	520	508	517	529	Burner body temp
Avg 98	97	103	104	98	91	97	IBAMs flow KPPH
Total 589	76.3 West	SA damper Position			East	75.3	

Windbox press 3.09	A6	A5	A4	A3	A2	A1	
I/S, coal flow 52.1	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.49	0.35	0.52	0.53	0.43	0.50	0.60	Combustion index
Avg 721	696	743	742	696	731	717	Burner tip temp
Avg 514	538	526	496	498	514	513	Burner body temp
Avg 105	99	94	107	102	120	106	IBAMs flow KPPH
Total 628	76.7 West	SA damper Position			East	76.1	

PSH Dmpr 93.7 | RH Dmpr 35.5

Windbox press 2.47	F6	F5	F4	F3	F2	F1	
I/S, coal flow 0.0	4.00	3.00	3.00	4.00	4.00	4.00	Spin Vane setting
	5.5	5.5	5.5	5.5	5.5	5.5	Outer register setting
	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00	Combustion index
Avg 1270	1254	1400	1384	1228	1099	1257	Burner tip temp
Avg 847	806	835	849	894	862	839	Burner body temp
Avg 90	99	77	86	101	80	97	IBAMs flow KPPH
Total 539	49.1 West	SA damper Position			East	49.3	

Duct Press actual 51.0 | target 50.9

Windbox press 2.66	B6	B5	B4	B3	B2	B1	
I/S, coal flow 50.2	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.40	0.65	0.69	0.00	0.57	0.51	0.00	Combustion index
Avg 694	664	661	678	737	687	735	Burner tip temp
Avg 514	531	529	523	482	487	530	Burner body temp
Avg 86	126	2	104	107	66	112	IBAMs flow KPPH
Total 517	76.9 West	SA damper Position			East	76.3	

4732 Total SA flow
-0.55 Furnace Press

Drum Level -1.11 Avg
-0.39 West -1.06 Middle -7.25 East

O2 West 3.05 | O2 East 2.76

Windbox press 2.95	D6	D5	D4	D3	D2	D1	
I/S, coal flow 51.1	4.00	4.00	4.00	4.00	3.50	3.50	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	5.5	Outer register setting
	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.49 Avg	0.52	0.41	0.59	0.48	0.42	0.54	Combustion index
745 Avg	746	718	750	735	823	696	Burner tip temp
516 Avg	520	511	530	522	493	524	Burner body temp
82 Avg	106	93	95	101	92	4	IBAMs flow KPPH
492 Total	75.3 West	SA damper Position			East	76.5	

Windbox press 3.14	H6	H5	H4	H3	H2	H1	
I/S, coal flow 52.8	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	5.5	Outer register setting
	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.54 Avg	0.63	0.56	0.70	0.50	0.55	0.28	Combustion index
718 Avg	691	779	677	758	690	713	Burner tip temp
518 Avg	518	525	535	515	505	509	Burner body temp
100 Avg	108	107	99	95	96	93	IBAMs flow KPPH
598 Total	75.7 West	SA damper Position			East	75.5	

Windbox press 3.20	C6	C5	C4	C3	C2	C1	
I/S, coal flow 51.3	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	7.0	5.5	5.5	5.5	5.5	5.5	Outer register setting
	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.47 Avg	0.62	0.37	0.65	0.43	0.40	0.38	Combustion index
717 Avg	744	729	707	705	706	714	Burner tip temp
508 Avg	496	506	501	528	516	504	Burner body temp
104 Avg	111	103	97	99	103	108	IBAMs flow KPPH
622 Total	75.5 West	SA damper Position			East	75.4	

Windbox press 2.98	G6	G5	G4	G3	G2	G1	
I/S, coal flow 51.8	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.67 Avg	0.55	0.81	0.74	0.64	0.64	0.61	Combustion index
660 Avg	659	650	621	657	668	705	Burner tip temp
509 Avg	523	516	507	504	510	493	Burner body temp
98 Avg	98	84	104	99	92	110	IBAMs flow KPPH
588 Total	76.6 West	SA damper Position			East	76.3	

Previous

U2 O2 Trends

East % O2

6'	2.3	3.4	3.9	E A
13'	1.8	2.1	3.5	F B
18'	2.1	2.5	3.2	G C
		2.76	% O2	H D

Ave

West % O2

6'	3.8	2.5	2.9	E A
13'	4.0	2.1	2.9	F B
18'	0.0	2.8	3.5	G C
Ave		3.05	% O2	H D

O2 Actual	2.86
O2 Target	2.98
NOx Actual	0.454
NOx Target	0.435

West		East
720	SA Air Temp	710
5.4	SA Duct Pr	5.0
740	Exit Gas Temp	761
3.05	Econ O2 %	2.76
-0.39	Drum Level	-7.25
730	1st stg inlet t	722
111	1st stg sprays	19
708	1st stg outlet t	712
785	2nd stg inlet t	787
37	2nd stg sprays	58
769	2nd stg outlet t	769

52.7 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 950 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 947 MW | Menu | AQCS | Coal Yard | Common | 02-May-08 13:19:39 | IPSC

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Previous

945.14 mw
367.05 tph

O2 West 2.93 O2 East 2.70

Windbox press 3.39	E6	E5	E4	E3	E2	E1
I/S, coal flow 52.2	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	8.0
	17.88	18.10	18.90	20.99	21.00	21.00
Avg 0.49	0.63	0.34	0.64	0.43	0.41	0.55
Avg 699	704	705	654	769	727	633
Avg 515	520	521	516	502	511	521
Avg 97	96	102	104	97	90	95
Total 582	76.1 West	SA damper Position			East	75.3

Windbox press 2.96	A6	A5	A4	A3	A2	A1
I/S, coal flow 52.6	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	8.0
	21.00	21.00	20.99	18.90	18.10	17.88
Avg 0.45	0.28	0.57	0.52	0.37	0.47	0.56
Avg 709	689	716	733	690	721	704
Avg 508	532	521	493	492	507	506
Avg 104	98	93	105	102	119	105
Total 622	77.0 West	SA damper Position			East	76.8

Windbox press 3.21	F6	F5	F4	F3	F2	F1
I/S, coal flow 0.0	4.00	4.00	4.00	4.00	4.00	4.00
	5.5	5.5	5.5	5.5	5.5	5.5
	17.85	17.85	18.21	20.09	21.00	21.00
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avg 1267	1294	1404	1383	1200	1089	1231
Avg 841	802	829	850	882	854	828
Avg 101	105	98	104	108	87	104
Total 606	74.6 West	SA damper Position			East	74.5

Windbox press 2.68	B6	B5	B4	B3	B2	B1
I/S, coal flow 51.9	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	5.5	5.5	5.5	5.5	9.0
	21.00	21.00	20.19	18.70	18.15	17.75
Avg 0.36	0.51	0.64	0.00	0.51	0.53	0.00
Avg 694	683	665	679	746	668	720
Avg 511	529	525	521	485	481	525
Avg 87	127	2	104	109	69	113
Total 522	75.6 West	SA damper Position			East	76.6

Drum Level -1.37 Avg
-0.48 West -1.34 Middle -4.55 East

Spin Vane setting	
Outer register setting	
Adjustable restrictor setting	
Combustion index	
Burner tip temp	
Burner body temp	
IBAMs flow KPPH	
PSH Dmpr	RH Dmpr
79.7	47.5
Duct Press actual	target
51.2	51.1
Total SA flow	4777
Furnace Press	-0.54

O2 West 2.93 O2 East 2.70

D6	D5	D4	D3	D2	D1	Windbox press 2.87
4.00	4.00	4.00	4.00	3.00	3.00	I/S, coal flow 52.2
8.0	5.5	5.5	5.5	5.5	5.5	
21.00	21.00	19.69	18.09	17.57	17.42	
0.52	0.33	0.56	0.49	0.37	0.50	0.46 Avg
743	728	754	728	838	692	747 Avg
512	507	522	515	485	517	510 Avg
107	92	95	100	85	4	82 Avg
77.3 West	SA damper Position			East	76.8	491 Total

H6	H5	H4	H3	H2	H1	Windbox press 2.96
4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 53.3
8.0	5.5	5.5	5.5	5.5	5.5	
17.42	17.57	18.09	19.69	21.00	21.00	
0.60	0.54	0.68	0.49	0.49	0.27	0.51 Avg
683	797	680	756	685	713	719 Avg
515	523	531	508	499	502	513 Avg
108	106	97	94	93	91	98 Avg
75.8 West	SA damper Position			East	75.7	591 Total

C6	C5	C4	C3	C2	C1	Windbox press 3.09
4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 52.7
8.0	5.5	5.5	5.5	5.5	5.5	
21.00	21.00	20.41	19.24	18.76	17.31	
0.53	0.35	0.66	0.46	0.45	0.35	0.47 Avg
742	728	694	703	702	709	713 Avg
493	501	497	522	509	499	503 Avg
112	102	96	99	103	107	103 Avg
76.3 West	SA damper Position			East	76.9	616 Total

G6	G5	G4	G3	G2	G1	Windbox press 2.81
4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 52.5
9.0	5.5	5.5	5.5	5.5	9.0	
17.00	17.97	18.35	20.75	21.00	21.00	
0.56	0.82	0.72	0.60	0.64	0.58	0.66 Avg
657	652	619	659	660	702	658 Avg
519	513	503	497	504	485	504 Avg
97	83	103	99	92	109	97 Avg
76.4 West	SA damper Position			East	75.4	582 Total

U2 O2 Trends

East % O2

6'	2.1	3.0	4.1	E A
13'	1.8	2.7	3.2	F B
18'	1.9	2.7	2.7	G C
		2.70	% O2	H D

Ave

West % O2

6'	4.1	2.7	2.8	E A
13'	4.3	2.1	2.1	F B
18'	0.0	3.2	2.1	G C
Ave		2.93	% O2	H D

O2 Actual 2.81
O2 Target 2.99

NOx Actual 0.437
NOx Target 0.426

West		East
716	SA Air Temp	702
5.3	SA Duct Pr	4.9
741	Exit Gas Temp	760
2.93	Econ O2 %	2.70
-0.48	Drum Level	-4.55

38.4 Weather I/O
Temp F Plant Overview

Main Menu
Utilities

Unit 1 951 MW
Menu AQCS

U2 BURNER OVRWS
Burner Fronts

Unit 2 945 MW
Menu AQCS

Coal Yard
Common

02-May-08 09:04:10
IPSC

IP7021660

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Next

Previous

946.39 mw
370.64 tph

O2 West 2.29 O2 East 3.38

Windbox press 5.65	E6	E5	E4	E3	E2	E1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
52.9	17.88	18.10	18.90	20.99	21.00	21.00	Adjustable restrictor setting
Avg 0.50	0.61	0.33	0.53	0.52	0.49	0.53	Combustion index
Avg 697	700	700	654	774	725	627	Burner tip temp
Avg 512	518	518	514	500	508	518	Burner body temp
Avg 103	101	107	109	103	96	100	IBAMs flow KPPH
Total 616	77.0 West	SA damper Position			East	77.7	

Windbox press 5.43	A6	A5	A4	A3	A2	A1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
53.5	21.00	21.00	20.99	18.90	18.10	17.88	Adjustable restrictor setting
Avg 0.45	0.31	0.52	0.51	0.37	0.45	0.52	Combustion index
Avg 708	684	720	731	689	723	704	Burner tip temp
Avg 506	531	518	490	490	504	503	Burner body temp
Avg 109	103	98	111	107	125	111	IBAMs flow KPPH
Total 655	76.8 West	SA damper Position			East	76.4	

PSH Dmpr 64.0 RH Dmpr 63.5

Windbox press 5.55	F6	F5	F4	F3	F2	F1	
	4.00	3.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	5.5	5.5	5.5	5.5	5.5	5.5	Outer register setting
0.0	17.85	17.85	18.21	20.09	21.00	21.00	Adjustable restrictor setting
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00	Combustion index
Avg 1269	1250	1371	1378	1224	1133	1260	Burner tip temp
Avg 840	797	819	848	884	859	834	Burner body temp
Avg 103	111	88	108	113	91	110	IBAMs flow KPPH
Total 620	69.1 West	SA damper Position			East	69.4	

Duct Press actual 51.2 target 51.5

Windbox press 5.28	B6	B5	B4	B3	B2	B1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
52.1	21.00	21.00	20.19	18.70	18.15	17.75	Adjustable restrictor setting
Avg 0.40	0.51	0.67	0.00	0.50	0.74	0.00	Combustion index
Avg 688	676	658	677	738	647	736	Burner tip temp
Avg 508	528	525	518	480	478	522	Burner body temp
Avg 92	133	2	110	114	71	119	IBAMs flow KPPH
Total 549	76.3 West	SA damper Position			East	76.8	

4889 Total SA flow

-0.57 Furnace Press

Drum Level -2.92 Avg
-1.95 West -2.95 Middle -5.28 East

O2 West 2.29 O2 East 3.38

Windbox press 5.35	D6	D5	D4	D3	D2	D1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	5.5	5.5	5.5	5.5	5.5	5.5	Outer register setting
52.9	21.00	21.00	19.69	18.09	17.57	17.42	Adjustable restrictor setting
0.48 Avg	0.31	0.40	0.65	0.55	0.42	0.54	Combustion index
744 Avg	747	719	744	721	846	685	Burner tip temp
514 Avg	529	511	530	513	482	521	Burner body temp
68 Avg	100	97	99	107	2	4	IBAMs flow KPPH
410 Total	74.8 West	SA damper Position			East	76.7	

Windbox press 5.49	H6	H5	H4	H3	H2	H1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	5.5	5.5	5.5	5.5	5.5	5.5	Outer register setting
53.7	17.42	17.57	18.09	19.69	21.00	21.00	Adjustable restrictor setting
0.52 Avg	0.58	0.58	0.66	0.52	0.57	0.24	Combustion index
716 Avg	685	795	676	749	683	708	Burner tip temp
511 Avg	509	522	531	506	496	501	Burner body temp
103 Avg	107	112	103	101	98	97	IBAMs flow KPPH
618 Total	77.0 West	SA damper Position			East	77.4	

Windbox press 5.57	C6	C5	C4	C3	C2	C1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	5.5	5.5	5.5	5.5	5.5	5.5	Outer register setting
52.5	21.00	21.00	20.41	19.24	18.76	17.31	Adjustable restrictor setting
0.46 Avg	0.42	0.37	0.72	0.47	0.42	0.35	Combustion index
708 Avg	748	715	689	702	691	705	Burner tip temp
499 Avg	484	501	487	521	506	494	Burner body temp
108 Avg	111	108	103	104	108	113	IBAMs flow KPPH
646 Total	77.2 West	SA damper Position			East	77.3	

Windbox press 5.37	G6	G5	G4	G3	G2	G1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
53.0	17.00	17.97	18.35	20.75	21.00	21.00	Adjustable restrictor setting
0.67 Avg	0.62	0.82	0.72	0.63	0.68	0.56	Combustion index
655 Avg	645	653	615	663	652	702	Burner tip temp
501 Avg	517	511	499	496	501	484	Burner body temp
102 Avg	102	88	108	104	97	115	IBAMs flow KPPH
613 Total	76.9 West	SA damper Position			East	77.0	

U2 O2 Trends

East % O2				
6'	2.4	4.0	4.8	E A F
13'	2.2	2.9	4.4	B G
18'	2.6	3.4	3.7	C H D
Ave		3.38	% O2	

West % O2				
6'	4.7	1.7	1.6	E A F
13'	4.3	1.9	0.5	B G
18'	0.0	2.9	0.6	C H D
Ave		2.29	% O2	

O2 Actual 2.86
O2 Target 3.00

NOx Actual 0.441
NOx Target 0.424

West		East
714	SA Air Temp	697
5.5	SA Duct Pr	5.2
740	Exit Gas Temp	761
2.29	Econ O2 %	3.38
-1.95	Drum Level	-5.28

27.8 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 947 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 946 MW | Menu | AQCS | Coal Yard | Common | 02-May-08 07:42:41 | IPSC

IP7021661

Previous

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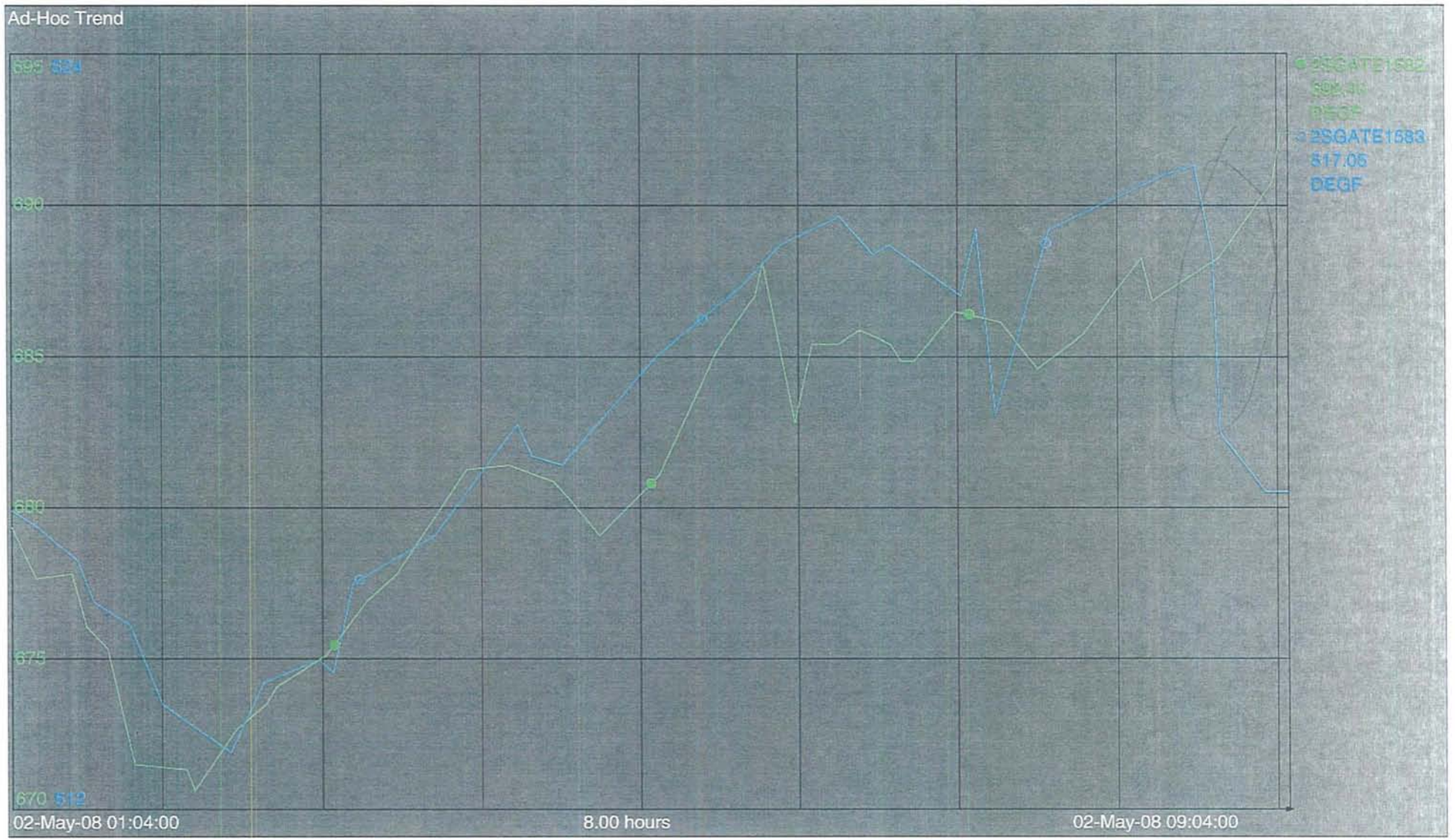
DATA	UNIT 1		UNIT 2	
Load	949.0		949.9	
Econ Inlet Temp	550.2		549.1	
PSH Outlet Tube Temp Ave / Max	738.8	770.7	738.7	779.7
	East	West	East	West
1st Stage Sprays Inlet Temp	724.4	729.7	721.2	727.8
Flow (kpph)	41.0	85.5	11.5	116.8
Outlet Temp	717.3	712.7	721.7	705.9
Platen out Tube Temp Ave / Max	805.5	840.4	797.3	827.8
2nd Stage Sprays Inlet Temp	786.4	789.8	795.2	782.7
Flow (kpph)	65.5	64.5	100.8	45.5
Outlet Temp	768.7	770.5	770.3	771.3
SSH Manifold Hdr Temp Ave / Max	900.1	947.3	920.9	945.3
SSH Int Out Tube Temp Ave / Max	937.8	1001.3	938.1	989.4
SSH Outlet Tube Temp Ave / Max	1007.2	1090.4	1024.8	1080.0
SSH Out Temp COAXI044A SGGTE0002	1006.3	1005.3	1006.7	1006.5
Throttle Temp COAXI015A	1003.8		1004.6	
Reheat Sprays Inlet Temp	640.4		638.8	
Flow (kpph)	0.0		11.2	
Outlet Temp	639.6		639.3	
PRH Out Temp	727.4		821.8	
Front RH Out Tube Temp Ave/ Max	1017.9	1097.1	1029.0	1083.4
Rear RH Out Tube Temp Ave/ Max	1021.3	1094.2	1032.0	1092.0
RH Out CCS Temps Front/Rear	996.8	1002.6	1003.1	1011.4
Coal	380.3		374.6	
O2	2.88		3.05	

52.0 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 949 MW | Menu | AQCS | **GC TEMP COMPARISON** | Performance | Unit 2 950 MW | Menu | AQCS | Coal Yard | Common | 30-Apr-08 13:25:10 IPSC

IP7021662

D1 Spin 4" to 3"
tip ↑ pipe ↓



IP7021663

Next

Previous

896.94 mw
349.12 tph

O2 West 2.65 O2 East 3.44

Windbox press 5.02	E6	E5	E4	E3	E2	E1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
49.6	17.88	18.10	18.90	20.99	21.00	21.00	New adjustable setting
Avg 0.47	0.52	0.42	0.52	0.45	0.39	0.52	Combustion index
	721	709	602	792	734	653	Burner tip temp
Avg 527	531	531	524	517	520	535	Burner body temp
Avg 90	91	96	93	89	80	89	IBAMs flow KPPH
Total 538	73.5 West	SA damper Position			East	72.5	Flower Tip

Windbox press 4.78	A6	A5	A4	A3	A2	A1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
49.6	21.00	21.00	20.99	18.90	18.10	17.88	New adjustable setting
Avg 0.50	0.34	0.55	0.56	0.45	0.52	0.54	Combustion index
	707	735	742	697	761	718	Burner tip temp
Avg 521	544	533	506	504	521	515	Burner body temp
Avg 97	94	88	97	93	111	101	IBAMs flow KPPH
Total 585	73.4 West	SA damper Position			East	72.5	PSH Dmpr 90.6 / RH Dmpr 38.2

Windbox press 5.11	F6	F5	F4	F3	F2	F1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	8.0	5.5	5.5	5.5	5.5	8.0	Outer register setting
0.0	17.85	17.85	18.21	20.09	21.00	21.00	New adjustable setting
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00	Combustion index
	1200	1388	1395	1211	1123	1201	Burner tip temp
Avg 850	792	839	872	891	875	832	Burner body temp
Avg 97	102	101	95	102	82	101	IBAMs flow KPPH
Total 583	79.4 West	SA damper Position			East	80.0	Duct Press actual 51.4 / target 48.5

Windbox press 4.73	B6	B5	B4	B3	B2	B1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	9.0	5.5	5.5	5.5	5.5	9.0	Outer register setting
49.0	21.00	21.00	20.19	18.70	18.15	17.75	New adjustable setting
Avg 0.39	0.75	0.62	0.00	0.50	0.45	0.00	Combustion index
	677	668	690	738	702	764	Burner tip temp
Avg 520	533	535	528	497	492	532	Burner body temp
Avg 83	119	2	98	102	65	108	IBAMs flow KPPH
Total 495	73.6 West	SA damper Position			East	72.2	4405 Total SA flow

Drum Level 0.34 Avg
2.41 West 0.26 Middle -4.29 East

-0.52 Furnace Press

O2 West 2.65 O2 East 3.44

D6	D5	D4	D3	D2	D1	Windbox press 4.75
4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow
8.0	5.5	5.5	5.5	5.5	8.0	49.1
21.00	21.00	19.69	18.09	17.57	17.42	0.46 Avg
0.45	0.38	0.58	0.46	0.39	0.52	
754	725	759	744	880	709	
530	517	536	525	497	539	524 Avg
100	87	88	93	2	4	62 Avg
72.1 West	SA damper Position			East	72.8	375 Total

H6	H5	H4	H3	H2	H1	Windbox press 4.79
4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow
8.0	5.5	5.5	5.5	5.5	8.0	50.9
17.42	17.57	18.09	19.69	21.00	21.00	0.49 Avg
0.57	0.52	0.53	0.51	0.47	0.32	
710	835	704	775	714	722	
523	530	539	518	512	518	524 Avg
101	97	91	91	86	88	92 Avg
73.9 West	SA damper Position			East	73.5	555 Total

C6	C5	C4	C3	C2	C1	Windbox press 4.87
4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow
8.0	5.5	5.5	5.5	5.5	8.0	49.1
21.00	21.00	20.41	19.24	18.76	17.31	0.43 Avg
0.45	0.34	0.44	0.44	0.40	0.48	
774	767	741	734	720	699	
500	512	505	535	513	507	512 Avg
107	94	91	94	95	105	98 Avg
73.5 West	SA damper Position			East	72.4	585 Total

G6	G5	G4	G3	G2	G1	Windbox press 4.83
4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow
9.0	5.5	5.5	5.5	5.5	9.0	50.1
17.00	17.97	18.35	20.75	21.00	21.00	0.66 Avg
0.54	0.83	0.73	0.68	0.65	0.57	
663	675	638	719	683	721	
526	521	508	515	517	494	514 Avg
92	77	96	92	87	103	91 Avg
73.0 West	SA damper Position			East	73.4	547 Total

West 731 SA Air Temp 722 East
4.3 SA Duct Pr 3.9

U2 O2 Trends

East % O2

6'	2.4	3.4	4.1	E A F
13'	2.2	3.6	4.6	B G
18'	3.0	4.0	4.3	C H D
Ave		3.44	% O2	

West % O2

6'	3.8	2.2	1.6	E A F
13'	4.4	2.3	1.4	B G
18'	0.0	2.7	1.9	C H D
Ave		2.65	% O2	

O2 Actual 3.05
O2 Target 3.07

NOx Actual 0.377
NOx Target 0.405

54.0 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 904 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 897 MW | Menu | AQCS | Coal Yard | Common | 29-Apr-08 07:19:09 | IPSC

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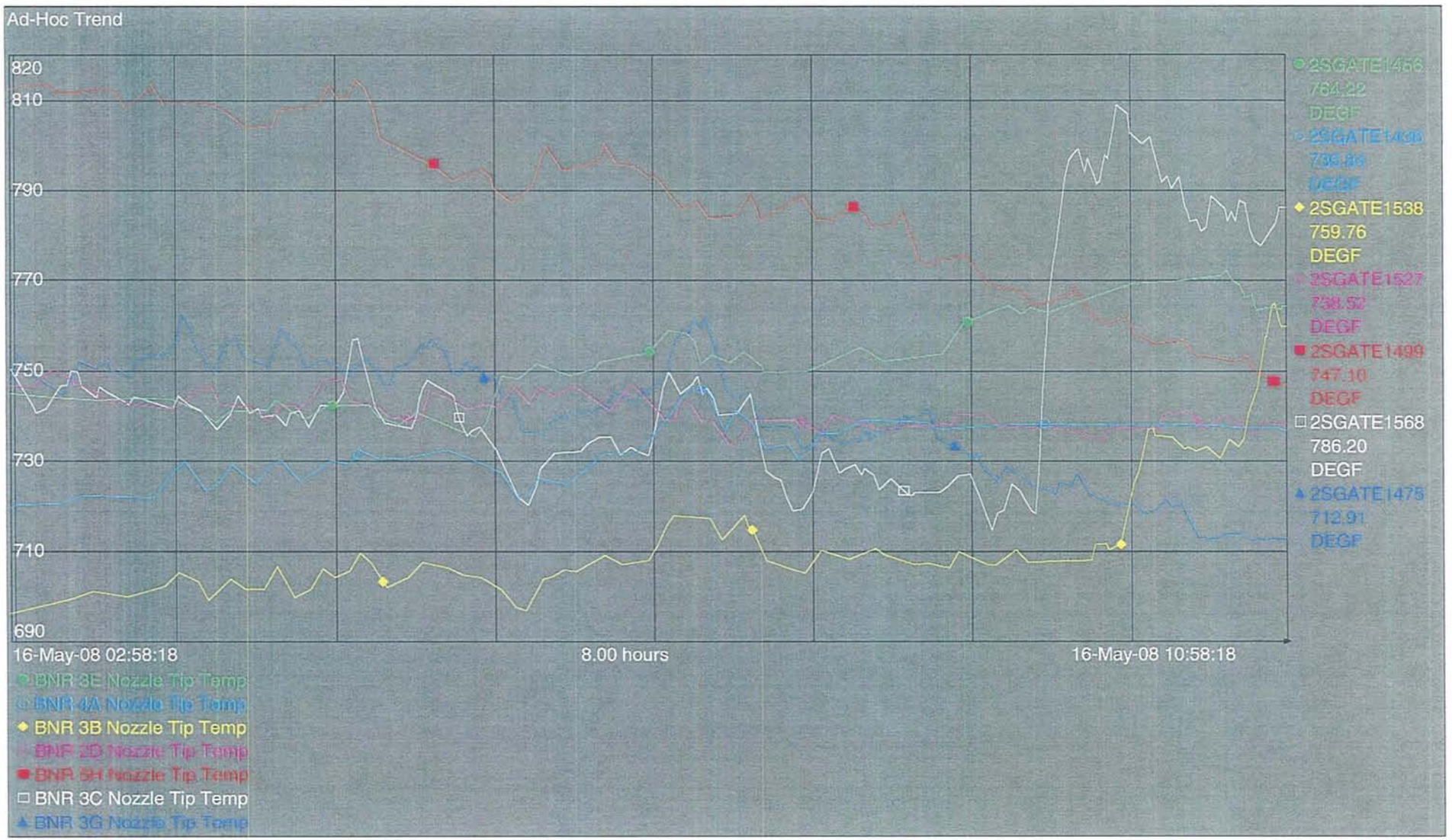

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Next | Previous

950.15 mw
388.07 tph

O2 West 3.06 | O2 East 2.96

Windbox press 2.96	E6	E5	E4	E3	E2	E1
I/S, coal flow 55.3	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	8.0
	17.88	18.10	18.90	20.99	21.00	21.00
Avg 0.30	0.33	0.27	0.38	0.30	0.32	0.27
	156	160	167	167	155	158
Avg 348	401	271	317	318	329	450
Avg 71	87	67	60	66	61	86
Total 427	80.9 West	SA damper Position			East	80.3

Windbox press 2.57	A6	A5	A4	A3	A2	A1
I/S, coal flow 56.1	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	8.0
	21.00	21.00	20.99	18.90	18.10	17.88
Avg 0.33	0.27	0.30	0.23	0.29	0.37	0.49
	173	170	175	162	179	176
Avg 350	320	378	310	390	322	382
Avg 75	89	50	70	68	79	96
Total 453	70.1 West	SA damper Position			East	82.2

Windbox press 2.82	F6	F5	F4	F3	F2	F1
I/S, coal flow 54.9	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	6.0	5.5	5.5	6.0	8.0
	17.85	17.85	18.21	20.09	21.00	21.00
Avg 0.36	0.37	0.29	0.42	0.37	0.37	0.30
	159	174	166	161	163	161
Avg 323	290	320	268	331	344	385
Avg 79	97	75	69	72	66	93
Total 472	81.1 West	SA damper Position			East	81.5

Windbox press -0.27	B6	B5	B4	B3	B2	B1
I/S, coal flow 0.0	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	7.0	6.5	6.5	7.0	9.0
	21.00	21.00	20.19	18.70	18.15	17.75
Avg 0.00	0.00	0.00	0.00	0.00	0.00	0.00
	333	314	316	284	315	347
Avg 788	803	761	773	766	763	858
Avg 75	96	78	58	54	85	93
Total 447	25.7 West	SA damper Position			East	25.0

Drum Level -0.47 Avg
-6.94 West 1.24 Middle -0.50 East

	Flower Tip	Straight Tip
Spin Vane setting		
Outer register setting		
New adjustable setting		
Combustion index		
Burner elbow temp		
Intermediate burner temp		
IBAMs flow KPPH		
PSH Dmpr / RH Dmpr	100.0	30.0
Spin Vane setting		
Outer register setting		
New adjustable setting		
Combustion index		
Burner elbow temp		
Intermediate burner temp		
IBAMs flow KPPH		
Duct Press actual / target	54.8	53.9
Spin Vane setting		
Outer register setting		
New adjustable setting		
Combustion index		
Burner elbow temp		
Intermediate burner temp		
IBAMs flow KPPH		
Total SA flow	3748	
Furnace Press	-0.47	

O2 West 3.06 | O2 East 2.96

Windbox press 2.43	D6	D5	D4	D3	D2	D1
I/S, coal flow 55.0	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	8.0
	21.00	20.00	18.55	17.04	16.57	16.45
0.36 Avg	0.38	0.50	0.26	0.31	0.46	0.25
	167	179	170	171	165	165
316 Avg	306	326	346	280	314	321
76 Avg	96	64	65	68	64	97
453 Total	81.1 West	SA damper Position			East	82.2

Windbox press 2.62	H6	H5	H4	H3	H2	H1
I/S, coal flow 56.5	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	5.5	5.5	5.5	5.5	8.0
	17.42	17.57	18.09	19.69	21.00	21.00
0.52 Avg	0.51	0.97	0.44	0.62	0.29	0.24
	171	178	176	161	155	175
279 Avg	278	306	298	297	282	217
73 Avg	94	65	66	63	65	89
441 Total	80.9 West	SA damper Position			East	81.0

Windbox press 2.66	C6	C5	C4	C3	C2	C1
I/S, coal flow 54.9	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	6.0	5.5	5.5	6.0	8.0
	21.00	21.00	20.41	19.24	18.76	17.31
0.26 Avg	0.27	0.17	0.26	0.36	0.32	0.25
	149	160	162	171	165	169
284 Avg	281	255	302	326	256	281
78 Avg	102	70	63	66	66	100
468 Total	74.5 West	SA damper Position			East	80.4

Windbox press 2.48	G6	G5	G4	G3	G2	G1
I/S, coal flow 55.5	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	7.0	6.5	6.5	7.0	9.0
	17.00	17.97	18.35	20.75	21.00	21.00
0.34 Avg	0.24	0.34	0.41	0.45	0.39	0.24
	189	173	157	151	195	194
289 Avg	305	274	309	287	276	281
82 Avg	88	74	79	72	76	102
492 Total	82.1 West	SA damper Position			East	80.5

West 729 SA Air Temp 721 East
4.8 SA Duct Pr 4.4

U2 O2 Trends

East % O2				
6'	2.7	3.3	2.4	E A
13'	2.4	3.9	2.7	F B
18'	2.9	3.8	3.1	G C
Ave		2.96	% O2	H D

West % O2				
6'	3.3	4.1	3.2	E A
13'	2.9	3.6	2.3	F B
18'	2.9	2.9	2.4	G C
Ave		3.06	% O2	H D

O2 Actual 3.00
O2 Target 2.96

NOx Actual 0.347
NOx Target 0.416

22.5 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 953 MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 950 MW | Menu | AQCS | Coal Yard | Common | 31-Dec-07 10:12:10 | IPSC

IP70216666

12-27-07

Changed to 5.5 12:55

12-27-07

Next

Previous

950.48 mw
387.86 tph

O2 West 3.07 — O2 East 2.79

	E6	E5	E4	E3	E2	E1
Windbox press 2.88						
I/S, coal flow 54.9						
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	8.0	5.5	5.5	5.5	5.5	8.0
New adjustable setting	17.88	18.10	18.90	20.99	21.00	21.00
Combustion index	0.29	0.30	0.52	0.29	0.36	0.21
Burner elbow temp	154	160	164	159	154	158
Intermediate burner temp	405	270	320	319	332	445
IBAMs flow KPPH	87	67	60	66	61	86
Avg 0.33 / Avg 349 / Avg 72 / Total 433	83.0 West	SA damper Position			East	81.6

	A6	A5	A4	A3	A2	A1
Windbox press 2.49						
I/S, coal flow 57.1						
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	8.0	5.5	5.5	5.5	5.5	8.0
New adjustable setting	21.00	21.00	20.99	18.90	18.10	17.88
Combustion index	0.26	0.27	0.23	0.29	0.35	0.37
Burner elbow temp	171	169	169	162	171	174
Intermediate burner temp	320	382	314	394	322	382
IBAMs flow KPPH	90	50	70	67	79	95
Avg 0.30 / Avg 352 / Avg 76 / Total 459	70.1 West	SA damper Position			East	81.5

	F6	F5	F4	F3	F2	F1
Windbox press 2.70						
I/S, coal flow 55.5						
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	8.0	6.0	5.5	5.5	6.0	8.0
New adjustable setting	17.85	17.85	18.21	20.09	21.00	21.00
Combustion index	0.34	0.25	0.44	0.46	0.35	0.30
Burner elbow temp	158	170	171	158	162	159
Intermediate burner temp	292	319	268	308	343	383
IBAMs flow KPPH	96	75	69	72	66	93
Avg 0.35 / Avg 319 / Avg 80 / Total 480	81.8 West	SA damper Position			East	82.4

	B6	B5	B4	B3	B2	B1
Windbox press -0.36						
I/S, coal flow 0.0						
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	9.0	7.0	6.5	6.5	7.0	9.0
New adjustable setting	21.00	21.00	20.19	18.70	18.15	17.75
Combustion index	0.00	0.00	0.00	0.00	0.00	0.00
Burner elbow temp	322	348	366	304	331	346
Intermediate burner temp	814	819	850	807	798	857
IBAMs flow KPPH	108	75	63	50	88	91
Avg 0.00 / Avg 824 / Avg 71 / Total 428	25.6 West	SA damper Position			East	25.0

Drum Level -0.38 Avg
-1.69 West 1.14 Middle -0.40 East

Flower Tip

Straight Tip

PSH Dmpr 100.0 — RH Dmpr 30.0

Duct Press actual 57.9 — target 53.8

3845 Total SA flow

-0.57 Furnace Press

O2 West 3.07 — O2 East 2.79

	D6	D5	D4	D3	D2	D1
Windbox press 2.29						
I/S, coal flow 56.1						
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	8.0	6.0	5.5	5.5	6.0	8.0
New adjustable setting	21.00	20.00	18.55	17.04	16.57	16.45
Combustion index	0.40	0.51	0.29	0.56	0.40	0.23
Burner elbow temp	166	176	169	169	163	163
Intermediate burner temp	306	328	352	279	312	325
IBAMs flow KPPH	96	66	65	68	64	95
0.39 Avg / 317 Avg / 77 Avg / 462 Total	82.5 West	SA damper Position			East	82.6

	H6	H5	H4	H3	H2	H1
Windbox press 2.49						
I/S, coal flow 55.5						
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	8.0	6.0	5.5	5.5	6.0	8.0
New adjustable setting	17.42	17.57	18.09	19.69	21.00	21.00
Combustion index	0.51	0.39	0.71	0.66	0.76	0.20
Burner elbow temp	169	176	175	158	153	174
Intermediate burner temp	277	305	298	304	289	214
IBAMs flow KPPH	94	72	66	63	65	89
0.53 Avg / 281 Avg / 76 Avg / 455 Total	82.4 West	SA damper Position			East	82.3

	C6	C5	C4	C3	C2	C1
Windbox press 2.61						
I/S, coal flow 52.1						
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	8.0	6.0	5.5	5.5	6.0	8.0
New adjustable setting	21.00	21.00	20.41	19.24	18.76	17.31
Combustion index	0.28	0.22	0.23	0.29	0.24	0.24
Burner elbow temp	148	160	159	167	163	170
Intermediate burner temp	279	253	303	317	250	278
IBAMs flow KPPH	102	71	63	66	66	100
0.24 Avg / 279 Avg / 79 Avg / 477 Total	77.6 West	SA damper Position			East	82.4

	G6	G5	G4	G3	G2	G1
Windbox press 2.29						
I/S, coal flow 56.6						
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	9.0	7.0	6.5	6.5	7.0	9.0
New adjustable setting	17.00	17.97	18.35	20.75	21.00	21.00
Combustion index	0.23	0.35	0.46	0.45	0.39	0.23
Burner elbow temp	187	171	150	150	192	192
Intermediate burner temp	303	273	299	286	273	278
IBAMs flow KPPH	88	74	79	72	75	102
0.36 Avg / 285 Avg / 82 Avg / 495 Total	81.8 West	SA damper Position			East	82.6

West 727 — SA Air Temp — 714 East
4.7 — SA Duct Pr — 4.4

U2 O2 Trends

East % O2				
6'	2.1	3.4	3.0	E A
13'	1.4	3.7	2.9	F B
18'	2.0	3.8	3.3	G C
Ave		2.79	% O2	H D

West % O2				
6'	4.0	4.3	3.3	E A
13'	2.4	3.4	2.4	F B
18'	2.5	3.1	2.5	G C
Ave		3.07	% O2	H D

O2 Actual 2.94
O2 Target 2.96

NOx Actual 0.387
NOx Target 0.442

Weather | I/O | Temp F | Plant Overview | Main Menu | Utilities | Unit 1 [redacted] MW | Menu | AQCS | **U2 BURNER OVRWS** | Burner Fronts | Unit 2 [redacted] MW | Menu | AQCS | Coal Yard | Common | 12/27/2007 12:35:09 PM | IPSC

IP7021667

9:30 – 9:40
F2 + 5 6"
F3 + F4 5.5

C2 + C5 6"
C3 + C4 5.5"

Previous | Next

O2 West 2.39 | O2 East 3.68 | 949.55 mw

Windbox press 2.7	E6	E5	E4	E3	E2	E1
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	9.0	6.0	5.5	5.5	6.0	9.0
New adjustable setting	16.97	17.11	17.94	19.86	20.00	21.00
Combustion index	0.25	0.23	0.39	0.25	0.29	0.24
Burner elbow temp	155	170	168	158	166	156
Intermediate burner temp	387	321	354	330	359	483
IBAMs flow KPPH	91	100	87	96	90	92
I/S, coal flow 54.4	Avg 0.28	Avg 372	Avg 93	Total 556		
SA damper Position	78.2 West				East	77.9

Windbox press 2.6	A6	A5	A4	A3	A2	A1
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	9.0	6.0	5.5	5.5	6.0	9.0
New adjustable setting	21.00	20.00	19.70	17.85	17.04	16.90
Combustion index	0.18	0.27	0.26	0.27	0.26	0.21
Burner elbow temp	156	165	159	156	166	165
Intermediate burner temp	407	413	357	419	411	409
IBAMs flow KPPH	95	73	98	95	104	102
I/S, coal flow 54.3	Avg 0.25	Avg 403	Avg 94	Total 565		
SA damper Position	78.8 West				East	78.6

Windbox press 2.6	F6	F5	F4	F3	F2	F1
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	9.0	7.0	6.0	6.0	7.0	9.0
New adjustable setting	16.83	16.83	17.19	19.02	20.00	21.00
Combustion index	0.49	0.22	0.61	0.33	0.34	0.34
Burner elbow temp	158	169	170	157	159	157
Intermediate burner temp	284	357	307	309	414	433
IBAMs flow KPPH	102	103	101	105	94	100
I/S, coal flow 53.4	Avg 0.39	Avg 351	Avg 101	Total 604		
SA damper Position	78.3 West				East	77.8

Windbox press 2.2	B6	B5	B4	B3	B2	B1
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	9.0	7.5	7.0	7.0	7.5	9.0
New adjustable setting	21.00	20.00	19.15	17.59	17.11	16.70
Combustion index	0.32	0.19	0.30	0.36	0.39	0.45
Burner elbow temp	180	186	174	176	161	178
Intermediate burner temp	341	417	585	342	449	420
IBAMs flow KPPH	148	143	106	105	96	115
I/S, coal flow 53.3	Avg 0.38	Avg 426	Avg 118	Total 709		
SA damper Position	78.7 West				East	78.2

Drum Level -0.69 Avg
U2 O2 Trends | -2.74 West | 0.48 Middle | -0.75 East

Flower Tip | Straight Tip

PSH Dmpr 100.0 | RH Dmpr 30.0

4709 Total SA flow
0.332 NOx

O2 West 2.39 | O2 East 3.68

Windbox press 2.6	D6	D5	D4	D3	D2	D1
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	9.0	6.0	5.5	5.5	6.0	9.0
New adjustable setting	21.0	20.0	18.55	17.04	16.57	16.45
Combustion index	0.39	0.40	0.40	0.36	0.62	0.27
Burner elbow temp	168	185	173	170	180	162
Intermediate burner temp	313	341	416	284	344	319
IBAMs flow KPPH	104	93	92	96	92	101
I/S, coal flow 50.8	0.41 Avg	336 Avg	96 Avg	576 Total		
SA damper Position	79.7 West				East	79.1

Windbox press 2.7	H6	H5	H4	H3	H2	H1
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	9.0	6.0	5.5	5.5	6.0	9.0
New adjustable setting	16.45	16.57	17.11	18.55	20.00	21.00
Combustion index	0.80	0.89	0.28	0.52	0.55	0.19
Burner elbow temp	169	177	176	163	158	171
Intermediate burner temp	281	316	314	309	296	215
IBAMs flow KPPH	101	94	91	99	92	95
I/S, coal flow 55.1	0.54 Avg	289 Avg	95 Avg	570 Total		
SA damper Position	77.9 West				East	78.7

Windbox press 0.0	C6	C5	C4	C3	C2	C1
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	9.0	7.0	6.0	6.5	7.0	9.0
New adjustable setting	21.00	20.00	19.28	18.23	17.76	16.39
Combustion index	0.00	0.00	0.00	0.00	0.00	0.00
Burner elbow temp	294	264	351	365	380	263
Intermediate burner temp	923	879	988	946	1007	675
IBAMs flow KPPH	70	63	63	63	60	69
I/S, coal flow 0.0	0.00 Avg	903 Avg	64 Avg	386 Total		
SA damper Position	25.1 West				East	30.2

Windbox press 1.9	G6	G5	G4	G3	G2	G1
Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00
Outer register setting	9.0	7.5	7.0	7.0	7.5	9.0
New adjustable setting	16.05	17.04	17.34	19.70	20.00	21.00
Combustion index	0.18	0.33	0.35	0.60	0.33	0.24
Burner elbow temp	184	171	145	151	188	189
Intermediate burner temp	315	301	321	296	288	328
IBAMs flow KPPH	90	89	100	92	92	108
I/S, coal flow 54.2	0.34 Avg	308 Avg	95 Avg	571 Total		
SA damper Position	77.8 West				East	78.4

West 729 SA Air Temp 707 East
4.7 SA Duct Pr 4.4

57.2 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 947 MW Menu AQCS | **U2 Burner Overviews** Burner Fronts | Unit 2 950 MW Menu AQCS | Coal Yard | Common | 5/29/2007 9:02:32 AM IPSC

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by 8:55

5.5 5.5

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943.50 mw

	O2 West 3.10					O2 East 1.91		O2 West 3.10					O2 East 1.91	
Windbox press 2.6	E6	E5	E4	E3	E2	E1		D6	D5	D4	D3	D2	D1	Windbox press 2.2
I/S, coal flow 51.8	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 51.2
	9.0	6.0	5.5	5.5	6.0	9.0	Outer register setting	9.0	6.0	6.5	6.5	6.0	9.0	
	16.97	17.11	17.94	19.86	20.00	21.00	New adjustable setting	21.0	20.0	18.55	17.04	16.57	16.45	
Avg 0.29	0.28	0.28	0.39	0.26	0.25	0.28	Combustion index	0.38	0.44	0.62	0.27	0.40	0.28	0.39 Avg
	159	173	167	160	170	160	Burner elbow temp	171	186	176	171	184	166	
Avg 376	389	320	357	336	364	492	Intermediate burner temp	312	344	418	289	319	324	334 Avg
Avg 90	89	97	85	92	87	90	IBAMs flow KPPH	99	90	91	96	88	96	93 Avg
Total 540	74.2 West		SA damper Position		East	74.4	Flower Tip	75.2 West		SA damper Position		East	75.4	560 Total
Windbox press 2.5	A6	A5	A4	A3	A2	A1	Straight Tip	H6	H5	H4	H3	H2	H1	Windbox press 2.6
I/S, coal flow 51.0	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 50.2
	9.0	6.0	5.5	5.5	6.0	9.0	Outer register setting	9.0	6.0 7.0	6.0	6.0	7.0 6.0	9.0	
	21.00	20.00	19.70	17.85	17.04	16.90	New adjustable setting	16.45	16.57	17.11	18.55	20.00	21.00	
Avg 0.33	0.27	0.36	0.27	0.31	0.54	0.26	Combustion index	0.88	0.72	0.23	0.46	0.26	0.17	0.46 Avg
	162	168	166	161	173	171	Burner elbow temp	172	179	178	166	163	175	
Avg 412	410	411	377	433	420	420	Intermediate burner temp	283	316	316	314	299	218	291 Avg
Avg 92	93	72	95	92	101	100	IBAMs flow KPPH	98	96	87	97	88	92	93 Avg
Total 551	74.9 West		SA damper Position		East	74.4	PSH Dmpr 100.0 / RH Dmpr 30.0	74.7 West		SA damper Position		East	74.6	559 Total
Windbox press 2.5	F6	F5	F4	F3	F2	F1		C6	C5	C4	C3	C2	C1	Windbox press 0.0
I/S, coal flow 50.3	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 0.0
	9.0	7.0	6.0	6.0	7.0	9.0	Outer register setting	9.0	7.0	6.0	6.5	7.0	9.0	
	16.83	16.83	17.19	19.02	20.00	21.00	New adjustable setting	21.00	20.00	19.28	18.23	17.76	16.39	
Avg 0.34	0.45	0.29	0.27	0.37	0.31	0.30	Combustion index	0.00	0.00	0.00	0.00	0.00	0.00	0.00 Avg
	160	169	164	158	162	160	Burner elbow temp	299	269	374	371	344	285	
Avg 353	283	355	305	310	421	442	Intermediate burner temp	937	896	1040	957	911	745	914 Avg
Avg 98	99	100	97	102	93	97	IBAMs flow KPPH	67	61	61	61	60	66	63 Avg
Total 587	73.8 West		SA damper Position		East	73.8		25.1 West		SA damper Position		East	29.8	376 Total
Windbox press 2.2	B6	B5	B4	B3	B2	B1		G6	G5	G4	G3	G2	G1	Windbox press 2.0
I/S, coal flow 51.1	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 51.9
	9.0	7.5	7.0	7.0	7.5	9.0	Outer register setting	9.0	7.5	7.0	7.0	7.5	9.0	
	21.00	20.00	19.15	17.59	17.11	16.70	New adjustable setting	16.05	17.04	17.34	19.70	20.00	21.00	
Avg 0.34	0.36	0.27	0.34	0.36	0.31	0.42	Combustion index	0.19	0.41	0.45	0.46	0.78	0.30	0.42 Avg
	181	186	170	177	159	180	Burner elbow temp	187	172	153	161	192	194	
Avg 427	339	414	581	346	458	422	Intermediate burner temp	315	301	323	300	293	330	310 Avg
Avg 113	143	143	103	102	90	107	IBAMs flow KPPH	88	87	97	89	88	104	92 Avg
Total 677	73.9 West		SA damper Position		East	74.7		74.5 West		SA damper Position		East	74.3	551 Total

Drum Level -0.29 Avg

U2 O2 Trends | -5.17 West 0.52 Middle -0.29 East

4529 Total SA flow

0.407 NOx

West 728 SA Air Temp 723 East

4.5 SA Duct Pr 4.4

53.7 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 959 MW | Menu | AQCS | **U2 Burner Overviews** | Burner Fronts | Unit 2 943 MW | Menu | AQCS | Coal Yard | Common | 5/25/2007 8:05:02 AM IPSC

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6.0 5.5 5.5 6.0

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949.20 mw

	O2 West 3.10					O2 East 2.55		O2 West 3.10					O2 East 2.55				
Windbox press 2.6	E6	E5	E4	E3	E2	E1		D6	D5	D4	D3	D2	D1	Windbox press 2.6
I/S, coal flow 53.6	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 52.9
	9.0	7.0	6.0	6.0	7.0	9.0	Outer register setting	9.0	6.0	6.5	6.5	6.0	9.0	
	16.97	17.11	17.94	19.86	20.00	21.00	New adjustable setting	21.0	20.0	18.55	17.04	16.57	16.45	
Avg 0.33	0.29	0.27	0.50	0.31	0.30	0.25	Combustion index	0.35	0.39	0.27	0.37	0.47	0.31	0.36 Avg
	156	170	165	159	168	158	Burner elbow temp	168	182	175	170	179	164	
Avg 378	391	319	357	336	368	495	Intermediate burner temp	313	344	421	292	323	325	336 Avg
Avg 92	89	101	86	94	90	91	IBAMs flow KPPH	101	91	92	99	90	98	95 Avg
Total 549	76.5 West		SA damper Position		East	76.8	Flower Tip	76.2 West		SA damper Position		East	78.0	568 Total
Windbox press 2.4	A6	A5	A4	A3	A2	A1	Straight Tip	H6	H5	H4	H3	H2	H1	Windbox press 2.7
I/S, coal flow 51.6	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 52.1
	9.0	7.0	5.5	5.5	7.0	9.0	Outer register setting	9.0	7.0	6.0	6.0	7.0	9.0	
	21.00	20.00	19.70	17.85	17.04	16.90	New adjustable setting	16.45	16.57	17.11	18.55	20.00	21.00	
Avg 0.32	0.23	0.36	0.34	0.38	0.40	0.20	Combustion index	0.79	0.52	0.20	0.62	0.37	0.24	0.46 Avg
	158	164	163	158	169	169	Burner elbow temp	169	177	174	162	160	174	
Avg 412	409	410	382	431	421	423	Intermediate burner temp	283	314	315	314	299	215	290 Avg
Avg 94	93	74	99	93	106	100	IBAMs flow KPPH	99	100	89	99	90	93	95 Avg
Total 564	77.2 West		SA damper Position		East	77.0	PSH Dmpr 99.4 / RH Dmpr 30.5	76.6 West		SA damper Position		East	77.1	568 Total
Windbox press 2.6	F6	F5	F4	F3	F2	F1		C6	C5	C4	C3	C2	C1	Windbox press 0.0
I/S, coal flow 52.6	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 0.0
	9.0	7.0	6.0	6.0	7.0	9.0	Outer register setting	9.0	7.0	6.0	6.5	7.0	9.0	
	16.83	16.83	17.19	19.02	20.00	21.00	New adjustable setting	21.00	20.00	19.28	18.23	17.76	16.39	
Avg 0.31	0.46	0.30	0.33	0.27	0.27	0.27	Combustion index	0.00	0.00	0.00	0.00	0.00	0.00	0.00 Avg
	158	167	162	157	161	158	Burner elbow temp	293	263	364	362	313	271	
Avg 353	283	353	305	309	424	444	Intermediate burner temp	954	906	1032	970	922	751	922 Avg
Avg 99	100	102	99	105	92	98	IBAMs flow KPPH	69	62	62	62	60	68	64 Avg
Total 593	77.5 West		SA damper Position		East	76.7		25.1 West		SA damper Position		East	29.8	382 Total
Windbox press 2.3	B6	B5	B4	B3	B2	B1		G6	G5	G4	G3	G2	G1	Windbox press 1.9
I/S, coal flow 53.0	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow 53.1
	9.0	7.5	7.0	7.0	7.5	9.0	Outer register setting	9.0	7.5	7.0	7.0	7.5	9.0	
	21.00	20.00	19.15	17.59	17.11	16.70	New adjustable setting	16.05	17.04	17.34	19.70	20.00	21.00	
Avg 0.37	0.31	0.28	0.36	0.41	0.37	0.46	Combustion index	0.22	0.32	0.46	0.40	0.82	0.26	0.41 Avg
	179	181	170	175	159	177	Burner elbow temp	186	170	151	158	192	195	
Avg 429	341	415	580	350	460	429	Intermediate burner temp	315	299	322	299	292	330	309 Avg
Avg 115	144	145	103	103	89	110	IBAMs flow KPPH	89	88	99	89	90	105	93 Avg
Total 691	76.5 West		SA damper Position		East	77.0		76.1 West		SA damper Position		East	76.1	559 Total

4642 Total SA flow

0.366 NOx

Drum Level 0.32 Avg

U2 O2 Trends | -5.59 West | 1.37 Middle | 0.40 East

West 737 SA Air Temp 733 East

4.7 SA Duct Pr 4.3

47.6 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 957 MW | Menu | AQCS | **U2 Burner Overviews** | Burner Fronts | Unit 2 949 MW | Menu | AQCS | Coal Yard | Common | 5/24/2007 7:44:02 AM | IPSC

IP7021670

Unit 2 using velocity 80 ft/s (4800 ft/min) and 21in diameter pipe 9/20/2005

			Total Horizontal	Vertical ft	Press B	Delta P	-4.85" DP from A6	calc'd new dia "	new res setting
A1	42	56	98	72.6797	19.4	12.6	6.10	16.9	6.89
A2	55	45	100	72.6797	19.2	12.8	5.9	17.04	6.67
A3	71	37	108	72.6797	18.2	13.8	4.9	17.85	5.37
A4	91	31	122	72.6797	16.6	15.4	3.3	19.7	2.41
A5	105	28	133	72.6797	15.3	16.7	2	21	0.34
A6	120	29	149	72.6797	13.3	18.7	0	21	0.34
						90			

			Total Horizontal	Vertical ft	Press B	Delta P	DP from G1	calc'd new dia "	new res setting
G1	146		146	42.6979	14.1	17.9	0	21	0.34
G2	130		130	42.6979	16	16	1.9	21	0.34
G3	118		118	42.6979	17.4	14.6	3.3	19.7	2.41
G4	100		100	42.6979	19.6	12.4	5.5	17.34	6.19
G5	96		96	42.6979	20	12	5.9	17.04	6.67
G6	83		83	42.6979	21.6	10.4	7.5	16.05	8.25
						83.3			

			Total Horizontal	Vertical ft	Press B	Delta P	DP from B6	calc'd new dia "	new res setting
B1	132		132	42.6979	15.8	16.2	6.4	16.7	7.21
B2	137		137	42.6979	15.2	16.8	5.8	17.11	6.55
B3	142		142	42.6979	14.6	17.4	5.2	17.59	5.79
B4	154		154	42.6979	13.1	18.9	3.7	19.15	3.29
B5	172		172	42.6979	11	21.0	1.6	21	0.34
B6	185		185	42.6979	9.44	22.6	0	21	0.34
						112.9			

			Total Horizontal	Vertical ft	Press B	Delta P	DP from H1	calc'd new dia "	new res setting
H1	49	86	135	72.6797	15	17.0	0	21	0.34
H2	41	74	115	72.6797	17.4	14.6	2.4	21	0.34
H3	37	63	100	72.6797	19.2	12.8	4.2	18.55	4.25
H4	34	52	86	72.6797	20.8	11.2	5.8	17.11	6.55
H5	36	44	80	72.6797	21.6	10.4	6.6	16.57	7.42
H6	46	32	78	72.6797	21.8	10.2	6.8	16.45	7.61
						76.2			

			Total Horizontal	Vertical ft	Press B	Delta P	DP from D6	calc'd new dia "	new res setting
D1	46	32	78	87.6979	21.6	10.4	6.8	16.45	7.61
D2	36	44	80	87.6979	21.4	10.6	6.6	16.57	7.42
D3	34	52	86	87.6979	20.7	11.3	5.9	17.04	6.67
D4	37	63	100	87.6979	19	13.0	4.2	18.55	4.25
D5	41	74	115	87.6979	17.2	14.8	2.4	21	0.34
D6	49	86	135	87.6979	14.8	17.2	0	21	0.34
						77.3			

			Total Horizontal	Vertical ft	Press B	Delta P	DP from E1	calc'd new dia "	new res setting
E1	120	29	149	87.6979	13.2	18.8	0	21	0.34
E2	105	28	133	87.6979	15.1	16.9	1.9	21	0.34
E3	91	31	122	87.6979	16.4	15.6	3.2	19.86	2.16
E4	71	37	108	87.6979	18	14	4.8	17.94	5.23
E5	55	45	100	87.6979	19	13	5.8	17.11	6.55
E6	42	56	98	87.6979	19.2	12.8	6	16.97	6.78
						91.1			

			Total Horizontal	Vertical ft	Press B	Delta P	DP from F1	calc'd new dia "	new res setting
F1	68	120	188	57.6979	8.9	23.1	0	21	0.34
F2	68	102	170	57.6979	11	21.0	2.1	21	0.34
F3	70	86	156	57.6979	12.7	19.3	3.8	19.02	3.50
F4	72	68	140	57.6979	14.6	17.4	5.7	17.19	6.43
F5	84	52	136	57.6979	15.1	16.9	6.2	16.83	7.00
F6	96	40	136	57.6979	15.1	16.9	6.2	16.83	7.00
						114.6			

			Total Horizontal	Vertical ft	Press B	Delta P	DP from C6	calc'd new dia "	new res setting
C1	58	24	82	57.6979	21.5	10.5	6.9	16.39	7.70
C2	61	37	98	57.6979	19.6	12.4	5	17.76	5.51
C3	55	47	102	57.6979	19.1	12.9	4.5	18.23	4.76
C4	53	57	110	57.6979	18.2	13.8	3.6	19.28	3.08
C5	58	67	125	57.6979	16.4	15.6	1.8	21	0.34
C6	61	79	140	57.6979	14.6	17.4	0	21	0.34
						82.6			

IP7021671

8.40 5' 0.0 10 1 1 0 0

A2+A5 – 7.0

F3+F4 – 6.0

G1+G6 to 9"

G3+G4 to 7"

Previous | Next

949.99 mw

Windbox press 2.9	E6	E5	E4	E3	E2	E1
I/S, coal flow 53.4	4.00	4.00	4.00	4.00	4.00	4.00
Spin Vane setting	9.0	7.0	6.5	6.0	7.0	9.0
Outer register setting	16.97	17.11	17.94	19.86	20.00	21.00
New adjustable setting	0.26	0.23	0.44	0.29	0.31	0.26
Combustion index	162	177	175	165	169	165
Burner elbow temp	402	299	351	338	365	497
Intermediate burner temp	90	102	89	96	91	90
IBAMs flow KPPH	76.7 West	SA damper Position			East	77.8

Avg 0.30 | Avg 375 | Avg 93 | Total 558

O2 West 3.21 | O2 East 2.92

Windbox press 2.6	A6	A5	A4	A3	A2	A1
I/S, coal flow 52.7	4.00	4.00	4.00	4.00	4.00	4.00
Spin Vane setting	9.0	7.5	5.5	5.5	7.5	9.0
Outer register setting	21.00	20.00	19.70	17.85	17.04	16.90
New adjustable setting	0.22	0.30	0.45	0.39	0.28	0.31
Combustion index	164	173	167	162	175	175
Burner elbow temp	396	422	371	428	405	426
Intermediate burner temp	94	74	99	94	107	101
IBAMs flow KPPH	76.9 West	SA damper Position			East	77.2

Avg 0.32 | Avg 408 | Avg 95 | Total 570

Flower Tip

Straight Tip

PSH Dmpr 100.0 | RH Dmpr 30.0

Windbox press 2.6	F6	F5	F4	F3	F2	F1
I/S, coal flow 52.5	4.00	4.00	4.00	4.00	4.00	4.00
Spin Vane setting	9.0	7.0	7.0	7.0	7.0	9.0
Outer register setting	16.83	16.83	17.19	19.02	20.00	21.00
New adjustable setting	0.43	0.31	0.53	0.29	0.23	0.24
Combustion index	162	175	168	162	165	163
Burner elbow temp	285	342	308	314	429	438
Intermediate burner temp	101	102	101	107	93	99
IBAMs flow KPPH	77.1 West	SA damper Position			East	77.2

Avg 0.34 | Avg 353 | Avg 101 | Total 603

Windbox press 2.3	B6	B5	B4	B3	B2	B1
I/S, coal flow 52.2	4.00	4.00	4.00	4.00	4.00	4.00
Spin Vane setting	8.0	7.5	7.5	7.5	7.5	8.0
Outer register setting	21.00	20.00	19.15	17.59	17.11	16.70
New adjustable setting	0.33	0.31	0.45	0.46	0.33	0.41
Combustion index	184	190	177	186	165	182
Burner elbow temp	342	423	585	353	462	423
Intermediate burner temp	147	143	102	104	63	111
IBAMs flow KPPH	77.1 West	SA damper Position			East	76.0

Avg 0.38 | Avg 431 | Avg 112 | Total 670

9 | 9

4650 Total SA flow

0.371 NOx

O2 West 3.21 | O2 East 2.92

Windbox press 2.6	D6	D5	D4	D3	D2	D1
I/S, coal flow 53.1	4.00	4.00	4.00	4.00	4.00	4.00
Spin Vane setting	9.0	6.0	6.5	6.5	6.0	9.0
Outer register setting	21.0	20.0	18.55	17.04	16.57	16.45
New adjustable setting	0.42	0.42	0.68	0.38	0.74	0.67
Combustion index	176	190	180	176	200	170
Burner elbow temp	315	329	432	294	321	321
Intermediate burner temp	102	92	92	98	88	98
IBAMs flow KPPH	76.9 West	SA damper Position			East	76.5

0.55 Avg | 335 Avg | 95 Avg | 570 Total

Windbox press 2.7	H6	H5	H4	H3	H2	H1
I/S, coal flow 52.3	4.00	4.00	4.00	4.00	4.00	4.00
Spin Vane setting	9.0	7.0	6.0	6.0	7.0	9.0
Outer register setting	16.45	16.57	17.11	18.55	20.00	21.00
New adjustable setting	0.44	0.59	0.23	0.30	0.64	0.15
Combustion index	175	183	183	169	166	177
Burner elbow temp	285	321	322	319	303	224
Intermediate burner temp	100	101	89	98	93	94
IBAMs flow KPPH	76.3 West	SA damper Position			East	76.8

0.39 Avg | 295 Avg | 96 Avg | 575 Total

Windbox press 0.2	C6	C5	C4	C3	C2	C1
I/S, coal flow 0.0	4.00	4.00	4.00	4.00	4.00	4.00
Spin Vane setting	9.0	7.0	6.0	6.5	7.0	9.0
Outer register setting	21.00	20.00	19.28	18.23	17.76	16.39
New adjustable setting	0.00	0.00	0.00	0.00	0.00	0.00
Combustion index	303	288	391	400	370	316
Burner elbow temp	890	954	1072	1027	950	860
Intermediate burner temp	70	63	63	63	62	69
IBAMs flow KPPH	25.2 West	SA damper Position			East	29.9

0.00 Avg | 959 Avg | 65 Avg | 391 Total

Windbox press 2.3	G6	G5	G4	G3	G2	G1
I/S, coal flow 51.7	4.00	4.00	4.00	4.00	4.00	4.00
Spin Vane setting	8.0	7.5	7.5	7.5	7.5	8.0
Outer register setting	16.05	17.04	17.34	19.70	20.00	21.00
New adjustable setting	0.20	0.49	0.52	0.44	0.34	0.24
Combustion index	190	173	152	160	195	195
Burner elbow temp	319	295	323	299	289	324
Intermediate burner temp	88	87	99	91	90	105
IBAMs flow KPPH	77.2 West	SA damper Position			East	77.5

0.37 Avg | 308 Avg | 93 Avg | 559 Total

Drum Level -0.02 Avg

U2 O2 Trends | -1.72 West | 1.00 Middle | -0.02 East

West 734 | SA Air Temp | 725 East

4.8 | SA Duct Pr | 4.3

61.0 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 950 MW | Menu | AQCS | **U2 Burner Overviews** | Burner Fronts | Unit 2 950 MW | Menu | AQCS | Coal Yard | Common | 5/18/2007 7:43:55 AM | IPSC

IP7021672

O2 West 2.47 | O2 East 2.98 | 949.64 mw | O2 West 2.47 | O2 East 2.98

Windbox press 2.7	E6	E5	E4	E3	E2	E1		D6	D5	D4	D3	D2	D1	Windbox press 2.3
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	
I/S, coal flow 9	10.5	7.0	6.5	6.0	7.0	10.5	9 Outer register setting 9	10.3	6.0	6.5	6.5	6.0	10.0	9 I/S, coal flow
52.3	16.97	17.11	17.94	19.86	20.00	21.00	New adjustable setting	21.0	20.0	18.55	17.04	16.57	16.45	53.0
Avg 0.34	0.25	0.26	0.68	0.23	0.34	0.29	Combustion index	0.47	0.51	0.35	0.38	0.57	0.34	0.43 Avg
	165	183	175	169	170	167	Burner elbow temp	176	193	188	176	195	173	
Avg 387	453	301	358	344	364	505	Intermediate burner temp	326	357	425	311	289	340	342 Avg
Avg 93	87	102	88	96	90	92	IBAMs flow KPPH	100	91	94	94	89	97	94 Avg
Total 556	76.6 West	SA damper Position			East	76.1	Flower Tip	78.1 West	SA damper Position			East	76.6	563 Total

Windbox press 2.6	A6	A5	A4	A3	A2	A1	Straight Tip	H6	H5	H4	H3	H2	H1	Windbox press 0.0
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	
I/S, coal flow 9	10.0	7.5	5.5	5.5	7.5	9.5	9 Outer register setting 9	10.0	7.0	6.0	6.0	7.0	10.0	9 I/S, coal flow
52.1	21.00	20.00	19.70	17.85	17.04	16.90	New adjustable setting	16.45	16.57	17.11	18.55	20.00	21.00	0.1
Avg 0.31	0.23	0.59	0.23	0.27	0.27	0.28	Combustion index	0.00	0.00	0.00	0.00	0.00	0.00	0.00 Avg
	169	179	180	167	178	180	Burner elbow temp	299	211	329	340	322	288	
Avg 403	410	419	383	432	401	370	Intermediate burner temp	706	773	937	1116	1059	443	840 Avg
Avg 95	94	73	99	94	106	101	IBAMs flow KPPH	62	63	56	60	58	59	60 Avg
Total 567	76.9 West	SA damper Position			East	77.4		24.4 West	SA damper Position			East	24.8	359 Total

Windbox press 2.5	F6	F5	F4	F3	F2	F1		C6	C5	C4	C3	C2	C1	Windbox press 2.7
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	
I/S, coal flow 9	10.0	7.0	7.0	7.0	7.0	10.0	9 Outer register setting 9	10.0	7.0	6.0	6.5	7.0	10.0	9 I/S, coal flow
52.6	16.83	16.83	17.19	19.02	20.00	21.00	New adjustable setting	21.00	20.00	19.28	18.23	17.76	16.39	53.4
Avg 0.43	0.53	0.33	0.57	0.49	0.25	0.37	Combustion index	0.34	0.27	0.46	0.50	0.48	0.23	0.38 Avg
	166	177	174	165	169	166	Burner elbow temp	155	169	166	180	203	203	
Avg 349	290	344	303	317	402	438	Intermediate burner temp	312	267	314	359	277	308	306 Avg
Avg 100	100	102	101	106	93	97	IBAMs flow KPPH	109	95	92	96	96	105	99 Avg
Total 601	77.8 West	SA damper Position			East	77.0		68.5 West	SA damper Position			East	76.9	596 Total

Windbox press 2.2	B6	B5	B4	B3	B2	B1		G6	G5	G4	G3	G2	G1	Windbox press 2.3
	4.00	3 4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	
I/S, coal flow 3 8	9.0	8.0 7.5	8.0 7.5	8.0 7.5	8.0 7.5	9.0	8 Outer register setting 8	8.0	8.0 7.5	8.0 7.5	8.0 7.5	8.0 7.5	8.0	8 I/S, coal flow
51.9	21.00	20.00	19.15	17.59	17.11	16.70	New adjustable setting	16.05	17.04	17.34	19.70	20.00	21.00	52.4
Avg 0.36	0.35	0.28	0.49	0.33	0.31	0.29	Combustion index	0.23	0.54	0.54	0.46	0.33	0.22	0.22 Avg
	186	188	177	188	166	184	Burner elbow temp	194	180	162	164	201	201	
Avg 431	353	410	585	374	427	441	Intermediate burner temp	320	302	326	304	293	329	312 Avg
Avg 111	136	138	97	104	73	115	IBAMs flow KPPH	91	91	101	91	90	106	95 Avg
Total 663	77.4 West	SA damper Position			East	76.9		77.3 West	SA damper Position			East	77.9	570 Total

Drum Level -1.43 Avg
-4.87 West -0.24 Middle -1.43 East

4605 Total SA flow
0.34 NOx

West 730 SA Air Temp 743 East

66.1 Weather I/O | Main Menu | Unit 1 Shutdown MW | **U2 Burner Overviews** | Unit 2 950 MW | Coal Yard | 4/11/2007 3:16:30 PM
Temp F Plant Overview | Utilities | Menu AQCS | Burner Fronts | Menu AQCS | Common | IPSC

@ 13:40 B5 + B6 spin back to 4

IP7021673

finished [illegible] except B&C

O2 West 2.90 | O2 East 3.24 | 954.74 mw

Windbox press 2.7	E6	E5	E4	E3	E2	E1
I/S, coal flow 50.7	4.00	4.00	4.00	4.00	4.00	4.00
	10.5	7.0	6.5	6.0	7.0	10.5
	16.97	17.11	17.94	19.86	20.00	21.00
Avg 0.35	0.28	0.26	0.86	0.21	0.28	0.23
	164	180	177	168	168	168
Avg 385	415	303	356	345	379	512
Avg 94	89	103	89	96	93	92
Total 562	80.8 West	SA damper Position			East	81.7

Windbox press 2.6	A6	A5	A4	A3	A2	A1
I/S, coal flow 57.4	4.00	4.00	4.00	4.00	4.00	4.00
	10.0	7.5	5.5	5.5	7.5	9.5
	21.00	20.00	19.70	17.85	17.04	16.90
Avg 0.32	0.30	0.24	0.41	0.46	0.27	0.25
	167	177	170	166	180	179
Avg 419	394	434	373	445	424	445
Avg 95	95	74	98	94	108	101
Total 572	72.9 West	SA damper Position			East	72.8

Windbox press 2.7	F6	F5	F4	F3	F2	F1
I/S, coal flow 54.4	4.00	4.00	4.00	4.00	4.00	4.00
	10.0	7.0	7.0	7.0	7.0	10.0
	16.83	16.83	17.19	19.02	20.00	21.00
Avg 0.37	0.49	0.26	0.41	0.44	0.28	0.35
	164	176	169	165	168	167
Avg 362	292	348	312	322	442	456
Avg 102	102	104	103	108	94	101
Total 613	81.0 West	SA damper Position			East	81.8

Windbox press 2.5	B6	B5	B4	B3	B2	B1
I/S, coal flow 55.8	4.00	4.00	4.00	4.00	4.00	4.00
	9.0	8.0	8.0	8.0	8.0	9.0
	21.00	20.00	19.15	17.59	17.11	16.70
Avg 0.36	0.32	0.27	0.42	0.47	0.37	0.31
	187	189	175	190	168	186
Avg 445	351	430	598	368	478	441
Avg 106	116	122	101	107	67	122
Total 634	80.4 West	SA damper Position			East	80.8

Drum Level -0.64 Avg
-3.90 West 0.52 Middle -0.56 East

	Flower Tip	Straight Tip
Spin Vane setting		
Outer register setting		
New adjustable setting		
Combustion index		
Burner elbow temp		
Intermediate burner temp		
IBAMs flow KPPH		

PSH Dmpr 100.0 | RH Dmpr 30.0

4702 Total SA flow
0.363 NOx

O2 West 2.90 | O2 East 3.24

Windbox press 2.7	D6	D5	D4	D3	D2	D1
I/S, coal flow 56.3	4.00	4.00	4.00	4.00	4.00	4.00
	10.3	6.0	6.5	6.5	6.0	10.0
	21.0	20.0	18.55	17.04	16.57	16.45
0.47 Avg	0.43	0.44	0.69	0.60	0.43	0.35
	176	193	181	180	206	173
339 Avg	321	335	407	302	335	332
98 Avg	104	94	94	102	91	100
585 Total	80.2 West	SA damper Position			East	81.7

Windbox press 2.8	H6	H5	H4	H3	H2	H1
I/S, coal flow 55.4	4.00	4.00	4.00	4.00	4.00	4.00
	10.0	7.0	6.0	6.0	7.0	10.0
	16.45	16.57	17.11	18.55	20.00	21.00
0.41 Avg	0.67	0.48	0.20	0.36	0.50	0.29
	178	185	185	171	165	182
299 Avg	277	325	324	327	309	232
97 Avg	102	98	93	100	94	95
582 Total	81.0 West	SA damper Position			East	80.8

Windbox press 0.0	C6	C5	C4	C3	C2	C1
I/S, coal flow 0.0	4.00	4.00	4.00	4.00	4.00	4.00
	10.0	7.0	6.0	6.5	7.0	10.0
	21.00	20.00	19.28	18.23	17.76	16.39
0.00 Avg	0.00	0.00	0.00	0.00	0.00	0.00
	311	304	397	413	387	330
957 Avg	879	959	1063	1020	959	863
62 Avg	67	61	60	60	58	65
373 Total	25.2 West	SA damper Position			East	29.8

Windbox press 2.2	G6	G5	G4	G3	G2	G1
I/S, coal flow 53.2	4.00	4.00	4.00	4.00	4.00	4.00
	8.0	8.0	8.0	8.0	8.0	8.0
	16.05	17.04	17.34	19.70	20.00	21.00
0.37 Avg	0.14	0.43	0.42	0.43	0.47	0.30
	194	177	154	167	200	201
314 Avg	324	299	329	305	295	333
95 Avg	90	87	101	92	92	107
570 Total	80.4 West	SA damper Position			East	81.9

West 743 SA Air Temp 745 East

73.7 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 952 MW Menu AQCS | **U2 Burner Overviews** Burner Fronts | Unit 2 955 MW Menu AQCS | Coal Yard | Common | 5/14/2007 1:58:03 PM IPSC

IP7021674

~ 10:30 B6 to 8"
B5-B2 7.5"
B1 to 8"

O2 West 3.81 O2 East 2.71

Windbox press 3.0	E6	E5	E4	E3	E2	E1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
51.1	10.5	7.0	6.5	6.0	7.0	10.5
	16.97	17.11	17.94	19.86	20.00	21.00
Avg 0.37	0.29	0.26	0.81	0.25	0.34	0.25
	160	175	173	164	165	164
Avg 381	411	301	353	342	375	506
Avg 94	91	105	91	99	94	95
Total 566	82.0 West	SA damper Position			East	82.8

Windbox press 2.7	A6	A5	A4	A3	A2	A1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
56.1	10.0	7.5	5.5	5.5	7.5	9.5
	21.00	20.00	19.70	17.85	17.04	16.90
Avg 0.34	0.29	0.27	0.46	0.51	0.27	0.21
	163	172	165	162	175	175
Avg 415	390	429	370	440	420	438
Avg 96	97	75	101	96	107	103
Total 573	74.5 West	SA damper Position			East	74.5

Windbox press 2.8	F6	F5	F4	F3	F2	F1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
56.0	10.0	7.0	7.0	7.0	7.0	10.0
	16.83	16.83	17.19	19.02	20.00	21.00
Avg 0.39	0.47	0.28	0.46	0.45	0.30	0.35
	161	172	166	162	165	163
Avg 359	288	347	309	318	439	451
Avg 103	104	106	105	111	97	102
Total 617	81.3 West	SA damper Position			East	82.3

Windbox press 2.5	B6	B5	B4	B3	B2	B1
I/S, coal flow	4.00	4.00	4.00	4.00	4.00	4.00
58.9	9.0	8.0	8.0	8.0	8.0	9.0
	21.00	20.00	19.15	17.59	17.11	16.70
Avg 0.38	0.30	0.35	0.40	0.51	0.32	0.38
	185	184	172	185	164	184
Avg 442	348	426	593	368	473	442
Avg 105	114	124	107	108	67	124
Total 629	78.8 West	SA damper Position			East	78.7

Drum Level 0.12 Avg
-3.86 West 1.19 Middle 0.22 East

947.06 mw

Spin Vane setting	
Outer register setting	
New adjustable setting	
Combustion index	
Burner elbow temp	
Intermediate burner temp	
IBAMs flow KPPH	
Flower Tip	
Straight Tip	
Spin Vane setting	
Outer register setting	
New adjustable setting	
Combustion index	
Burner elbow temp	
Intermediate burner temp	
IBAMs flow KPPH	
PSH Dmpr 92.3	RH Dmpr 36.5
Spin Vane setting	
Outer register setting	
New adjustable setting	
Combustion index	
Burner elbow temp	
Intermediate burner temp	
IBAMs flow KPPH	
Spin Vane setting	
Outer register setting	
New adjustable setting	
Combustion index	
Burner elbow temp	
Intermediate burner temp	
IBAMs flow KPPH	
4728 Total SA flow	
0.341 NOx	

O2 West 3.81 O2 East 2.71

D6	D5	D4	D3	D2	D1	Windbox press 2.7
4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow
10.3	6.0	6.5	6.5	6.0	10.0	56.1
21.0	20.0	18.55	17.04	16.57	16.45	
0.41	0.43	0.63	0.68	0.34	0.31	0.45 Avg
173	190	179	176	202	169	
318	331	402	300	331	328	335 Avg
106	95	95	104	93	102	98 Avg
82.1 West	SA damper Position			East	82.2	589 Total

H6	H5	H4	H3	H2	H1	Windbox press 2.8
4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow
10.0	7.0	6.0	6.0	7.0	10.0	57.0
16.45	16.57	17.11	18.55	20.00	21.00	
0.65	0.56	0.40	0.42	0.56	0.30	0.44 Avg
175	182	181	167	159	178	
274	322	321	325	305	227	296 Avg
103	100	94	103	96	97	98 Avg
82.7 West	SA damper Position			East	82.2	586 Total

C6	C5	C4	C3	C2	C1	Windbox press 0.0
4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow
10.0	7.0	6.0	6.5	7.0	10.0	0.0
21.00	20.00	19.28	18.23	17.76	16.39	
0.00	0.00	0.00	0.00	0.00	0.00	0.00 Avg
302	300	393	409	384	323	
867	949	1057	1009	953	856	948 Avg
68	62	61	61	59	66	62 Avg
25.2 West	SA damper Position			East	29.8	373 Total

G6	G5	G4	G3	G2	G1	Windbox press 2.2
4.00	4.00	4.00	4.00	4.00	4.00	I/S, coal flow
8.0	8.0	8.0	8.0	8.0	8.0	54.2
16.05	17.04	17.34	19.70	20.00	21.00	
0.31	0.44	0.41	0.46	0.58	0.20	0.20 Avg
190	174	153	164	195	195	
320	297	326	302	292	331	311 Avg
91	89	103	94	96	109	96 Avg
81.9 West	SA damper Position			East	83.0	575 Total

West 738 SA Air Temp 740 East

64.7 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 948 MW | Menu | AQCS | **U2 Burner Overviews** | Burner Fronts | Unit 2 947 MW | Menu | AQCS | Coal Yard | Common | 5/14/2007 10:21:31 AM IPSC

IP7021675

@ 10:25 G2 thr 65 @ 7.5"

O2 West 3.35 | O2 East 2.38 | 950.20 mw

Windbox press 2.1	E6	E5	E4	E3	E2	E1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	10.5	7.0	6.5	6.0	7.0	10.5	Outer register setting
45.4	16.97	17.11	17.94	19.86	20.00	21.00	New adjustable setting
Avg 0.24	0.20	0.24	0.37	0.23	0.26	0.23	Combustion index
	162	177	175	167	169	165	Burner elbow temp
Avg 378	411	301	356	341	364	496	Intermediate burner temp
Avg 85	81	93	82	87	83	83	IBAMs flow KPPH
Total 508	65.5 West	SA damper Position			East	64.9	Flower Tip

Windbox press 2.0	A6	A5	A4	A3	A2	A1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	10.0	7.5	5.5	5.5	7.5	9.5	Outer register setting
44.5	21.00	20.00	19.70	17.85	17.04	16.90	New adjustable setting
Avg 0.31	0.30	0.29	0.36	0.45	0.30	0.20	Combustion index
	162	173	169	164	175	176	Burner elbow temp
Avg 409	390	432	371	419	418	427	Intermediate burner temp
Avg 86	86	67	90	86	98	92	IBAMs flow KPPH
Total 519	65.4 West	SA damper Position			East	66.0	Straight Tip

Windbox press 1.9	F6	F5	F4	F3	F2	F1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	10.0	7.0	7.0	7.0	7.0	10.0	Outer register setting
44.7	16.83	16.83	17.19	19.02	20.00	21.00	New adjustable setting
Avg 0.33	0.44	0.30	0.45	0.31	0.20	0.33	Combustion index
	162	173	169	159	163	162	Burner elbow temp
Avg 359	295	352	330	331	413	428	Intermediate burner temp
Avg 91	91	91	91	96	85	89	IBAMs flow KPPH
Total 545	64.7 West	SA damper Position			East	64.8	

Windbox press 1.7	B6	B5	B4	B3	B2	B1	
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting
I/S, coal flow	9.0	8.0	8.0	8.0	8.0	9.0	Outer register setting
44.3	21.00	20.00	19.15	17.59	17.11	16.70	New adjustable setting
Avg 0.36	0.29	0.22	0.33	0.49	0.25	0.46	Combustion index
	187	183	173	187	166	181	Burner elbow temp
Avg 436	345	426	583	371	463	427	Intermediate burner temp
Avg 95	102	113	92	95	60	107	IBAMs flow KPPH
Total 571	65.5 West	SA damper Position			East	64.9	

4445 Total SA flow

0.39 NOx

Drum Level -0.87 Avg

-1.46 West 0.44 Middle -0.84 East

O2 West 3.35 | O2 East 2.38

D6	D5	D4	D3	D2	D1	Windbox press 1.9
4.00	4.00	4.00	4.00	4.00	4.00	
10.3	6.0	6.5	6.5	6.0	10.0	I/S, coal flow
21.0	20.0	18.55	17.04	16.57	16.45	44.4
0.39	0.35	0.34	0.56	0.43	0.31	0.40 Avg
176	189	183	177	200	170	
318	334	403	301	333	326	335 Avg
93	83	84	92	82	89	87 Avg
65.9 West	SA damper Position			East	66.3	523 Total

H6	H5	H4	H3	H2	H1	Windbox press 2.0
4.00	4.00	4.00	4.00	4.00	4.00	
10.0	7.0	6.0	6.0	7.0	10.0	I/S, coal flow
16.45	16.57	17.11	18.55	20.00	21.00	43.9
0.53	0.53	0.24	0.63	0.53	0.21	0.46 Avg
177	184	182	171	171	178	
286	323	322	323	304	224	297 Avg
91	91	81	89	83	86	86 Avg
64.4 West	SA damper Position			East	65.6	519 Total

C6	C5	C4	C3	C2	C1	Windbox press 2.0
4.00	4.00	4.00	4.00	4.00	4.00	
10.0	7.0	6.0	6.5	7.0	10.0	I/S, coal flow
21.00	20.00	19.28	18.23	17.76	16.39	44.2
0.58	0.43	0.50	0.34	0.52	0.54	0.47 Avg
155	168	166	179	200	197	
304	265	315	357	279	308	304 Avg
99	90	87	87	88	95	91 Avg
72.8 West	SA damper Position			East	66.2	546 Total

G6	G5	G4	G3	G2	G1	Windbox press 1.7
4.00	4.00	4.00	4.00	4.00	4.00	
8.0	8.0	8.0	8.0	8.0	8.0	I/S, coal flow
16.05	17.04	17.34	19.70	20.00	21.00	43.0
0.14	0.59	0.43	0.64	0.40	0.27	0.27 Avg
189	176	152	165	196	195	
323	300	323	305	293	330	312 Avg
84	84	92	82	85	98	87 Avg
65.5 West	SA damper Position			East	66.1	524 Total

West 723 SA Air Temp 734 East

72.1 Temp F | Weather | I/O | Plant Overview | Main Menu | Utilities | Unit 1 935 MW | Menu | AQCS | **U2 Burner Overviews** | Burner Fronts | Unit 2 950 MW | Menu | AQCS | Coal Yard | Common | 5/11/2007 9:48:31 AM IPSC

Pic with B6 & B5 spin 3"

G1 + G6 OR @ 9" → Flow down on both CI lower

IP7021676

B5 & B6 Spin

Printed out for: GARRY-C - 11-May-07 09:32:31
0 Messages U2 SA Flow Secondary Air flow 11-May-07 09:32:31

EndTim= 11-May-07 09:32:31 /EvalTim= 11-May-07 09:32:31 /PanRate= 0

IP70216777

O2 West 2.85 | O2 East 3.31 | 948.78 mw | O2 West 2.85 | O2 East 3.31

Windbox press 2.6	E6	E5	E4	E3	E2	E1		D6	D5	D4	D3	D2	D1	Windbox press 2.4
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	
I/S, coal flow	10.5	7.0	6.5	6.0	7.0	10.5	Outer register setting	10.3	6.0	6.5	6.5	6.0	10.0	I/S, coal flow
51.6	16.97	17.11	17.94	19.86	20.00	21.00	New adjustable setting	21.0	20.0	18.55	17.04	16.57	16.45	51.0
Avg 0.26	0.24	0.25	0.37	0.27	0.26	0.22	Combustion index	0.42	0.39	0.40	0.63	0.43	0.34	0.43 Avg
	160	176	172	165	168	163	Burner elbow temp	174	189	179	175	199	169	
Avg 374	408	298	352	337	360	491	Intermediate burner temp	315	329	399	297	329	321	332 Avg
Avg 90	86	99	86	92	88	89	IBAMs flow KPPH	100	89	90	98	87	94	93 Avg
Total 540	74.6 West	SA damper Position			East	74.1	Flower Tip	74.6 West	SA damper Position			East	75.7	558 Total

Windbox press 2.5	A6	A5	A4	A3	A2	A1	Straight Tip	H6	H5	H4	H3	H2	H1	Windbox press 2.5
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	
I/S, coal flow	10.0	7.5	5.5	5.5	7.5	9.5	Outer register setting	10.0	7.0	6.0	6.0	7.0	10.0	I/S, coal flow
51.0	21.00	20.00	19.70	17.85	17.04	16.90	New adjustable setting	16.45	16.57	17.11	18.55	20.00	21.00	49.6
Avg 0.34	0.23	0.31	0.39	0.51	0.33	0.30	Combustion index	0.56	0.55	0.24	0.66	0.57	0.19	0.47 Avg
	158	172	164	162	173	175	Burner elbow temp	175	182	180	170	167	176	
Avg 406	385	429	368	415	415	422	Intermediate burner temp	282	319	317	318	301	220	293 Avg
Avg 92	91	71	96	91	104	98	IBAMs flow KPPH	97	97	87	96	90	91	93 Avg
Total 553	74.6 West	SA damper Position			East	75.1		74.0 West	SA damper Position			East	75.0	558 Total

Windbox press 0.0	F6	F5	F4	F3	F2	F1		C6	C5	C4	C3	C2	C1	Windbox press 2.4
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	
I/S, coal flow	10.0	7.0	7.0	7.0	7.0	10.0	Outer register setting	10.0	7.0	6.0	6.5	7.0	10.0	I/S, coal flow
0.0	16.83	16.83	17.19	19.02	20.00	21.00	New adjustable setting	21.00	20.00	19.28	18.23	17.76	16.39	51.3
Avg 0.58	0.50	0.46	0.58	0.48	0.60	0.81	Combustion index	0.49	0.42	0.54	0.44	0.60	0.53	0.50 Avg
	186	194	202	178	179	187	Burner elbow temp	154	167	164	177	200	197	
Avg 460	430	440	487	446	465	489	Intermediate burner temp	299	261	312	348	274	304	300 Avg
Avg 61	61	59	60	65	57	61	IBAMs flow KPPH	104	95	91	95	93	102	97 Avg
Total 364	24.4 West	SA damper Position			East	24.6		72.8 West	SA damper Position			East	74.7	580 Total

to 9"

Windbox press 1.9	B6	B5	B4	B3	B2	B1		G6	G5	G4	G3	G2	G1	Windbox press 2.1
	4.00	4.00	4.00	4.00	4.00	4.00	Spin Vane setting	4.00	4.00	4.00	4.00	4.00	4.00	
I/S, coal flow	9.0	8.0	8.0	8.0	8.0	9.0	Outer register setting	8.0	8.0	8.0	8.0	8.0	8.0	I/S, coal flow
50.5	21.00	20.00	19.15	17.59	17.11	16.70	New adjustable setting	16.05	17.04	17.34	19.70	20.00	21.00	49.4
Avg 0.40	0.34	0.30	0.42	0.55	0.28	0.45	Combustion index	0.19	0.62	0.41	0.63	0.46	0.25	0.25 Avg
	186	180	171	185	165	182	Burner elbow temp	186	173	154	163	193	192	
Avg 434	341	434	578	363	458	427	Intermediate burner temp	318	297	319	300	288	325	308 Avg
Avg 107	134	138	94	99	70	108	IBAMs flow KPPH	88	90	99	88	91	104	93 Avg
Total 645	75.1 West	SA damper Position			East	74.9		74.8 West	SA damper Position			East	75.2	560 Total

4550 Total SA flow

Drum Level -0.27 Avg

-0.31 West 0.49 Middle -0.66 East

0.39 NOx

West 716 SA Air Temp 727 East

at ≈ 8:35 flows dropped down ≈ 10

B6 & B5 to 3"

61.9 Temp F	Weather	I/O	Main Menu	Unit 1 936 MW	**U2 Burner Overviews**	Unit 2 949 MW	Coal Yard	5/11/2007 8:27:03 AM
	Plant Overview		Utilities	Menu AQCS	Burner Fronts	Menu AQCS	Common	IPSC

@ 9:25 B6 & B5 to 3"
G1 & G6 to 9"

IP7021678

Table 4 Burner Settings on May 19th 2004

UNIT 2

			Spin Vanes	Inner Air	5/18/04 Outer Register	Spin Vanes	Inner Air	5/19/04-5/20/04 Outer Register
Front	Pulv	E1	3.00	1.5	6.3	3.75	1.5	6.5
		E2	3.00	1.5	5.1	3.75	1.5	5.3
	min	E3	3.00	1.5	4.6	3.75	1.5	4.7
	E	E4	3.00	1.5	4.7	4.50	1.5	4.8
		E5	3.00	1.5	5.3	3.75	1.5	5.4
		E6	3.00	1.5	6.6	3.75	1.5	6.6
	Pulv	A1	3.75	1.5	8.5	3.75	1.5	8.7
		A2	3.75	1.5	6.8	3.75	1.5	7.0
	A	A3	3.75	1.5	6.1	3.75	1.5	6.3
		A4	3.75	1.5	6.3	4.50	1.5	6.5
		A5	3.75	1.5	7.0	3.75	1.5	7.2
		A6	3.75	1.5	8.9	3.75	1.5	8.9
	Pulv	F1	3.25	1.5	6.5	3.75	1.5	6.8
		F2	3.25	1.5	5.3	3.75	1.5	5.4
	F	F3	3.25	1.5	4.7	3.75	1.5	4.9
		F4	3.75	1.5	4.8	4.50	1.5	5.0
		F5	3.75	1.5	5.4	3.75	1.5	5.6
		F6	3.75	1.5	6.9	3.75	1.5	6.9
	Pulv	B1	3.75	1.5	10.0	3.75	1.5	10.3
		B2	3.75	1.5	8.0	3.75	1.5	8.3
	B	B3	3.75	1.5	7.2	3.75	1.5	7.5
		B4	3.75	1.5	7.4	3.75	1.5	7.6
		B5	3.75	1.5	8.3	3.75	1.5	8.5
		B6	3.75	1.5	10.5	3.75	1.5	10.5
Rear	Pulv	D1	3.75	1.5	**7.1**	3.75	1.5	7.1
		D2	3.75	1.5	**4.7**	3.75	1.5	4.7
	D	D3	3.75	1.5	**4.0**	3.75	1.5	5.0
		D4	3.75	1.5	**4.5**	3.75	1.5	5.0
		D5	3.75	1.5	**6.3**	3.75	1.5	6.3
		D6	5.00	1.5	**10.3**	5.00	1.5	10.3
	Pulv	H1	3.00	1.5	9.1	3.75	1.5	9.3
		H2	3.00	1.5	7.3	3.75	1.5	7.5
	H	H3	3.00	1.5	6.6	3.75	1.5	6.8
		H4	3.00	1.5	6.7	3.75	1.5	6.9
		H5	3.00	1.5	7.5	3.75	1.5	7.7
		H6	3.00	1.5	9.5	3.75	1.5	9.5
	Pulv	C1	3.75	1.5	8.1	3.75	1.5	8.3
		C2	3.75	1.5	6.5	3.75	1.5	6.7
	C	C3	3.75	1.5	5.9	3.75	1.5	6.1
		C4	3.75	1.5	6.0	3.75	1.5	6.2
		C5	3.75	1.5	6.7	5.00	1.5	6.9
		C6	3.75	1.5	8.5	3.75	1.5	8.5
	Pulv	G1	3.75	1.5	12.3	3.75	1.5	12.6
		G2	3.75	1.5	9.9	3.75	1.5	10.2
	G	G3	3.75	1.5	8.9	3.75	1.5	9.2
		G4	3.75	1.5	9.1	3.75	1.5	9.4
		G5	3.75	1.5	10.2	3.75	1.5	10.4
	max	G6	3.75	1.5	12.9	3.75	1.5	12.9

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