BWFP 1010-6

A — FUEL AS FIRED

SAMPLES			
ANALYSES			
COAL SOURCE: MINE			
CLASS			
GROUP			
SEAM			
DISTRICT			
COUNTY			
STATE			UTAH
SIZE		-5/8"x0	-5/8"x0
GRINDABILITY		55	48
SURFACE MOISTURE, %			
ASH SOFT. TEMP., F (REDUCING)		2350	2215(H=W
PROXIMATE ANALYSIS: MOISTURE, TOTAL		18.8	8.3
VOLATILE MATTER		35.5	37.1
FIXED CARBON		37.9	40.6
ASH		7.8	14.0
TOTAL		100.0	100.0

ULTIMATE ANALYSIS: FUEL	PULV.DES WT.	RANGE PC WT.	COAL "F" WT.	PERF.COAL WT.
S 01				
ASH		8.0-16.0	7.81	14.00
S		0.4- 0.7	0.93	0.55
H_2		4.3- 4.9	4.13	4.56
C		58.5-64.5	55.60	61.45
CH_4				
C_2H_6				
C_3H_8				
C_4H_{10}				
C_5H_{12}				
C_6H_{14}				
Cl		0-0.04	0.04	0.02
CO_2				
SO_2				
H_2O	12.0	7.4-9.3	18.80	8.30
N_2		1.0-1.5	0.86	1.20
O_2		9.3-10.5	11.83	9.92
TOTAL	43 GRIND		100.00	100.00
BTU/LB	10,700	0,500 to 2,100	9,962	11,010
BTU/CU FT AT 60F 30 IN.HG				

COAL "F" WILL NOT EXCEED 50% BY WT. OF A COAL MIXTURE

* NOT INCLUDING VALVES & STATIC HEAD

▲ AT PULVERIZER INLET

** INCLUDES (-1.5 INCHES WG) FOR STACK EFFECT

UTILITY BOILER PERFORMANCE SUMMARY

BY RJK APPR. DATE 12/2/81

BABCOCK & WILCOX

P23-310-0-150

B — PREDICTED PERFORMANCE

STEAM LEAVING SH, M LB/HR	3965	3965	6100	6100	6600
STEAM LEAVING RH, M LB/HR	3250	3250	5000	5000	5500
AUX. STEAM M LB/HR	0	450	0	450	0
TYPE OF FUEL	PERF.COAL	PERF.COAL	PERF.COAL	PERF.COAL	PERF.COAL
LOAD CONDITION	65%	65%	100%	100%	MCR
EXCESS AIR LEAVING FURN., %	23	23	17	17	17
NO. OF BURNERS IN OPERATION	42	42	42	42	42
HEAT. AVAIL., MBB/HR (FUEL & HEATED AIR)	5494	5908	7968	8374	8500
TOTAL INPUT, MBB/HR (FUEL & HT. CREDITS)	5261	5662	7562	7940	8049
HEAT CREDITS, MBB/HR	6.3	6.5	7.6	7.8	7.9
FUEL INPUT MBB/HR	5255	5655	7555	7932	8040
FUEL (MCFH-NAT. GAS)	477.3	513.6	686.2	720.4	730.2
FLUE GAS ENTERING AIR HTRS.	5274	5611	7241	7600	7705
AIR TO BURNING EQUIPMENT	4765	5064	6538	6862	6954
AIR HEATER LEAKAGE	367	378	477	498	505
PRESSURE, PSIG: STEAM AT SH OUTLET	2440	2440	2515	2515	2640
STEAM AT RH1 INLET	350	330	539	539	590
STEAM AT RH2 INLET					
PRESSURE DROP: REHEATER 1	16	16	25	28	28
REHEATER 2					
ECONOMIZER ▲	11	13	25	29	29
DRUM TO SH OUTLET	68	73	160	172	182
TEMPERATURE, F: GAS: LEAVING SUPERHEATER	1005	1005	1005	1005	1005
LEAVING REHEATER 1	1005	1005	1005	1005	1005
ENTERING REHEATER 1	580	580	620	620	630
LEAVING REHEATER 2					
ENTERING REHEATER 2					
LEAVING ECONOMIZER	686	675	725	730	740
AIR: LEAVING AH (INCL. LKG) P/S	312/276	311/277	311/286	311/289	311/294
LEAVING AH (INCL. LKG) P/S	280/267	280/268	280/276	280/279	280/280
WATER ENTERING ECONOMIZER	490	490	543	543	555
ENTERING UNIT PRI/SEC	74/62	74/63	77/64	78/65	78/65
LEAVING AIR HEATER P ▲/SEC	355/618	375/624	412/635	418/636	420/645
RESISTANCE, IN. OF WATER: GAS: FURNACE & CONVECTION BANKS	2.2	1.9	2.7	3.2	3.1
FLUES TO AH OUTLET	0.9	1.0	1.4	1.5	1.5
AIR HEATER	2.1	2.3	3.8	4.1	4.2
TOT. FROM FURNACE TO AH OUTLET	5.2	5.2	7.9	8.9	8.8
AIR: FUEL BURNERS & WINDBOX **	-0.3	0.0	1.1	1.4	1.4
DUCTS & FLOW METER	1.0	1.2	2.1	2.3	2.3
AIR HEATER	1.1	1.2	2.0	2.3	2.3
TOT. FROM AH INLET TO FURN.	1.8	2.2	5.2	6.0	6.0
HEAT LOSS-EFF., % DRY GAS	4.92	4.84	4.84	4.86	4.98
H_2 & H_2O IN FUEL	5.14	5.14	5.15	5.15	5.16
MOISTURE IN AIR	0.07	0.07	0.07	0.07	0.07
UNBURNED COMBUSTIBLE	0.2	0.2	0.2	0.2	0.2
RADIATION	0.24	0.22	0.17	0.16	0.15
UNACC. FOR & MFRS. MARGIN	1.00	1.00	1.00	1.00	1.00
TOTAL HEAT LOSS	11.57	11.47	11.43	11.44	11.56
*GROSS EFFICIENCY OF UNIT, %	88.43	88.53	88.57	88.56	88.44
HEAT CREDITS ADJUSTMENT, %	0.01	0.01	0.01	0.01	0.01
NET EFFICIENCY A.S.M.E. PTC-4.1, %	88.44	88.54	88.58	88.57	88.45
FUEL EFFICIENCY, % (OUTPUT/FUEL INPUT)	88.55	88.65	88.67	88.66	88.54
PULVERIZERS: NO. IN USE PER BOILER	4 7	5 7	6 7	6 7	6 7
TOTAL POWER, KW HP/TON MOTOR OUTPUT					
% THRU 200 U.S.S. SIEVE	71 76	72 75	71 73	71 72	70 72

PREDICTED PERFORMANCE IS BASED ON COMBUSTION AIR ENTERING UNIT WITH .0067 LB MOISTURE/LB DRY AIR, ON 25.18 IN. HG. BAROMETRIC PRESSURE, ON CONDITIONS & EQUIPMENT GIVEN ON THIS SUMMARY SHEET & ON ARRANGEMENT SHOWN ON DRAWING

C — EQUIPMENT PER UNIT

TYPE RADIANT

SIZE

BBC

DESIGN PRESSURE (SH/RH) - 2975 PSIG/750 PSIG

FURNACE HEATING SURFACE, SQ FT: WATER COOLED SCREEN (CIRCUMFERENTIAL)	
WATER COOLED (PROJECTED)	59,130
SUPERHEATER (PERIPHERAL) 54" CENTERLINE	23,244
SUPERHEATER (PERIPHERAL) 24" CENTERLINE	35,665
SUPERHEATER (PROJECTED)	4,367
TOTAL FURNACE HEATING SURFACE	122,406
CONVECTION HEATING SURFACE, SQ FT: SATURATED (CIRCUMFERENTIAL)	13,035
SUPERHEATER (CIRCUMFERENTIAL)	279,082
REHEATER 1 (CIRCUMFERENTIAL)	300,263
REHEATER 2 (CIRCUMFERENTIAL)	
ECONOMIZER	99,902
TOTAL CONVECTION HEATING SURFACE	692,282
TOTAL FURN. & CONV. PRESSURE PART. HTG. SURF.	814,688
FLAT PROJECTED FURNACE HEATING SURFACE: TO FACE OF PLATENS (24" CENTERLINE)	87,405
TO FACE OF CONVECTION SURFACE (12" CENTERLINE)	125,510
FURNACE VOLUME, CU FT	962,055
AIR HEATER: TYPE REGENERATIVE-SECONDARY NO. 2-33-1/2 VI-64	
TOTAL HEATING SURFACE, SQ FT	1,047,800
TYPE: REGENERATIVE-PRIMARY NO. 2-24-1/2 VI-44	
TOTAL HEATING SURFACE, SQ FT	135,600

FUEL BURNER: TYPE DUAL REGISTER

NO. 48 (6 BURNERS PER PULVERIZER)

PULVERIZER: TYPE MPS SIZE 89GR NO. 8

CAPACITY OF 6 PULV. IS 6600 M LB STEAM/HR BASED ON 48 GRIND 11,010 BTU COAL AT 70 % THRU 200 U.S.S. SIEVE

FOR 113.3 M LB COAL/PULV.-HR AT 70 % THRU 200 U.S.S. SIEVE MIN. GRIND IS 43. MAXIMUM TOTAL MOISTURE IS 12 % REQUIRING 465 F AIR

22% TOTAL MOISTURE COAL REQUIRES 540 F AIR.

STEAM TEMP. CONTROL: SUPERHEAT BY SPRAY ATTEMPERATION

REHEAT BY GAS BIASING

UNIT CONSTRUCTION FEATURES: MEMBRANE WALL

BALANCE DRAFT

INDOOR UNIT

"AS SOLD" ARRANGEMENT

*CORRESPONDING TO ANB. METHOD PAR. 1.07 A.S.M.E. PTC-4.1

REVISIONS NO.	DESCRIPTION	BY	DATE

INTERMOUNTAIN POWER PROJECT

Design

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