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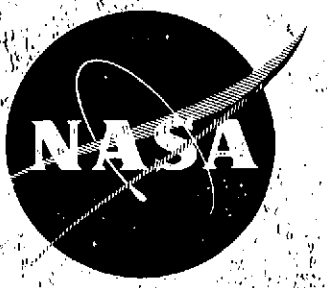


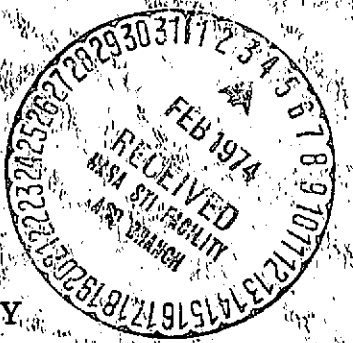
DESIGN OF H_2-O_2 SPACE SHUTTLE APU

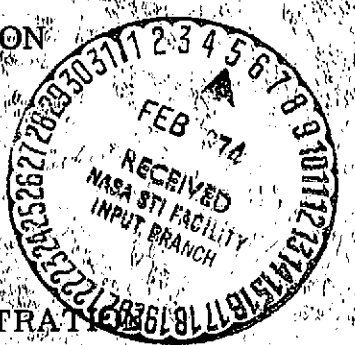
(VOLUME 2 - APPENDIXES)

January 1974

by E. Harris and Staff

AIRESEARCH MANUFACTURING COMPANY
OF CALIFORNIA,
A DIVISION OF THE GARRETT CORPORATION





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Project Manager, H. M. Cameron, NASA-Lewis Research Center, Cleveland, Ohio 44135

16. Abstract

The H_2-O_2 Space Shuttle auxiliary power unit (APU) program is a NASA-Lewis effort aimed at hardware demonstration of the technology required for potential use on the Space Shuttle. It has been shown that a hydrogen-oxygen power unit (APU) system is an attractive alternate to the Space Shuttle baseline hydrazine APU system for minimum weight. It has the capability for meeting many of the heat sink requirements for the Space Shuttle vehicle, thereby reducing the amount of expendable evaporants required for cooling in the baseline APU. Volume I of this report covers preliminary design and analysis of the current reference system and detail design of the test version of this reference system. Combustor test results are also included. Volume II contains (1) the results of the analysis of an initial version of the reference system in Appendix A and (2) the computer printouts of system performance in Appendix B. The APU consists of subsystems for propellant feed and conditioning, turbopower, and control. Propellant feed and conditioning contains all heat exchangers, valves, and the combustor. The turbopower subsystem contains a two-stage partial-admission pressure-mdoulated, 400-hp, 63,000-rpm turbine, a 0- to 4-g lubrication system, and a gearbox with output pads for two hydraulic pumps and an alternator (alternator not included on test unit). The electronic control functions include (1) regulation of speed and system temperatures; and (2) start-and-stop sequences, overspeed (rpm) and temperature (TIT) limits, fail-safe provisions, and automatic shutdown provisions.

17. Key Words (Suggested by Author(s))	18. Distribution Statement
Auxiliary Power Unit Hydrogen-Oxygen	Unclassified-unlimited

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FOREWORD

The H_2-O_2 Space Shuttle auxiliary power unit (APU) program is a NASA-Lewis effort aimed at hardware demonstration of the technology required for potential use on the Space Shuttle. Use of such a system on the Space Shuttle would provide significant cost and weight advantages over the current baseline design.

This program is being conducted under the direction of Harry M. Cameron, Project Manager. It is a follow-on effort to two study programs conducted by NASA-Lewis under Contracts NAS 3-14407 and NAS 3-14408. The results of these studies were reported in the following NASA Contractor Reports: NASA CR-2001 and NASA CR-1994, 1995, 1996, 1997, 1993, and 1928.

This report is submitted in two volumes. Volume I covers the work to date in the design of the APU. Volume II contains the appendixes. Initial activities showed that the initial reference APU design could be modified to reduce system uncertainties; these analyses for the initial reference system are summarized in Appendix A. A new reference system was defined; this design, along with that of the test unit, is described in Volume I of this report. Appendix B of Volume II contains the steady-state system analysis.

The requirements of NASA Policy Directive NPD 2220.4 (September 14, 1970) regarding the use of SI units have been waived in accordance with the provisions of paragraph 5d of that Directive by the Director of Lewis Research Center.

Distribution of this report is provided in the interest of information exchange. Responsibility for the contents resides in the author or organization that prepared it.

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ILLUSTRATIONS (Continued)

ILLUSTRATIONS (Continued)

ILLUSTRATIONS (Continued)

ILLUSTRATIONS (Continued)

ILLUSTRATIONS (Continued)

TABLES

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APPENDIX A

INITIAL REFERENCE SYSTEM STUDY SUMMARY

The NASA initial reference system, shown in fig. A-1, differed from the system studied under NAS 3-14408, shown in fig. A-2. The initial activity was associated with modification of the system analysis computer program to model the NASA reference system. Because of these differences, parametric and sizing studies were conducted to define new design points for the components. Variables considered in these computer studies included turbine temperature; shaft rpm; design life; materials; system inlet temperature; case drain hydraulic cooling; full flow hydraulic cooling; and jet pump, heat exchanger, valve, and turbine sizing. These studies showed that the operation of the system was sensitive even to small variations of design values, particularly recycle loop pressure drop, preheater size, cooling load, and jet pump performance.

Figs. A-3 and A-4 show typical steady-state system analysis computer printouts. The design match computer model was used to investigate the design variables, and the off-design model to evaluate a fixed design at various operating conditions. Fig. A-5 shows a selection of a design point based upon variation of design values. The inlet pressure was first varied and then fixed at 675 psi. The jet pump corrected flow (size) next was varied and then fixed. Finally, the recycle value ΔP was examined parametrically.

These studies resulted in a design that met the design requirements. Figs. A-6 to A-9 show pertinent parameters for this design over the anticipated operating range.

The status reached in the transient version of the system computer model is shown in fig. A-10. The turbine speed control loop was completed, and a typical speed transient is shown in fig. A-11.

The heat exchanger, valve, jet pump, and turbine specifications were essentially complete when the program was redirected to evaluate a new system that eliminated the jet pump.

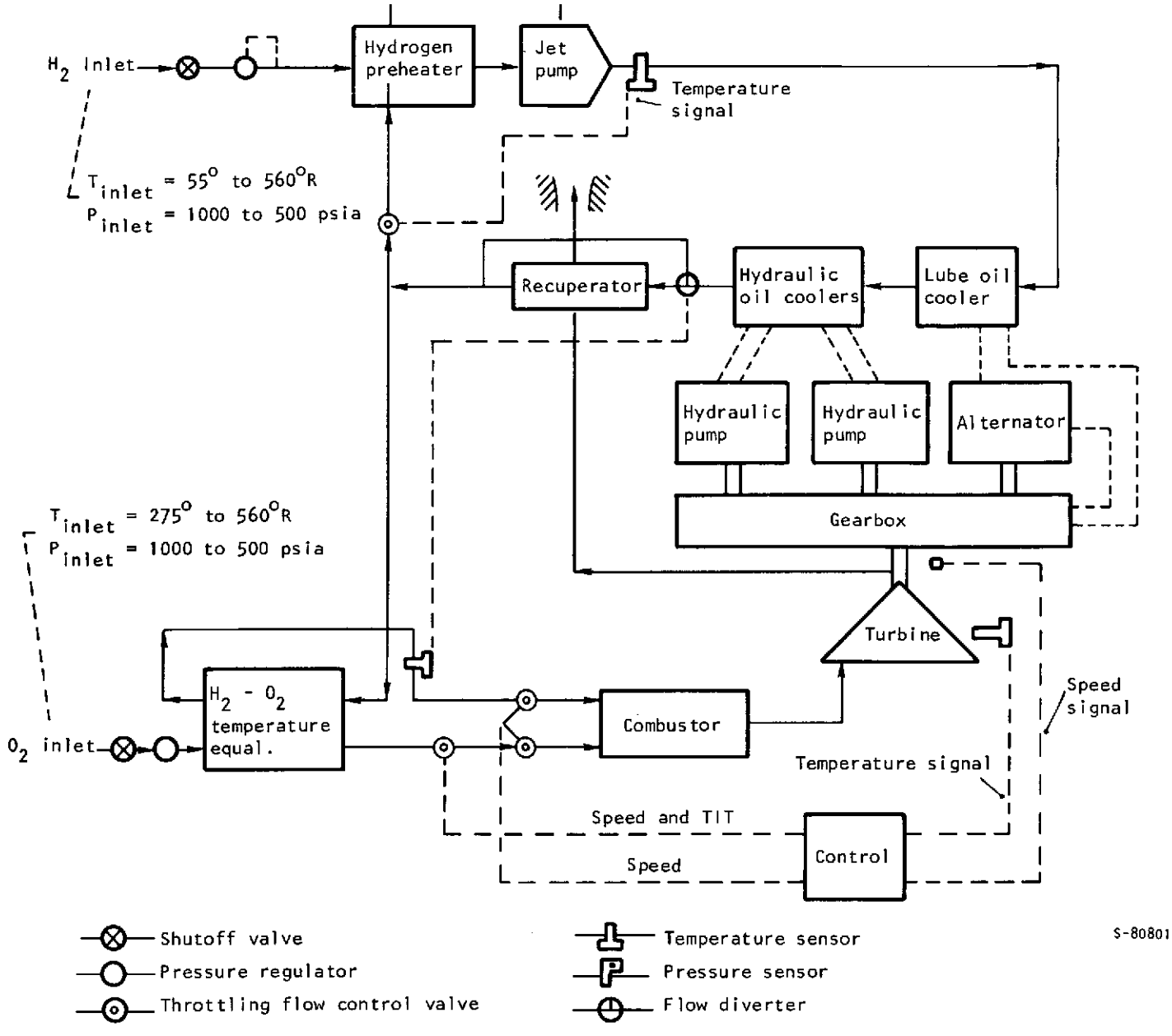

Figure A-1.--Initial Reference System Schematic.

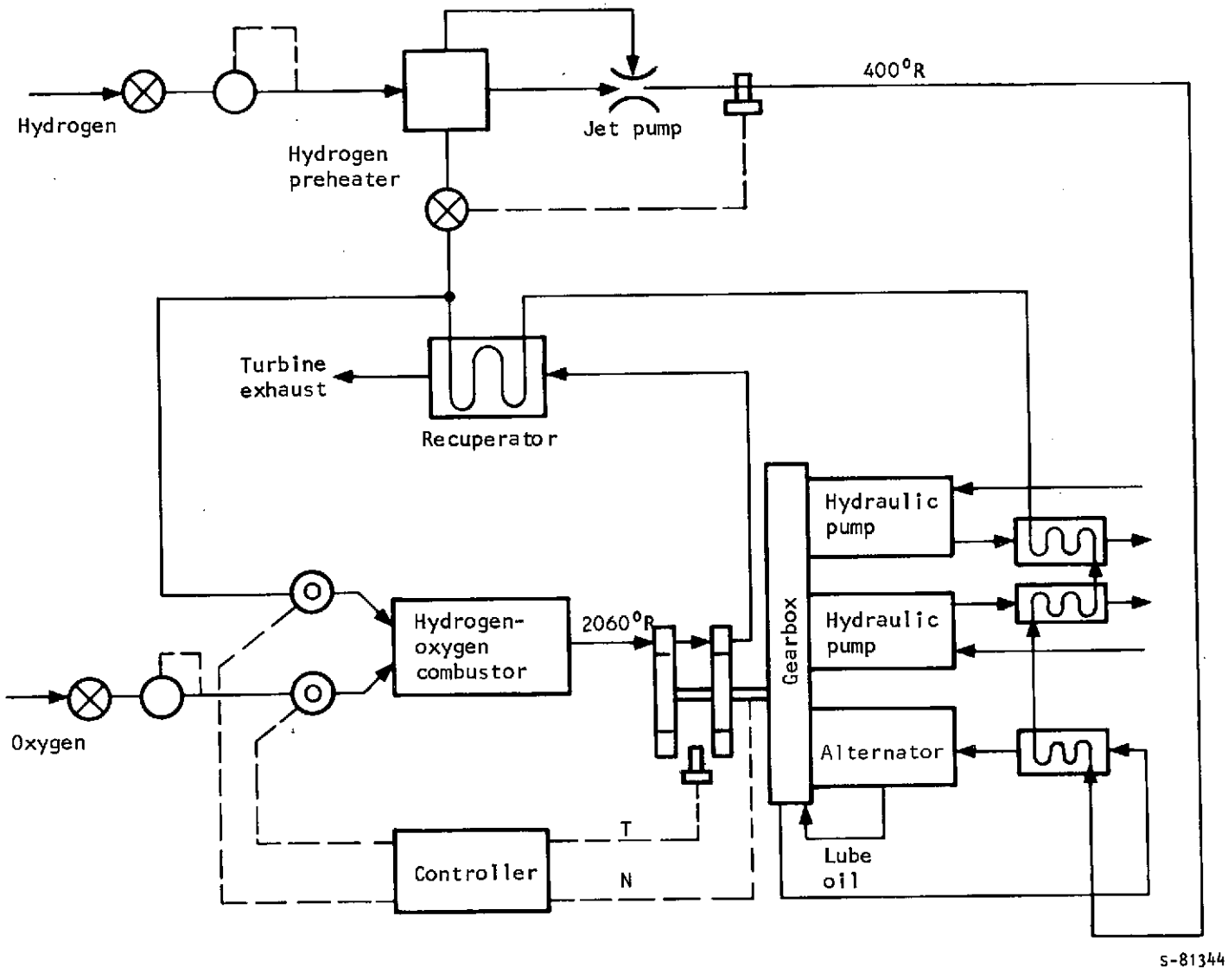

Figure A-2.--NAS 3-14408 Baseline System Schematic.

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PERFORMANCE OF THE SELECTED DESIGN POINT
16 AUG 72 00:55:26 PAGE 1 OF 2

• CONDITION • DMATCH AMBIENT PRESSURE 14.70 PSIA

• UNITS • AREA=SQ IN, H=BTU/LB, P=PSIA, Q=BTU/MIN, T=DEG R, W=LB/MIN

DRIVE POWER			HP LOSS	HYDRAULIC
HYD PUMP	ALTERNATOR	LUBE PUMP	GEAR BOX	OIL PRESS
400.00	.00	4.00	24.00	3000.00

USEFUL HYDRAULIC PUMP HP = 360.00

TURBINE OUTPUT POWER = 428.00 O/F = .716 SPC = 2.029

PROPELLANT SUPPLY CONDITION		
PROPELLANT	HYDROGEN	OXYGEN
FLOW RATE	8.434	6.041
PRESSURE	900.00	900.00
TEMPERATURE	55.00	300.00
ENTHALPY	31.2	35.4

PRESSURE REGULATORS		
PRESSURE IN	900.0	900.0
PRESSURE OUT	675.0	675.0
TEMPERATURE IN	55.0	300.0
ENTHALPY IN	-39.33	35.43
EFFECTIVE AREA	.0010	.0001

	CONTROL VALVE		TEMP TRIM VALVE
PRESSURE IN	487.8	487.8	662.3
PRESSURE OUT	427.8	427.8	487.8
TEMPERATURE IN	688.9	661.8	661.8
EFFECTIVE AREA	.0800	.0141	.0078

	RECYCLE VALVE	BYPASS VALVE
PRESSURE IN	503.5	511.2
PRESSURE OUT	488.3	504.3
TEMPERATURE IN	708.2	443.4
EFFECTIVE AREA	.1796	.0000

CONTROL PARAMETERS	
TURBINE SPEED	63000.0
INTERTURBINE TEMP.	1660.74
JET PUMP TEMPERATURE	399.919
COMBUSTOR INLET TEMP.	688.92

COMBUSTOR INFORMATION			
HYDROGEN FLOW	8.434	OXYGEN FLOW	6.041
PRESSURE IN	397.8	PRESSURE OUT	397.8
TEMPERATURE IN H2	688.9	TEMPERATURE IN O2	661.8

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PERFORMANCE OF THE SELECTED DESIGN POINT
16 AUG 72 00:55:26 PAGE 2 OF 2

• CONDITION • DMATCH AMBIENT PRESSURE 14.70 PSIA

TURBINE INFORMATION

INLET FLOW	14.475	SPECIFIC HEAT RATIO	1.373
PRESSURE IN	396.9	PRESSURE OUT	16.9
TEMPERATURE IN	1960.0	TEMPERATURE OUT	1366.0
ENTHALPY IN	4450.7	ENTHALPY OUT	3183.4
PRESSURE RATIO	23.52	EFFICIENCY	.526
A1	.1503	A2	.2313
A3	.5486	A4	.6039

JET PUMP PERFORMANCE

	FLOW PARA	FLOW	PRESSURE	TEMPERATURE
PRIMARY JET	190.92	8.43	671.35	512.50
SECONDARY JET	181.71	10.28	483.78	312.25
RESULTANT		18.72	520.77	399.92

FLOW PARA RATIO .952 P PRI/P SEC 1.3877
JET PUMP RISE 1.0765 PRI FLOW PARA 7.6000 JET PUMP AREA .0374

RECUPERATOR INFORMATION

	FLOW	PRE IN	P OUT	T IN	T OUT	H IN	H OUT	EFF
COLD SIDE	18.717	511.2	504.3	443.4	708.2	1463.5	2403.3	.237
HOT SIDE	14.475	16.8	15.1	1366.0	780.7	3183.4	1968.0	.634

• TURBINE EXHAUST OVERBOARD PRESSURE • 14.70

TEMPERATURE EQUALIZER INFORMATION

	FLOW	PRE IN	P OUT	T IN	T OUT	H IN	H OUT	EFF
COLD SIDE	6.041	674.6	662.3	300.0	661.8	46.8	141.0	.884
HOT SIDE	8.434	500.7	487.9	708.2	688.9	2403.3	2335.7	.047

H2 PREHEATER INFORMATION

	FLOW	PRE IN	P OUT	T IN	T OUT	H IN	H OUT	EFF
COLD SIDE	8.434	675.0	671.6	55.0	512.5	-43.9	1716.3	.720
HOT SIDE	10.283	487.6	484.5	708.2	312.3	2403.0	957.6	.638

SCALE FACTOR 2.000

LUBE OIL COOLER INFORMATION

	FLOW	PRE IN	P OUT	T IN	T OUT	H IN	H OUT	EFF
COLD SIDE	18.717	520.2	516.3	399.9	416.7	1300.3	1363.8	.139
HOT SIDE	30.000	200.0	198.3	520.6	432.8	.0	.0	.727

HEAT REJECTED	ALTERNATOR	GEAR BOX	LUBE PUMP	TOTAL
	.0	1018.2	169.7	1188.9

HYDRAULIC OIL COOLER INFORMATION

	FLOW	PRE IN	P OUT	T IN	T OUT	H IN	H OUT	EFF
COLD SIDE	18.717	515.8	511.8	416.7	443.4	1363.8	1463.5	.200
HOT SIDE	43.0	200.0	197.3	550.0	455.2	.0	.0	.711

HEAT REJECTED 1866.35

11

Figure A-3.--Typical Design Match.

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PERFORMANCE OF THE SELECTED DESIGN POINT
21 AUG 72 11:47:51 PAGE 1 OF 2

• CONDITION • BYPASS AMBIENT PRESSURE 14.70 PSIA

• UNITS • AREA=SQ IN, H=BTU/LB, P=PSIA, Q=BTU/MIN, T=DEG R, W=LB/MIN

DRIVE POWER HYD PUMP	DRIVE POWER ALTERNATOR	DRIVE POWER LUBE PUMP	HP LOSS GEAR BOX	HYDRAULIC OIL PRESS
2.00	.00	4.00	24.00	3000.00

USEFUL HYDRAULIC PUMP HP = -38.00

TURBINE OUTPUT POWER = 30.00 O/F = .679 SPC =59.671

PROPELLANT SUPPLY CONDITION	HYDROGEN	OXYGEN
PROPELLANT	1.184	.805
FLOW RATE	900.00	900.00
PRESSURE	55.00	300.00
TEMPERATURE	31.2	35.4
ENTHALPY		

PRESSURE REGULATORS		
PRESSURE IN	900.0	900.0
PRESSURE OUT	675.0	675.0
TEMPERATURE IN	55.0	300.0
ENTHALPY IN	-39.33	35.43
EFFECTIVE AREA	.0010	.0001

	CONTROL VALVE		TEMP TRIM VALVE
PRESSURE IN	672.5	656.1	674.7
PRESSURE OUT	60.0	59.9	656.1
TEMPERATURE IN	750.0	772.4	772.4
EFFECTIVE AREA	.0058	.0010	.0029

	RECYCLE VALVE	BYPASS VALVE
PRESSURE IN	672.8	672.8
PRESSURE OUT	672.4	672.8
TEMPERATURE IN	773.3	545.1
EFFECTIVE AREA	.1168	.5289

CONTROL PARAMETERS	
TURBINE SPEED	63000.0
INTERTURBINE TEMP.	1703.62
JET PUMP TEMPERATURE	399.922
COMBUSTOR INLET TEMP.	750.00

COMBUSTOR INFORMATION			
HYDROGEN FLOW	1.184	OXYGEN FLOW	.805
PRESSURE IN	55.4	PRESSURE OUT	55.4
TEMPERATURE IN H2	750.0	TEMPERATURE IN 02	772.4

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PERFORMANCE OF THE SELECTED DESIGN POINT
21 AUG 72 11:47:51 PAGE 2 OF 2

• CONDITION • BYPASS AMBIENT PRESSURE 14.70 PSIA

TURBINE INFORMATION			
INLET FLOW	1.989	SPECIFIC HEAT RATIO	1.366
PRESSURE IN	55.2	PRESSURE OUT	14.8
TEMPERATURE IN	1960.0	TEMPERATURE OUT	1667.6
ENTHALPY IN	4519.2	ENTHALPY OUT	3879.7
PRESSURE RATIO	3.74	EFFICIENCY	.901
A1	.1503	A2	.2515
A3	.5486	A4	.6039

JET PUMP PERFORMANCE	FLOW PARA	FLOW	PRESSURE	TEMPERATURE
PRIMARY JET	28.92	1.18	674.91	596.17
SECONDARY JET	17.80	1.20	672.35	221.76
RESULTANT		2.38	672.98	399.92

FLOW PARA RATIO .615 P PRI/P SEC 1.0038
JET PUMP RISE 1.0009 PRI FLOW PARA 1.1468 JET PUMP AREA .0374

RECUPERATOR INFORMATION	FLOW	PRE IN	P OUT	T IN	T OUT	H IN	H OUT	EFF
COLD SIDE	.636	672.8	672.8	545.1	1398.6	1835.0	4519.3	.901
HOT SIDE	1.989	14.8	14.7	1667.6	1224.0	3879.7	2025.1	.901

• TURBINE EXHAUST OVERBOARD PRESSURE • 14.70

TEMPERATURE EQUALIZER INFORMATION	FLOW	PRE IN	P OUT	T IN	T OUT	H IN	H OUT	EFF
COLD SIDE	.805	675.0	674.7	300.0	772.4	45.7	365.9	.894
HOT SIDE	1.184	672.7	672.5	773.3	750.0	2835.0	2955.3	.249

H2 PREHEATER INFORMATION	FLOW	PRE IN	P OUT	T IN	T OUT	H IN	H OUT	EFF
COLD SIDE	1.184	675.0	674.9	55.0	595.2	-43.9	2.14.0	.703
HOT SIDE	1.195	672.4	672.4	773.3	221.8	2835.0	995.6	.784

SCALE FACTOR 2.000

LUBE OIL COOLER INFORMATION	FLOW	PRE IN	P OUT	T IN	T OUT	H IN	H OUT	EFF
COLD SIDE	2.380	673.0	672.9	399.9	535.5	1301.6	1801.0	.644
HOT SIDE	30.000	200.0	198.3	649.4	574.7	.0	.0	.299

HEAT REJECTED	ALTERNATOR	GEAR BOX	LUBE PUMP	TOTAL
	.0	1018.2	169.7	1188.4

HYDRAULIC OIL COOLER INFORMATION	FLOW	PRE IN	P OUT	T IN	T OUT	H IN	H OUT	EFF
COLD SIDE	2.380	672.9	672.8	535.5	545.1	1801.0	1839.0	.604
HOT SIDE	43.0	200.0	197.3	550.0	545.9	.0	.0	.284

HEAT REJECTED 80.95

Figure A-4.--Typical Off-Design Point.

S-81360

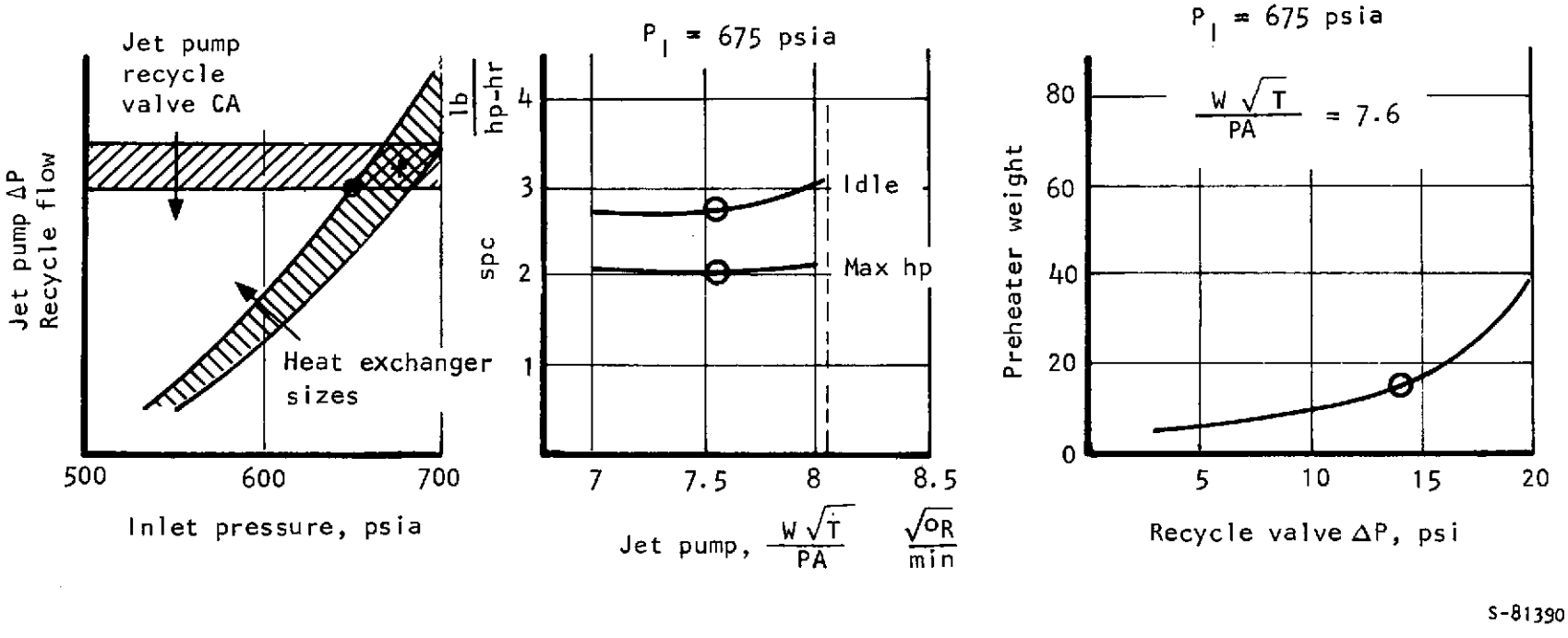


Figure A-5.--Design Point Selection Study.

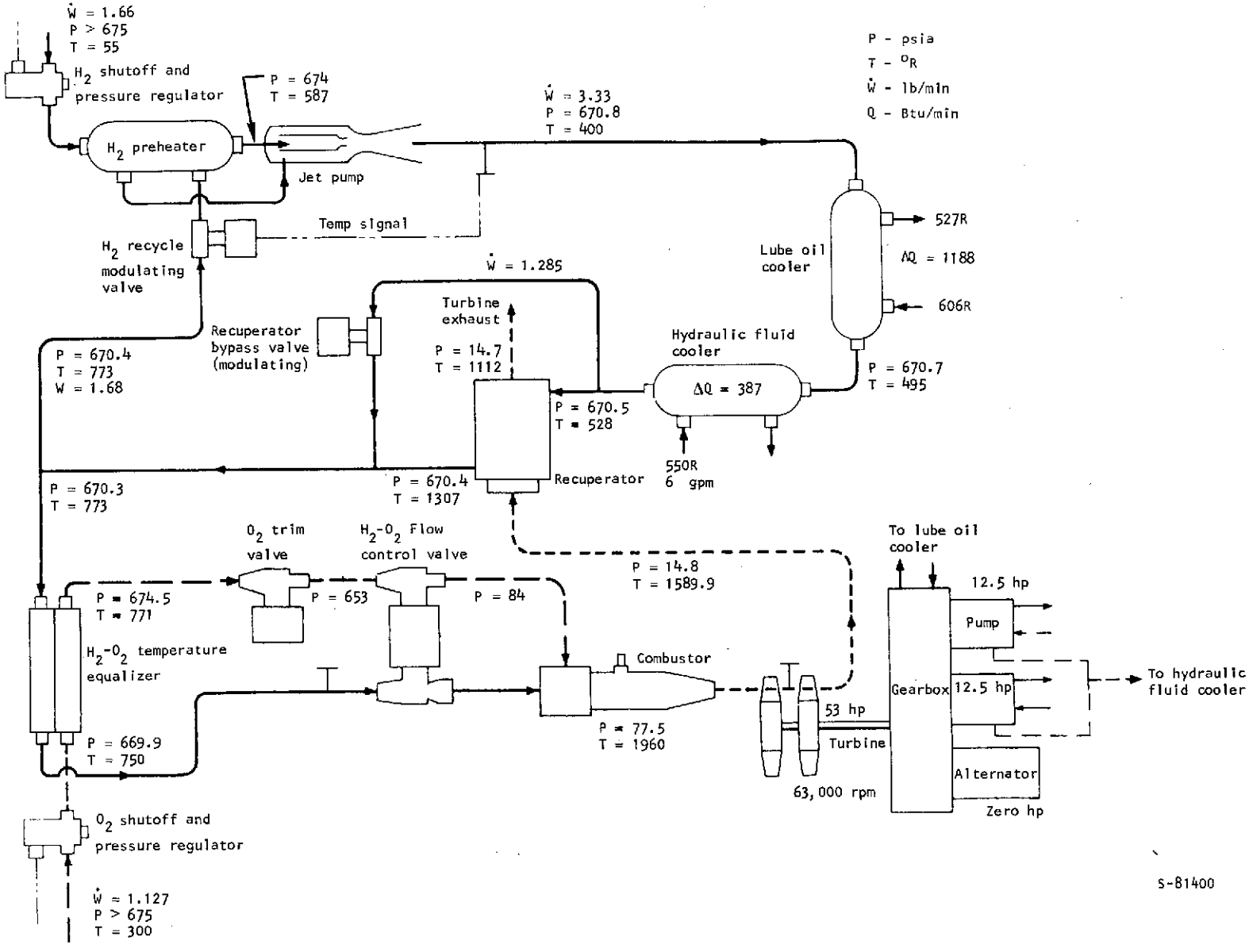


Figure A-6.--Operational Data at Sea Level Idle Power.

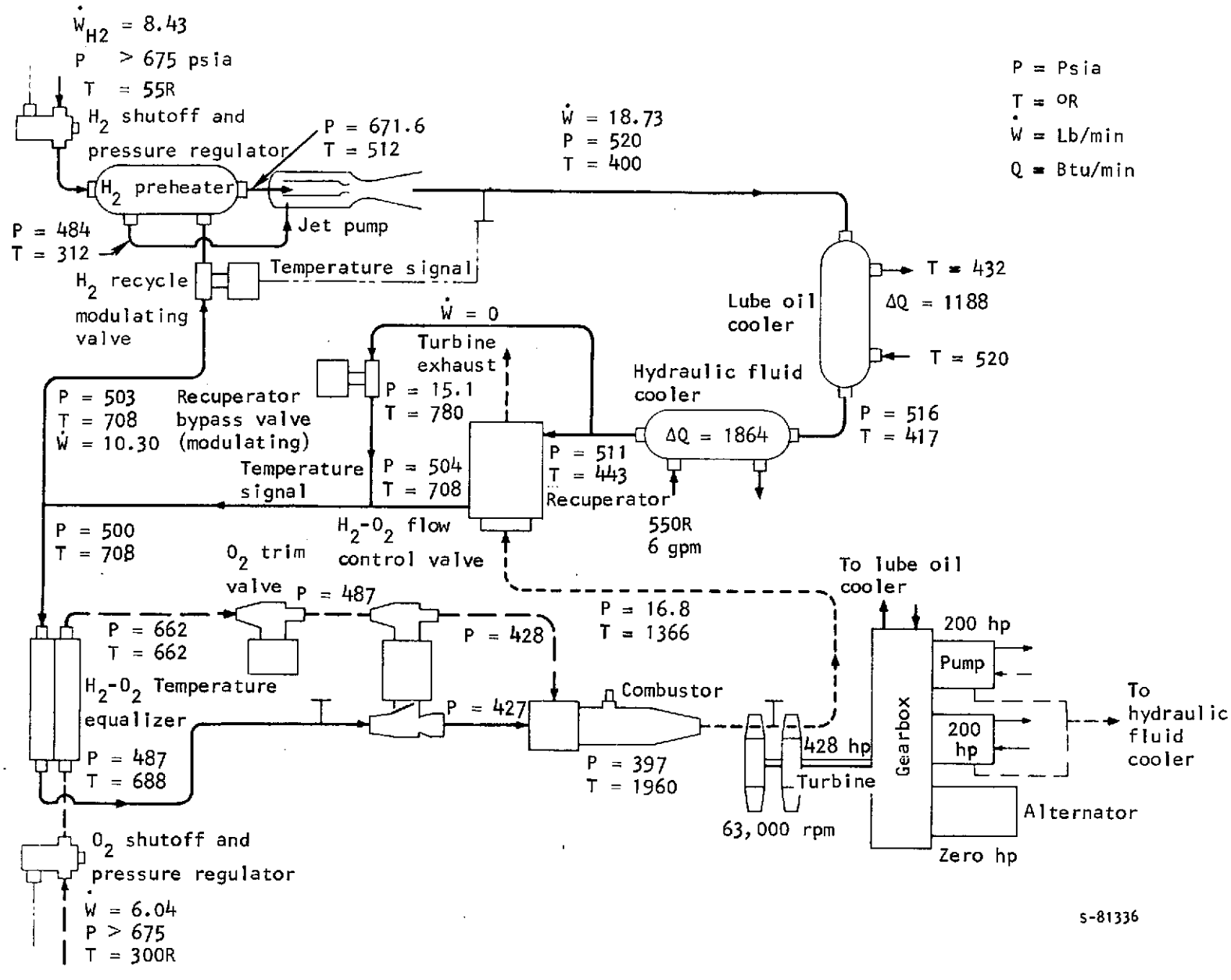
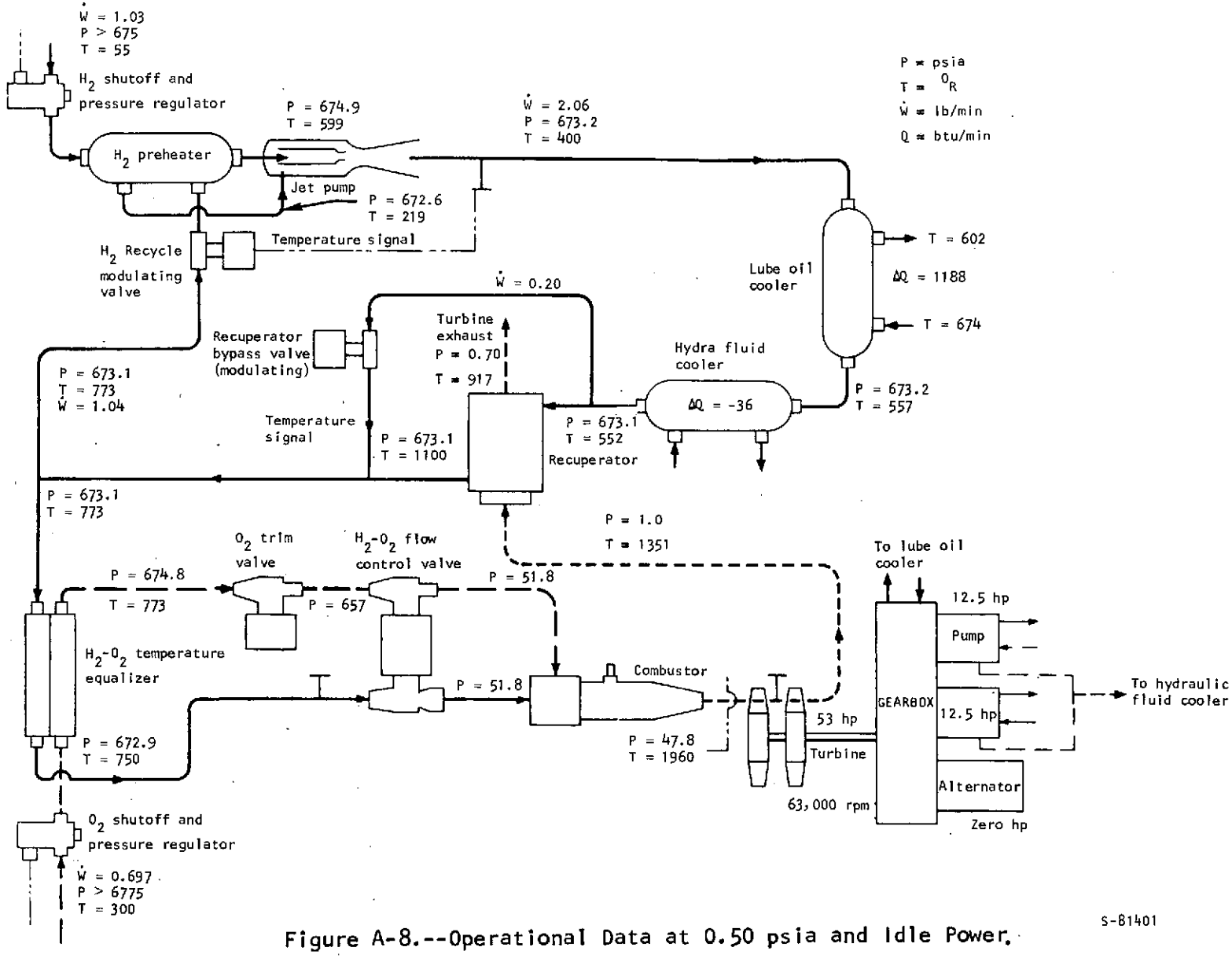


Figure A-7.--Operational Data at Sea Level Full Power.



S-81401

Figure A-8.--Operational Data at 0.50 psia and Idle Power.

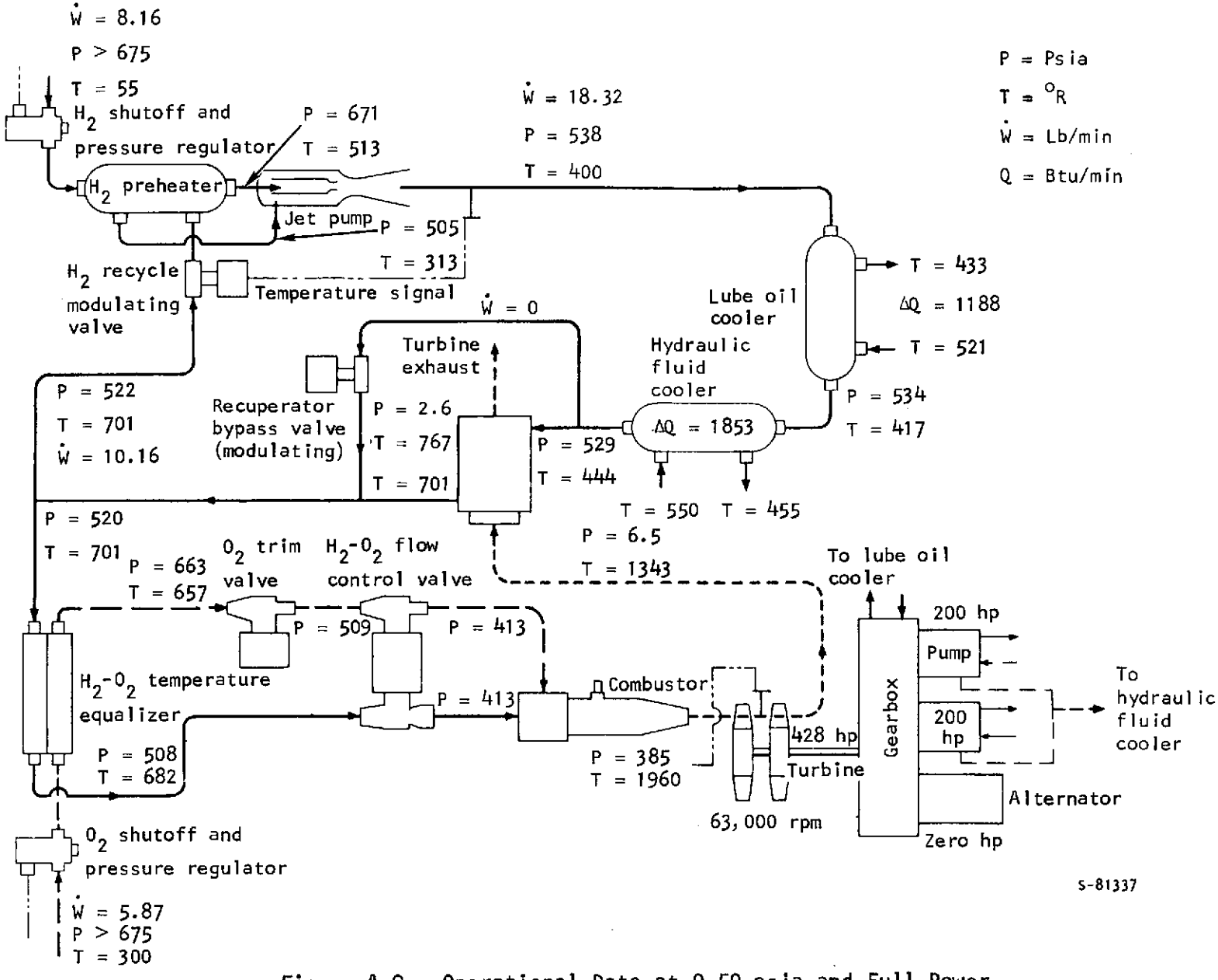


Figure A-9.--Operational Data at 0.50 psia and Full Power.

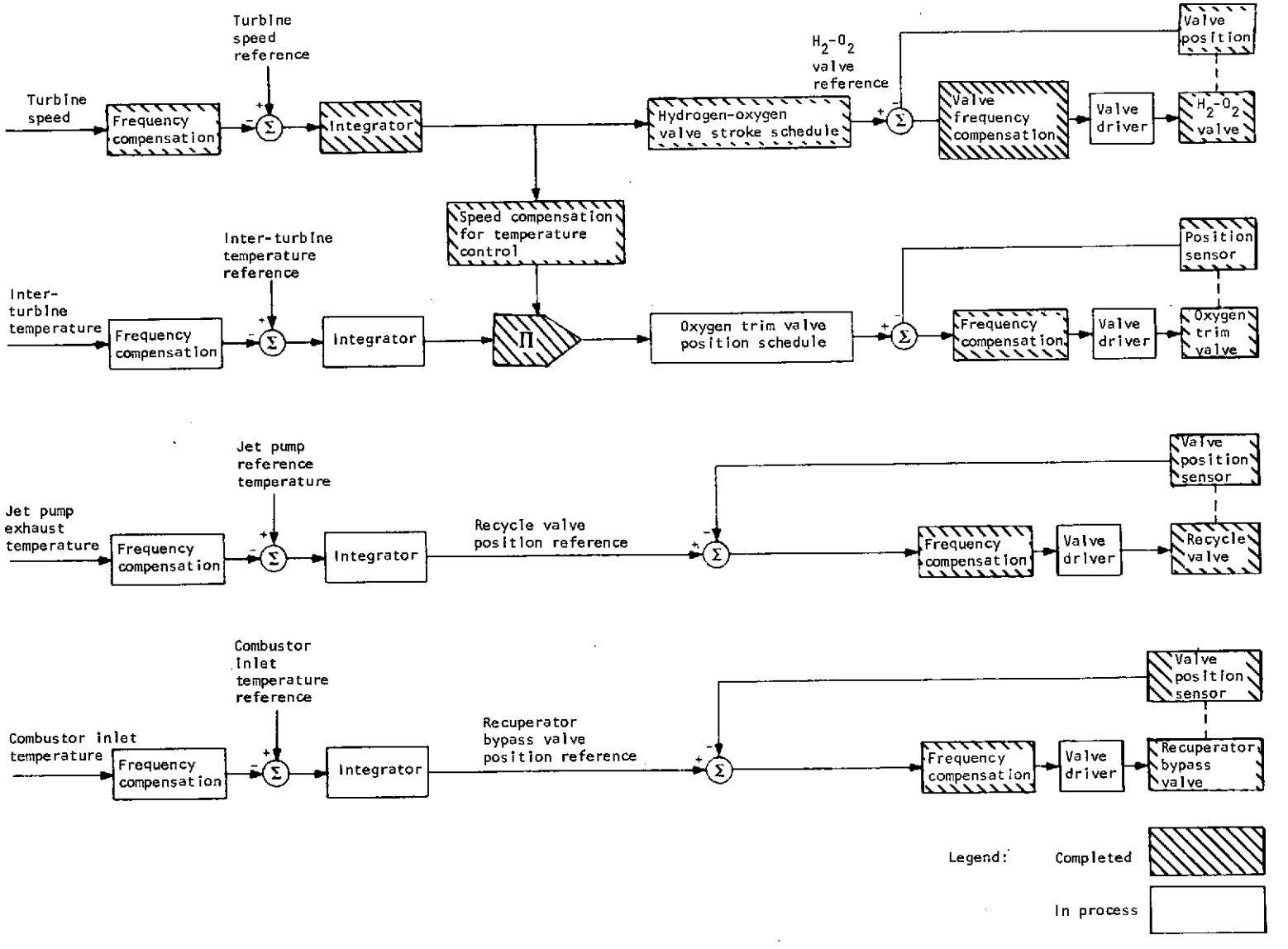


Figure A-10.--Control Definition Status.

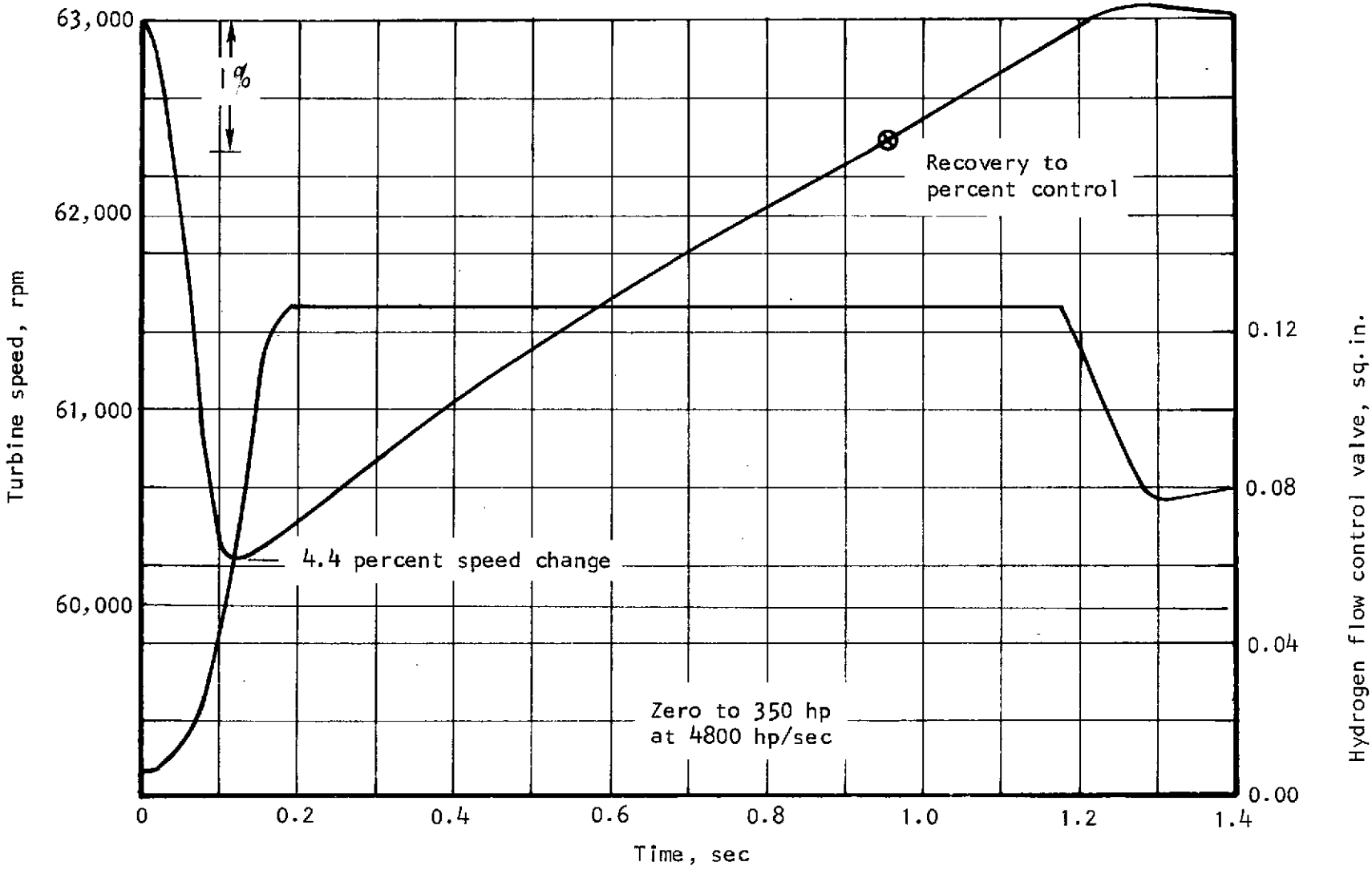


Figure A-11.--Typical Transient Output.

APPENDIX B

STEADY-STATE COMPUTER SYSTEM ANALYSIS

This appendix contains steady-state computer results made for the task 8 feasibility analysis and subsequent system analysis studies. The printout notation is shown in fig. B-1. The hydraulic oil case drain model used assumes that 30 hp (constant) was rejected to the case drain and that 0 to 20 hp was rejected to the full flow, corresponding to 0 to 350 hp useful output. The units used are:

Density--lb/cu ft

Enthalpy--btu/lb

Pressure--psi

Temperature--^{o}R

Power--hp

Area--sq in.

AMM is the average molecular weight.

The conditions for the cases run are shown in table B-1. The cases labeled I, II, and III were run in December 1972 as part of the alternate system preliminary design. These cases were used as a basis for the formulation of the component specifications. The cases labeled IV were run to verify that a small change in the turbine nozzle area was not significant. The cases labeled V and VI were run after the control PDR to define extreme operating conditions expected during test.

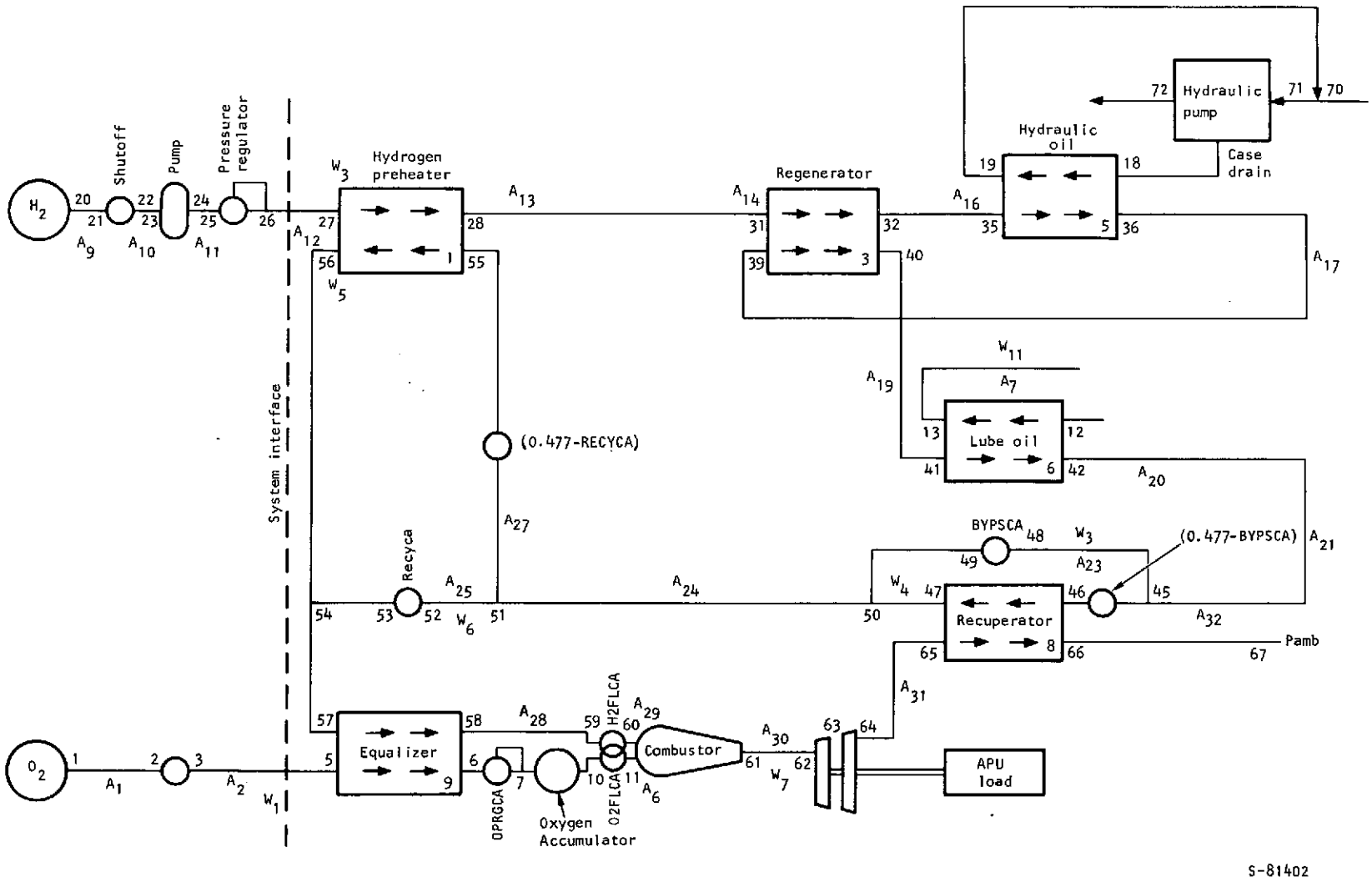


Figure B-1.--Computer Program Notation.

TABLE B-1

COMPUTER CASES

Hydraulic power, hp	0	5	10	90	180	270	350	Ambient pressure, psia	Hydraulic temperature, °F
Gearbox power, hp	30	35	41	125	220	315	400		
I. Baseline cases									
	1,1B	2,2B	3,3B	4,4B	5	6	7	0	550
	8,8B	9,9B	10,10B	11,11B	12	13	14	14.7	550
	15,15B	16,16B	17,17B	18,18B	19,19B	20,20B	21	0	750
	22,22B	23,23B	24,24B	25,25B	26,26B	27,27B	28,28B	14.7	750
	29,29B	30,30B	31,31B	32	33	34		0	460
	36B	37B	38B	39B	40B	41B	42B	14.7	830
II. 250°R H_2 inlet with 350 Btu/lb extracted between 36 and 39									
	43	44	46	46	--	--	--	14.7	750
III. 70,000 rpm and 1750°R intra-turbine temperature									
	52	51	--	--	--	--	50	New gearbox (reduced losses)	
	55	54	--	--	--	--	53	Old gearbox (increased losses)	
IV. Minor change in turbine nozzle area									
	56B	--	--	57B	58B	59	60	0	650
	61B	--	--	62B	63B	64	65	14.7	650
V. Check cases after control PDR									
	66B	--	--	--	--	--	67	0	780
	68B	--	--	--	--	--	69	14.7	780
VI. 519°R H_2 inlet after control PDR (full recuperator bypass)									
	70FB	--	--	--	--	--	71FB	0	780
	72FB	--	--	--	--	--	73FB	14.7	780

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:43:41

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	28.26	SPC	3.625	AMW	3.00
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	29.74	O/F	.486		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	.282		

TURBINE INFORMATION

FLOW	1.813	PRESSURE	52.66	1.48	EFFICIENCY 1ST	.417	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.364	TEMPERATURE	1931.0	1385.1	EFFICIENCY 2ND	.378	A2	.2335	A4	.6096
PRESSURE RATIO	35.69	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.460	HP	58.00	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1219.32	706.39	1060.93	1060.93	1060.93
PRESSURE IN	573.71	574.12	897.88	347.20	573.43
PRESSURE OUT	573.71	574.12	347.21	56.88	56.74
EFFECTIVE AREA	1.00000	.00000	.00064	.00166	.00829
FLOW	1.081	.000	.593	.593	1.220

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.220	574.99	574.97	55.00	160.26	-45.5	379.8	.090	1.000	1.000	518.64 BTU/MIN
	HOT SIDE	.138	573.73	573.73	1219.32	70.73	4185.2	21.1	.986	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.220	574.96	574.86	160.26	409.80	379.8	1338.3	.450	1.000	1.000	1169.05 BTU/MIN
	HOT SIDE	1.220	574.65	574.34	714.80	432.64	2427.9	1424.2	.509	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.220	574.84	574.69	409.80	714.94	1338.3	2428.4	.950	1.000	1.000	1329.46 BTU/MIN
	HOT SIDE	57.000	200.00	199.98	731.13	690.69	.0	.0	.126	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.220	574.32	574.16	432.64	706.39	1424.2	2398.4	.879	1.000	1.000	1188.12 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	743.92	659.99	.0	.0	.270	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.220	573.83	573.77	706.39	1219.32	2398.4	4185.2	.756	1.000	1.000	2179.22 BTU/MIN
	HOT SIDE	1.813	1.28	.63	1385.06	811.93	.0	.0	.844	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.220	573.70	573.46	1089.01	1060.93	3731.3	3633.7	.036	1.000	1.000	-119.05 BTU/MIN
	HOT SIDE	.593	900.00	899.97	300.00	1060.93	35.4	235.8	.964	1.000	1.000	1 PASS PARALL

Computer Case 1 (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.323	432.637	.243	1424.230
2	.000	.000	.000	.000	42	574.160	706.389	.155	2398.417
3	.000	.000	.000	.000	43	574.141	706.389	.155	2398.416
4	.000	.000	.000	.000	44	574.141	706.389	.155	2398.416
5	900.000	300.000	16.648	35.434	45	574.121	706.389	.155	2398.416
6	899.975	1060.932	2.597	235.773	46	573.832	706.389	.155	2398.410
7	897.887	1060.932	2.591	235.775	47	573.774	1219.316	.088	4185.241
8	897.883	1060.932	2.591	235.775	48	574.121	706.389	.155	2398.416
9	347.211	1060.932	1.011	236.412	49	574.121	706.389	.000	.000
10	347.200	1060.932	1.011	236.412	50	573.774	1219.319	.088	4185.250
11	56.880	1060.932	.166	236.758	51	573.740	1219.319	.088	4185.249
12	200.000	743.915	.000	.000	52	573.713	1219.319	.088	4185.249
13	199.994	659.990	.000	.000	53	573.705	.000	.000	.000
14	199.994	659.990	.000	.000	54	573.728	1089.007	.101	3731.269
15	199.994	659.990	.000	.000	55	573.729	1219.319	.088	4185.249
16	200.000	731.133	.000	.000	56	573.728	70.730	2.964	21.094
17	200.000	731.133	.000	.000	57	573.698	1089.007	.101	3731.268
18	200.000	731.133	.000	.000	58	573.457	1060.932	.104	3633.653
19	199.982	690.694	.000	.000	59	573.428	1060.932	.104	3633.652
20	.000	.000	.000	.000	60	56.735	1060.932	.010	3621.481
21	.000	.000	.000	.000	61	52.678	1931.035	.005	6700.618
22	.000	.000	.000	.000	62	52.664	1931.035	.000	.000
23	.000	.000	.000	.000	63	11.706	1665.002	.000	.000
24	.000	.000	.000	.000	64	1.475	1385.056	.000	.000
25	.000	.000	.000	.000	65	1.276	1385.056	.000	.000
26	575.000	55.000	3.984	-45.499	66	.629	811.935	.000	.000
27	574.988	55.000	3.984	-45.500	67	.282	.000	.000	.000
28	574.970	160.255	.683	379.752	68	.000	.000	.000	.000
29	574.966	160.255	.683	379.752	69	.000	.000	.000	.000
30	574.966	160.255	.683	379.752	70	.000	550.000	.000	.000
31	574.961	160.255	.683	379.752	71	.000	690.694	.000	.000
32	574.863	409.797	.256	1338.302	72	.000	691.758	.000	.000
33	574.851	409.797	.256	1338.302	73	.000	.000	.000	.000
34	574.851	409.797	.256	1338.302	74	.000	.000	.000	.000
35	574.839	409.797	.256	1338.302	75	.000	.000	.000	.000
36	574.688	714.936	.153	2428.381	76	.000	.000	.000	.000
37	574.668	714.797	.153	2427.891	77	.000	.000	.000	.000
38	574.668	714.797	.153	2427.891	78	.000	.000	.000	.000
39	574.649	714.797	.153	2427.891	79	.000	.000	.000	.000
40	574.335	432.637	.243	1424.231	80	.000	.000	.000	1.000

Computer Case 1B

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:43:54

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	28.38	SPC	3.903	AMW	3.37
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	29.62	O/F	.670		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	.338		

TURBINE INFORMATION

FLOW	1.952	PRESSURE	53.70	1.63	EFFICIENCY 1ST	.435	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1940.7	1377.2	EFFICIENCY 2ND	.403	A2	.2335	A4	.6096
PRESSURE RATIO	32.98	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.482	HP	58.00	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	875.09	707.28	750.00	750.00	750.00
PRESSURE IN	574.15	574.20	897.39	479.19	573.95
PRESSURE OUT	574.14	574.20	479.20	58.81	58.60
EFFECTIVE AREA	1.00000	.48615	.00071	.00133	.00667
FLOW	1.021	.876	.783	.783	1.168

HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.168	574.99	574.98	55.00	139.64	-45.5	311.6	.103	1.000	1.000	417.25 BTU/MIN
	HOT SIDE	.147	574.16	574.15	875.09	73.40	2987.5	36.6	.978	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.168	574.97	574.88	139.64	397.25	311.6	1290.6	.447	1.000	1.000	1143.87 BTU/MIN
	HOT SIDE	1.168	574.69	574.40	715.43	422.13	2430.1	1384.9	.509	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.168	574.86	574.72	397.25	715.43	1290.6	2430.1	.953	1.000	1.000	1331.48 BTU/MIN
	HOT SIDE	57.000	200.00	199.98	731.17	690.72	.0	.0	.121	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.168	574.39	574.24	422.13	707.28	1384.9	2401.5	.886	1.000	1.000	1187.95 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	743.83	660.00	.0	.0	.261	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.293	574.19	574.19	707.28	1377.09	2401.5	4741.3	****	1.000	1.000	684.91 BTU/MIN
	HOT SIDE	1.952	1.44	.75	1377.20	1210.51	.0	.0	.249	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.168	574.13	573.97	774.15	750.00	2635.9	2551.2	.051	1.000	1.000	-98.88 BTU/MIN
	HOT SIDE	.783	900.00	899.97	300.00	750.00	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

Computer Case 1B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.394	422.129	.249	1384.855
2	.000	.000	.000	.000	42	574.245	707.282	.155	2401.548
3	.000	.000	.000	.000	43	574.227	707.282	.155	2401.547
4	.000	.000	.000	.000	44	574.227	707.282	.155	2401.547
5	900.000	300.000	16.648	35.434	45	574.209	707.282	.155	2401.547
6	899.969	750.000	3.673	160.871	46	574.192	707.282	.155	2401.547
7	897.395	750.000	3.663	160.881	47	574.186	1377.093	.080	4741.268
8	897.389	750.000	3.663	160.881	48	574.199	707.282	.155	2401.547
9	479.197	750.000	1.955	162.402	49	574.186	707.282	.000	.000
10	479.187	750.000	1.955	162.402	50	574.186	875.091	.124	2987.545
11	58.805	750.000	.240	163.979	51	574.164	875.091	.124	2987.545
12	200.000	743.826	.000	.000	52	574.147	875.091	.124	2987.544
13	199.994	660.000	.000	.000	53	574.142	.000	.000	.000
14	199.994	660.000	.000	.000	54	574.155	774.147	.139	2635.869
15	199.994	660.000	.000	.000	55	574.155	875.091	.124	2987.545
16	200.000	731.166	.000	.000	56	574.155	73.396	2.745	36.573
17	200.000	731.166	.000	.000	57	574.135	774.147	.139	2635.868
18	200.000	731.166	.000	.000	58	573.972	750.000	.144	2551.245
19	199.982	690.720	.000	.000	59	573.953	750.000	.144	2551.245
20	.000	.000	.000	.000	60	58.602	750.000	.015	2540.288
21	.000	.000	.000	.000	61	53.714	1940.682	.005	6735.632
22	.000	.000	.000	.000	62	53.700	1940.682	.000	.000
23	.000	.000	.000	.000	63	12.004	1665.000	.000	.000
24	.000	.000	.000	.000	64	1.628	1377.196	.000	.000
25	.000	.000	.000	.000	65	1.443	1377.196	.000	.000
26	575.000	55.000	3.984	-45.499	66	.754	1210.515	.000	.000
27	574.989	55.000	3.984	-45.500	67	.338	.000	.000	.000
28	574.975	139.637	.807	311.603	68	.000	.000	.000	.000
29	574.972	139.637	.807	311.603	69	.000	.000	.000	.000
30	574.972	139.637	.807	311.603	70	.000	550.000	.000	.000
31	574.968	139.637	.807	311.603	71	.000	690.720	.000	.000
32	574.883	397.249	.264	1290.573	72	.000	691.784	.000	.000
33	574.873	397.249	.264	1290.572	73	.000	.000	.000	.000
34	574.873	397.249	.264	1290.572	74	.000	.000	.000	.000
35	574.862	397.249	.264	1290.572	75	.000	.000	.000	.000
36	574.724	715.427	.153	2430.102	76	.000	.000	.000	.000
37	574.706	715.426	.153	2430.098	77	.000	.000	.000	.000
38	574.706	715.426	.153	2430.098	78	.000	.000	.000	.000
39	574.688	715.426	.153	2430.098	79	.000	.000	.000	.000
40	574.405	422.129	.249	1384.855	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:44:05

HYDRAULIC POWER	5.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	30.83	SPC	3.451	AMW	3.15
HYDRAULIC PUMP	30.29	LUBE PUMP	4.00	SECOND STAGE	32.46	O/F	.561		
TOTAL GEAR BOX	35.29			TOTAL TURBINE	63.29	PT OUT	.305		

TURBINE INFORMATION

FLOW	2.030	PRESSURE	57.65	1.60	EFFICIENCY 1ST	.425	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.361	TEMPERATURE	1935.9	1379.8	EFFICIENCY 2ND	.386	A2	.2335	A4	.6096
PRESSURE RATIO	35.98	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.468	HP	63.29	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1228.02	704.88	934.39	934.39	934.39
PRESSURE IN	573.52	573.98	897.18	400.56	573.18
PRESSURE OUT	573.51	573.98	400.57	62.76	62.57
EFFECTIVE AREA	.90909	.00000	.00074	.00166	.00830
FLOW	.980	.000	.729	.729	1.300

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.300	574.99	574.95	55.00	274.67	-45.5	806.3	.187	1.000	1.000	1107.53 BTU/MIN
	HOT SIDE	.321	573.48	573.48	1228.02	148.73	4215.9	341.6	.920	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.300	574.93	574.79	274.67	436.43	806.3	1438.4	.465	1.000	1.000	821.94 BTU/MIN
	HOT SIDE	1.300	574.56	574.22	622.71	447.53	2105.2	1479.6	.503	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.300	574.77	574.60	436.43	622.74	1438.4	2105.3	.913	1.000	1.000	867.10 BTU/MIN
	HOT SIDE	57.000	200.00	199.90	640.42	611.76	.0	.0	.140	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.300	574.21	574.02	447.53	704.88	1479.6	2393.1	.868	1.000	1.000	1187.76 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	744.01	660.00	.0	.0	.283	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.300	573.65	573.58	704.88	1228.03	2393.1	4215.9	.775	1.000	1.000	2370.14 BTU/MIN
	HOT SIDE	2.030	1.38	.68	1379.75	823.27	.0	.0	.825	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.300	573.45	573.21	961.81	934.39	3289.0	3193.7	.041	1.000	1.000	-123.94 BTU/MIN
	HOT SIDE	.729	900.00	899.97	300.00	934.39	35.4	205.2	.959	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.206	447.531	.235	1479.647
2	.000	.000	.000	.000	42	574.019	704.879	.155	2393.121
3	.000	.000	.000	.000	43	573.997	704.879	.155	2393.121
4	.000	.000	.000	.000	44	573.997	704.879	.155	2393.121
5	900.000	300.000	16.648	35.434	45	573.975	704.879	.155	2393.120
6	899.968	934.392	2.950	205.209	46	573.647	704.879	.155	2393.114
7	897.185	934.392	2.941	205.215	47	573.582	1228.026	.087	4215.929
8	897.179	934.392	2.941	205.215	48	573.975	704.879	.155	2393.120
9	400.573	934.392	1.322	206.187	49	573.975	704.879	.000	.000
10	400.560	934.392	1.322	206.187	50	573.582	1228.025	.087	4215.925
11	62.757	934.392	.208	206.876	51	573.543	1228.025	.087	4215.925
12	200.000	744.010	.000	.000	52	573.521	1228.025	.087	4215.924
13	199.994	660.002	.000	.000	53	573.513	.000	.000	.000
14	199.994	660.002	.000	.000	54	573.479	961.807	.115	3289.021
15	199.994	660.002	.000	.000	55	573.484	1228.025	.087	4215.923
16	200.000	640.417	.000	.000	56	573.479	148.728	.745	341.604
17	200.000	640.417	.000	.000	57	573.449	961.807	.115	3289.021
18	200.000	640.417	.000	.000	58	573.213	934.392	.118	3193.699
19	199.901	611.761	.000	.000	59	573.184	934.392	.118	3193.698
20	.000	.000	.000	.000	60	62.566	934.392	.013	3181.967
21	.000	.000	.000	.000	61	57.667	1935.943	.006	6718.065
22	.000	.000	.000	.000	62	57.652	1935.943	.000	.000
23	.000	.000	.000	.000	63	12.818	1664.999	.000	.000
24	.000	.000	.000	.000	64	1.603	1379.751	.000	.000
25	.000	.000	.000	.000	65	1.384	1379.751	.000	.000
26	575.000	55.000	3.984	-45.499	66	.681	823.271	.000	.000
27	574.986	55.000	3.984	-45.500	67	.305	.000	.000	.000
28	574.950	274.673	.382	806.277	68	.000	.000	.000	.000
29	574.942	274.673	.382	806.277	69	.000	.000	.000	.000
30	574.942	274.673	.382	806.277	70	.000	550.000	.000	.000
31	574.933	274.673	.382	806.277	71	.000	596.321	.000	.000
32	574.794	436.432	.241	1438.413	72	.000	597.482	.000	.000
33	574.780	436.432	.241	1438.413	73	.000	.000	.000	.000
34	574.780	436.432	.241	1438.413	74	.000	.000	.000	.000
35	574.766	436.432	.241	1438.413	75	.000	.000	.000	.000
36	574.602	622.739	.175	2105.281	76	.000	.000	.000	.000
37	574.582	622.710	.175	2105.177	77	.000	.000	.000	.000
38	574.582	622.710	.175	2105.177	78	.000	.000	.000	.000
39	574.563	622.710	.175	2105.176	79	.000	.000	.000	.000
40	574.220	447.531	.235	1479.647	80	.000	.000	.000	1.000

Computer Case 2B

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:44:13

HYDRAULIC POWER	5.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	30.90	SPC	3.604	AMW	3.37
HYDRAULIC PUMP	30.29	LUBE PUMP	4.00	SECOND STAGE	32.38	O/F	.671		
TOTAL GEAR BOX	35.29			TOTAL TURBINE	63.29	PT OUT	.343		

TURBINE INFORMATION

FLOW	2.119	PRESSURE	58.32	1.70	EFFICIENCY 1ST	.436	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1941.5	1375.2	EFFICIENCY 2ND	.401	A2	.2335	A4	.6096
PRESSURE RATIO	34.27	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.481	HP	63.29	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1025.64	705.50	750.00	750.00	750.00
PRESSURE IN	573.90	574.03	896.92	479.27	573.61
PRESSURE OUT	573.62	574.03	479.28	63.87	63.65
EFFECTIVE AREA	.13216	.13949	.00077	.00145	.00725
FLOW	.898	.650	.851	.851	1.268

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.268	574.99	574.95	55.00	264.25	-45.5	764.5	.216	1.000	1.000	1027.49 BTU/MIN
	HOT SIDE	.371	573.85	573.84	1025.64	165.58	3511.0	397.8	.886	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.268	574.94	574.81	264.25	430.32	764.5	1415.6	.464	1.000	1.000	825.82 BTU/MIN
	HOT SIDE	1.268	574.59	574.27	622.33	441.91	2103.8	1458.8	.504	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.268	574.78	574.63	430.32	622.33	1415.6	2103.8	.916	1.000	1.000	873.06 BTU/MIN
	HOT SIDE	57.000	200.00	199.90	639.94	611.09	.0	.0	.138	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.268	574.25	574.08	441.91	705.50	1458.8	2395.3	.873	1.000	1.000	1187.94 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	743.98	660.00	.0	.0	.278	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.618	573.96	573.94	705.50	1362.26	2395.3	4689.0	.981	1.000	1.000	1418.26 BTU/MIN
	HOT SIDE	2.119	1.49	.77	1375.24	1057.32	.0	.0	.475	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.268	573.82	573.63	774.16	750.00	2635.9	2551.2	.051	1.000	1.000	-107.43 BTU/MIN
	HOT SIDE	.851	900.00	899.96	300.00	750.00	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

Computer Case 2B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.253	441.912	.238	1458.769
2	.000	.000	.000	.000	42	574.076	705.497	.155	2395.288
3	.000	.000	.000	.000	43	574.055	705.497	.155	2395.288
4	.000	.000	.000	.000	44	574.055	705.497	.155	2395.288
5	900.000	300.000	16.648	35.434	45	574.035	705.497	.155	2395.288
6	899.965	749.995	3.673	160.870	46	573.960	705.497	.155	2395.286
7	896.926	749.995	3.661	160.881	47	573.941	1362.259	.081	4688.986
8	896.920	749.995	3.661	160.881	48	574.029	705.497	.155	2395.287
9	479.285	749.995	1.955	162.401	49	573.941	705.497	.000	.000
10	479.273	749.995	1.955	162.401	50	573.941	1025.644	.108	3510.976
11	63.868	749.995	.260	163.955	51	573.911	1025.644	.108	3510.975
12	200.000	743.982	.000	.000	52	573.896	1025.644	.108	3510.975
13	199.994	660.001	.000	.000	53	573.623	.000	.000	.000
14	199.994	660.001	.000	.000	54	573.841	774.161	.139	2635.912
15	199.994	660.001	.000	.000	55	573.847	1025.644	.108	3510.974
16	200.000	639.937	.000	.000	56	573.841	165.582	.657	397.756
17	200.000	639.937	.000	.000	57	573.818	774.161	.139	2635.912
18	200.000	639.937	.000	.000	58	573.631	749.996	.144	2551.223
19	199.899	611.086	.000	.000	59	573.609	749.996	.144	2551.222
20	.000	.000	.000	.000	60	63.646	749.996	.016	2540.381
21	.000	.000	.000	.000	61	58.334	1941.545	.006	6738.894
22	.000	.000	.000	.000	62	58.319	1941.545	.000	.000
23	.000	.000	.000	.000	63	13.010	1665.000	.000	.000
24	.000	.000	.000	.000	64	1.702	1375.243	.000	.000
25	.000	.000	.000	.000	65	1.493	1375.243	.000	.000
26	575.000	55.000	3.984	-45.499	66	.765	1057.315	.000	.000
27	574.987	55.000	3.984	-45.500	67	.343	.000	.000	.000
28	574.954	264.253	.398	764.528	68	.000	.000	.000	.000
29	574.946	264.253	.398	764.528	69	.000	.000	.000	.000
30	574.946	264.253	.398	764.528	70	.000	550.000	.000	.000
31	574.938	264.253	.398	764.528	71	.000	595.814	.000	.000
32	574.808	430.323	.244	1415.565	72	.000	596.975	.000	.000
33	574.795	430.323	.244	1415.565	73	.000	.000	.000	.000
34	574.795	430.323	.244	1415.565	74	.000	.000	.000	.000
35	574.782	430.323	.244	1415.565	75	.000	.000	.000	.000
36	574.627	622.330	.175	2103.848	76	.000	.000	.000	.000
37	574.608	622.327	.175	2103.838	77	.000	.000	.000	.000
38	574.608	622.327	.175	2103.838	78	.000	.000	.000	.000
39	574.590	622.327	.175	2103.837	79	.000	.000	.000	.000
40	574.267	441.912	.238	1458.769	80	.000	.000	.000	1.000

Computer Case 3

* CONDITION * NO BYP AMBIENT PRESSURE .00 PSIA. 19 DEC 72 14:56:42

HYDRAULIC POWER	10.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	33.41	SPC	3.287	AMW	3.22
HYDRAULIC PUMP	30.57	LUBE PUMP	4.00	SECOND STAGE	35.16	O/F	.596		
TOTAL GEAR BOX	40.57			TOTAL TURBINE	68.57	PT OUT	.330		

TURBINE INFORMATION

FLOW	2.223	PRESSURE	62.49	1.73	EFFICIENCY 1ST	.430	A1	.1517	A3 .5538
SPECIFIC HEAT RATIO	1.360	TEMPERATURE	1938.6	1377.1	EFFICIENCY 2ND	.390	A2	.2335	A4 .6096
PRESSURE RATIO	36.15	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.472	HP	68.57	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1232.04	709.15	875.50	875.50	875.50
PRESSURE IN	573.27	573.78	896.58	483.60	572.85
PRESSURE OUT	573.16	573.78	483.62	68.26	68.04
EFFECTIVE AREA	.24247	.00000	.00082	.00152	.00861
FLOW	.946	.000	.830	.830	1.392

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.392	574.98	574.94	55.00	329.93	-45.5	1028.0	.234	1.000	1.000	1494.70 BTU/MIN
	HOT SIDE	.447	573.17	573.16	1232.04	203.88	4230.1	530.9	.874	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.392	574.91	574.74	329.93	459.96	1028.0	1525.5	.471	1.000	1.000	692.75 BTU/MIN
	HOT SIDE	1.392	574.47	574.07	606.17	467.95	2047.2	1554.9	.500	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.392	574.70	574.51	459.96	606.13	1525.5	2047.1	.896	1.000	1.000	726.18 BTU/MIN
	HOT SIDE	57.000	200.00	199.85	623.18	598.78	.0	.0	.149	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.392	574.05	573.84	467.95	709.15	1554.9	2408.1	.856	1.000	1.000	1187.98 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	749.89	666.05	.0	.0	.297	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.392	573.41	573.33	709.15	1232.03	2408.1	4230.0	.783	1.000	1.000	2536.85 BTU/MIN
	HOT SIDE	2.223	1.49	.74	1377.07	833.23	.0	.0	.814	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.392	573.13	572.88	902.16	875.50	3081.6	2988.9	.044	1.000	1.000	-129.09 BTU/MIN
	HOT SIDE	.830	900.00	899.96	900.00	875.50	35.4	191.0	.956	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.052	467.945	.224	1554.877
2	.000	.000	.000	.000	42	573.835	709.148	.154	2408.081
3	.000	.000	.000	.000	43	573.810	709.148	.154	2408.080
4	.000	.000	.000	.000	44	573.810	709.148	.154	2408.080
5	900.000	300.000	16.648	35.434	45	573.785	709.148	.154	2408.080
6	899.963	875.498	3.114	190.984	46	573.405	709.148	.154	2408.072
7	896.583	875.498	3.102	190.992	47	573.332	1232.029	.087	4230.030
8	896.576	875.498	3.102	190.992	48	573.785	709.148	.154	2408.080
9	483.618	875.498	1.682	191.956	49	573.785	709.148	.000	.000
10	483.605	875.498	1.682	191.956	50	573.331	1232.036	.087	4230.055
11	68.260	875.498	.239	192.954	51	573.287	1232.036	.087	4230.054
12	200.000	749.888	.000	.000	52	573.266	1232.036	.087	4230.054
13	199.994	666.047	.000	.000	53	573.158	.000	.000	.000
14	199.994	666.047	.000	.000	54	573.162	902.162	.121	3081.641
15	199.994	666.047	.000	.000	55	573.171	1232.036	.087	4230.051
16	200.000	623.181	.000	.000	56	573.162	203.876	.521	530.853
17	200.000	623.181	.000	.000	57	573.130	902.162	.121	3081.640
18	200.000	623.181	.000	.000	58	572.880	875.498	.124	2988.930
19	199.852	598.783	.000	.000	59	572.849	875.498	.124	2988.929
20	.000	.000	.000	.000	60	68.036	875.498	.015	2977.468
21	.000	.000	.000	.000	61	62.509	1938.586	.006	6728.114
22	.000	.000	.000	.000	62	62.493	1938.586	.000	.000
23	.000	.000	.000	.000	63	13.882	1665.000	.000	.000
24	.000	.000	.000	.000	64	1.729	1377.066	.000	.000
25	.000	.000	.000	.000	65	1.492	1377.066	.000	.000
26	575.000	55.000	3.984	-45.499	66	.737	833.226	.000	.000
27	574.984	55.000	3.984	-45.500	67	.330	.000	.000	.000
28	574.936	329.932	.318	1027.991	68	.000	.000	.000	.000
29	574.923	329.932	.318	1027.991	69	.000	.000	.000	.000
30	574.923	329.932	.318	1027.991	70	.000	550.000	.000	.000
31	574.911	329.932	.318	1027.991	71	.000	579.270	.000	.000
32	574.734	459.957	.229	1525.522	72	.000	580.106	.000	.000
33	574.718	459.957	.229	1525.522	73	.000	.000	.000	.000
34	574.718	459.957	.229	1525.522	74	.000	.000	.000	.000
35	574.701	459.957	.229	1525.522	75	.000	.000	.000	.000
36	574.513	606.128	.179	2047.064	76	.000	.000	.000	.000
37	574.492	606.174	.179	2047.227	77	.000	.000	.000	.000
38	574.492	606.174	.179	2047.227	78	.000	.000	.000	.000
39	574.470	606.174	.179	2047.226	79	.000	.000	.000	.000
40	574.069	467.945	.224	1554.877	80	.000	.000	.000	1.000

Computer Case 3B

* CONDITION * BYPASS AMBIENT PRESSURE .00 PSIA. 19 DEC 72 14:57:29

HYDRAULIC POWER	10.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	33.47	SPC	3.385	AMW	3.37
HYDRAULIC PUMP	30.57	LURE PUMP	4.00	SECOND STAGE	35.10	O/F	.671		
TOTAL GEAR BOX	40.57			TOTAL TURBINE	68.57	PT OUT	.359		

TURBINE INFORMATION

FLOW	2.289	PRESSURE	62.99	1.80	EFFICIENCY 1ST	.437	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1942.4	1374.1	EFFICIENCY 2ND	.400	A2	.2335	A4	.6096
PRESSURE RATIO	34.91	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.481	HP	68.57	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1084.40	703.56	750.00	750.00	750.00
PRESSURE IN	573.63	573.84	896.41	479.33	573.26
PRESSURE OUT	573.44	573.68	479.35	68.98	68.74
EFFECTIVE AREA	.16152	.06907	.00084	.00157	.00783
FLOW	.883	.553	.919	.919	1.369

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.369	574.98	574.94	55.00	314.04	-45.5	964.5	.252	1.000	1.000	1383.21 BTU/MIN
	HOT SIDE	.487	573.53	573.52	1084.40	211.82	3715.2	560.2	.848	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.369	574.92	574.75	314.04	450.05	964.5	1489.0	.469	1.000	1.000	718.28 BTU/MIN
	HOT SIDE	1.369	574.50	574.12	603.99	458.74	2039.6	1521.0	.501	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.369	574.72	574.54	450.05	603.99	1489.0	2039.6	.896	1.000	1.000	753.98 BTU/MIN
	HOT SIDE	57.000	200.00	199.85	621.89	596.54	.0	.0	.148	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.369	574.10	573.89	458.74	703.56	1521.0	2388.5	.858	1.000	1.000	1187.95 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	744.10	660.00	.0	.0	.295	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.816	573.71	573.68	703.56	1342.44	2388.5	4619.1	.953	1.000	1.000	1820.99 BTU/MIN
	HOT SIDE	2.289	1.57	.80	1374.08	995.95	.0	.0	.564	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.369	573.49	573.28	774.19	750.00	2636.0	2551.2	.051	1.000	1.000	-116.07 BTU/MIN
	HOT SIDE	.919	900.00	899.96	300.00	750.00	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

Computer Case 3B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.100	458.745	.229	1521.047
2	.000	.000	.000	.000	42	573.892	703.559	.156	2388.494
3	.000	.000	.000	.000	43	573.868	703.559	.156	2388.494
4	.000	.000	.000	.000	44	573.868	703.559	.156	2388.494
5	900.000	300.000	16.648	35.434	45	573.844	703.559	.156	2388.493
6	899.960	750.002	3.673	160.872	46	573.714	703.559	.156	2388.491
7	896.413	750.002	3.659	160.885	47	573.684	1342.440	.082	4619.134
8	896.405	750.002	3.658	160.885	48	573.840	703.559	.156	2388.493
9	479.346	750.002	1.955	162.402	49	573.683	703.559	.000	.000
10	479.332	750.002	1.955	162.402	50	573.684	1084.396	.101	3715.239
11	68.984	750.002	.281	163.932	51	573.647	1084.396	.101	3715.238
12	200.000	744.099	.000	.000	52	573.631	1084.396	.101	3715.238
13	199.994	660.000	.000	.000	53	573.445	.000	.000	.000
14	199.994	660.000	.000	.000	54	573.519	774.186	.139	2635.992
15	199.994	660.000	.000	.000	55	573.529	1084.396	.101	3715.235
16	200.000	621.889	.000	.000	56	573.519	211.821	.500	560.204
17	200.000	621.889	.000	.000	57	573.492	774.186	.139	2635.991
18	200.000	621.889	.000	.000	58	573.281	750.002	.144	2551.238
19	199.845	596.536	.000	.000	59	573.255	750.002	.144	2551.238
20	.000	.000	.000	.000	60	68.744	750.002	.018	2540.513
21	.000	.000	.000	.000	61	63.003	1942.364	.006	6742.037
22	.000	.000	.000	.000	62	62.987	1942.364	.000	.000
23	.000	.000	.000	.000	63	14.024	1665.000	.000	.000
24	.000	.000	.000	.000	64	1.804	1374.081	.000	.000
25	.000	.000	.000	.000	65	1.575	1374.081	.000	.000
26	575.000	55.000	3.984	-45.499	66	.802	995.950	.000	.000
27	574.985	55.000	3.984	-45.500	67	.359	.000	.000	.000
28	574.940	314.043	.334	964.525	68	.000	.000	.000	.000
29	574.929	314.043	.334	964.525	69	.000	.000	.000	.000
30	574.929	314.043	.334	964.525	70	.000	550.000	.000	.000
31	574.917	314.043	.334	964.525	71	.000	577.922	.000	.000
32	574.753	450.050	.233	1489.012	72	.000	578.759	.000	.000
33	574.736	450.050	.233	1489.011	73	.000	.000	.000	.000
34	574.736	450.050	.233	1489.011	74	.000	.000	.000	.000
35	574.720	450.050	.233	1489.011	75	.000	.000	.000	.000
36	574.540	603.988	.180	2039.568	76	.000	.000	.000	.000
37	574.519	603.989	.180	2039.569	77	.000	.000	.000	.000
38	574.519	603.989	.180	2039.569	78	.000	.000	.000	.000
39	574.498	603.989	.180	2039.569	79	.000	.000	.000	.000
40	574.116	458.745	.229	1521.047	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:44:59

HYDRAULIC POWER	90.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	74.80	SPC	2.373 AMW 3.35
HYDRAULIC PUMP	35.14	LUBE PUMP	4.00	SECOND STAGE	78.35	O/F	.661
TOTAL GEAR BOX	125.14			TOTAL TURBINE	153.14	PT OUT	.681

TURBINE INFORMATION

FLOW	4.950	PRESSURE	136.91	3.55	EFFICIENCY 1ST	.442	A1	.1517	A3 .5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1949.8	1366.6	EFFICIENCY 2ND	.397	A2	.2335	A4 .6096
PRESSURE RATIO	38.57	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.484	HP	153.14	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1187.87	581.47	775.48	775.48	775.51
PRESSURE IN	567.86	569.87	882.97	465.63	565.56
PRESSURE OUT	566.43	569.87	465.70	150.14	149.60
EFFECTIVE AREA	.10715	.00000	.00185	.00351	.01756
FLOW	1.542	.000	1.970	1.970	2.980

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	2.980	574.93	574.69	55.00	381.14	-45.5	1228.7	.288	1.000	1.000	3797.50 BTU/MIN
	HOT SIDE	1.438	566.75	566.60	1187.87	385.08	4074.8	1243.9	.709	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	2.980	574.56	573.76	381.14	459.99	1228.7	1525.6	.461	1.000	1.000	884.79 BTU/MIN
	HOT SIDE	2.980	572.65	571.01	552.03	469.90	1857.5	1562.0	.481	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	2.980	573.60	572.83	459.99	552.02	1525.6	1857.4	.667	1.000	1.000	988.87 BTU/MIN
	HOT SIDE	57.000	200.00	199.65	598.05	563.94	.0	.0	.247	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	2.980	570.93	570.07	469.90	581.47	1562.0	1960.6	.609	1.000	1.000	1187.92 BTU/MIN
	HOT SIDE	28.500	200.00	199.93	653.03	562.65	.0	.0	.494	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	2.980	568.41	568.12	581.47	1187.87	1960.6	4074.8	.772	1.000	1.000	6301.04 BTU/MIN
	HOT SIDE	4.950	3.00	1.52	1366.64	759.86	.0	.0	.773	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	2.980	566.46	565.69	800.48	775.51	2728.0	2640.5	.050	1.000	1.000	-260.77 BTU/MIN
	HOT SIDE	1.970	900.00	899.85	300.00	775.48	35.4	166.9	.950	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	570.930	469.898	.222	1561.982
2	.000	.000	.000	.000	42	570.065	581.473	.184	1960.584
3	.000	.000	.000	.000	43	569.968	581.473	.184	1960.582
4	.000	.000	.000	.000	44	569.968	581.473	.184	1960.582
5	900.000	300.000	16.648	55.434	45	569.871	581.473	.184	1960.581
6	899.852	775.483	3.495	166.925	46	568.410	581.473	.183	1960.555
7	883.009	775.483	3.430	166.980	47	568.119	1187.867	.089	4074.848
8	882.972	775.483	3.429	166.980	48	569.871	581.473	.184	1960.581
9	465.696	775.483	1.812	168.322	49	569.871	581.473	.000	.000
10	465.627	775.483	1.812	168.322	50	568.119	1187.875	.089	4074.875
11	150.139	775.483	.585	169.374	51	567.919	1187.875	.089	4074.870
12	200.000	653.035	.000	.000	52	567.865	1187.875	.089	4074.868
13	199.934	562.649	.000	.000	53	566.433	.000	.000	.000
14	199.934	562.649	.000	.000	54	566.595	800.477	.131	2727.959
15	199.934	562.649	.000	.000	55	566.751	1187.875	.089	4074.842
16	200.000	598.049	.000	.000	56	566.595	385.082	.269	1243.884
17	200.000	598.049	.000	.000	57	566.459	800.477	.131	2727.956
18	200.000	598.049	.000	.000	58	565.687	775.508	.136	2640.455
19	199.652	563.941	.000	.000	59	565.555	775.508	.136	2640.452
20	.000	.000	.000	.000	60	149.605	775.508	.037	2631.387
21	.000	.000	.000	.000	61	136.945	1949.845	.013	6771.330
22	.000	.000	.000	.000	62	136.910	1949.845	.000	.000
23	.000	.000	.000	.000	63	29.843	1665.000	.000	.000
24	.000	.000	.000	.000	64	3.550	1366.644	.000	.000
25	.000	.000	.000	.000	65	3.004	1366.644	.000	.000
26	575.000	55.000	3.984	-45.499	66	1.522	759.858	.000	.000
27	574.928	55.000	3.984	-45.500	67	.681	.000	.000	.000
28	574.691	381.139	.275	1228.737	68	.000	.000	.000	.000
29	574.626	381.139	.275	1228.737	69	.000	.000	.000	.000
30	574.626	381.139	.275	1228.737	70	.000	550.000	.000	.000
31	574.561	381.139	.275	1228.736	71	.000	551.992	.000	.000
32	573.760	459.988	.228	1525.623	72	.000	553.204	.000	.000
33	573.681	459.988	.228	1525.622	73	.000	.000	.000	.000
34	573.681	459.988	.228	1525.622	74	.000	.000	.000	.000
35	573.603	459.988	.228	1525.621	75	.000	.000	.000	.000
36	572.832	552.024	.192	1857.434	76	.000	.000	.000	.000
37	572.738	552.031	.192	1857.456	77	.000	.000	.000	.000
38	572.738	552.031	.192	1857.456	78	.000	.000	.000	.000
39	572.645	552.031	.192	1857.454	79	.000	.000	.000	.000
40	571.011	469.898	.222	1561.983	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:45:19

HYDRAULIC POWER	90.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	74.82	SPC	2.387 AMW 3.38
HYDRAULIC PUMP	35.14	LUBE PUMP	4.00	SECOND STAGE	78.33	O/F	.676
TOTAL GEAR BOX	125.14			TOTAL TURBINE	153.14	PT OUT	.695

TURBINE INFORMATION

FLOW	4.979	PRESSURE	137.12	3.58	EFFICIENCY 1ST	.443	A1	.1517	A3 .5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1950.6	1366.0	EFFICIENCY 2ND	.399	A2	.2335	A4 .6096
PRESSURE RATIO	38.28	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.486	HP	153.14	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1161.59	581.87	749.96	749.96	749.99
PRESSURE IN	568.23	569.90	882.88	476.71	565.91
PRESSURE OUT	566.89	569.90	476.77	150.26	149.73
EFFECTIVE AREA	.10533	.01337	.00186	.00344	.01720
FLOW	1.479	.276	2.009	2.009	2.970

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	2.970	574.93	574.69	55.00	381.03	-45.5	1228.3	.295	1.000	1.000	3783.38 BTU/MIN
	HOT SIDE	1.491	567.06	566.89	1161.59	390.33	3983.5	1264.1	.697	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	2.970	574.56	573.77	381.03	460.01	1228.3	1525.7	.461	1.000	1.000	883.36 BTU/MIN
	HOT SIDE	2.970	572.66	571.04	552.19	469.91	1858.0	1562.0	.481	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	2.970	573.61	572.85	460.01	552.20	1525.7	1858.0	.668	1.000	1.000	987.08 BTU/MIN
	HOT SIDE	57.000	200.00	199.65	598.06	564.01	.0	.0	.247	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	2.970	570.96	570.10	469.91	581.87	1562.0	1962.0	.610	1.000	1.000	1187.89 BTU/MIN
	HOT SIDE	28.500	200.00	199.93	653.31	562.94	.0	.0	.493	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	2.694	568.71	568.47	581.87	1220.87	1961.9	4190.6	.815	1.000	1.000	6004.90 BTU/MIN
	HOT SIDE	4.979	3.04	1.55	1365.99	791.34	.0	.0	.733	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	2.970	566.76	566.03	774.35	749.99	2636.4	2551.0	.051	1.000	1.000	-253.61 BTU/MIN
	HOT SIDE	2.009	900.00	899.85	300.00	749.96	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

Computer Case 4B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	570.957	469.910	.222	1562.027
2	.000	.000	.000	.000	42	570.097	581.868	.184	1961.970
3	.000	.000	.000	.000	43	570.001	581.868	.184	1961.968
4	.000	.000	.000	.000	44	570.001	581.868	.184	1961.968
5	900.000	300.000	16.648	35.434	45	569.904	581.868	.184	1961.967
6	899.851	749.962	3.673	160.863	46	568.709	581.868	.183	1961.946
7	882.913	749.962	3.604	160.925	47	568.467	1220.869	.087	4190.585
8	882.877	749.962	3.603	160.925	48	569.903	581.868	.184	1961.967
9	476.775	749.962	1.945	162.402	49	568.467	581.868	.000	.000
10	476.708	749.962	1.945	162.402	50	568.467	1161.591	.092	3983.502
11	150.257	749.962	.612	163.625	51	568.275	1161.591	.092	3983.497
12	200.000	653.310	.000	.000	52	568.227	1161.591	.092	3983.496
13	199.934	562.941	.000	.000	53	566.895	.000	.000	.000
14	199.934	562.941	.000	.000	54	566.895	774.353	.137	2636.434
15	199.934	562.941	.000	.000	55	567.059	1161.591	.092	3983.468
16	200.000	598.058	.000	.000	56	566.895	390.333	.265	1264.112
17	200.000	598.058	.000	.000	57	566.765	774.353	.137	2636.431
18	200.000	598.058	.000	.000	58	566.031	749.991	.143	2551.045
19	199.653	564.013	.000	.000	59	565.906	749.991	.143	2551.043
20	.000	.000	.000	.000	60	149.730	749.991	.038	2542.205
21	.000	.000	.000	.000	61	137.154	1950.616	.013	6774.075
22	.000	.000	.000	.000	62	137.118	1950.616	.000	.000
23	.000	.000	.000	.000	63	29.905	1665.000	.000	.000
24	.000	.000	.000	.000	64	3.582	1365.991	.000	.000
25	.000	.000	.000	.000	65	3.040	1365.991	.000	.000
26	575.000	55.000	3.984	-45.499	66	1.552	791.344	.000	.000
27	574.929	55.000	3.984	-45.500	67	.695	.000	.000	.000
28	574.693	381.026	.275	1228.303	68	.000	.000	.000	.000
29	574.628	381.026	.275	1228.303	69	.000	.000	.000	.000
30	574.628	381.026	.275	1228.303	70	.000	550.000	.000	.000
31	574.564	381.026	.275	1228.303	71	.000	552.002	.000	.000
32	573.768	460.013	.228	1525.716	72	.000	553.214	.000	.000
33	573.690	460.013	.228	1525.715	73	.000	.000	.000	.000
34	573.690	460.013	.228	1525.715	74	.000	.000	.000	.000
35	573.612	460.013	.228	1525.714	75	.000	.000	.000	.000
36	572.846	552.199	.192	1858.047	76	.000	.000	.000	.000
37	572.753	552.191	.192	1858.017	77	.000	.000	.000	.000
38	572.753	552.191	.192	1858.017	78	.000	.000	.000	.000
39	572.661	552.191	.192	1858.016	79	.000	.000	.000	.000
40	571.037	469.910	.222	1562.028	80	.000	.000	.000	1.000

Computer Case 5

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:45:31

HYDRAULIC POWER	180.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	121.55	SPC	2.177	AMW	3.41
HYDRAULIC PUMP	40.29	LUBE PUMP	4.00	SECOND STAGE	126.74	O/F	.693		
TOTAL GEAR BOX	220.29			TOTAL TURBINE	248.29	PT OUT	1.076		

TURBINE INFORMATION

FLOW	7.991	PRESSURE	219.38	5.52	EFFICIENCY 1ST	.448	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1956.5	1361.0	EFFICIENCY 2ND	.401	A2	.2335	A4	.6096
PRESSURE RATIO	39.72	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.491	HP	248.29	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1163.81	540.22	727.77	727.77	727.92
PRESSURE IN	557.28	562.08	853.40	474.00	549.43
PRESSURE OUT	551.81	562.08	474.17	240.53	239.49
EFFECTIVE AREA	.06114	.00000	.00309	.00555	.02775
FLOW	1.721	.000	3.270	3.270	4.721

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	4.721	574.82	574.22	55.00	403.42	-45.5	1314.1	.314	1.000	1.000	6418.60 BTU/MIN
	HOT SIDE	2.999	552.32	551.58	1163.81	515.35	3990.8	1726.6	.585	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	4.721	573.87	571.90	403.42	460.09	1314.1	1526.0	.451	1.000	1.000	1000.08 BTU/MIN
	HOT SIDE	4.721	569.23	565.36	529.00	470.56	1775.9	1564.3	.465	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	4.721	571.51	569.68	460.09	529.05	1526.0	1776.1	.505	1.000	1.000	1180.77 BTU/MIN
	HOT SIDE	57.000	200.00	199.58	596.57	555.71	.0	.0	.299	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	4.721	565.16	562.55	470.56	540.22	1564.3	1815.9	.446	1.000	1.000	1187.77 BTU/MIN
	HOT SIDE	28.500	200.00	199.84	626.65	534.86	.0	.0	.588	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	4.721	558.55	557.84	540.22	1163.83	1815.8	3991.0	.760	1.000	1.000	10268.70 BTU/MIN
	HOT SIDE	7.991	4.63	2.41	1361.04	748.51	.0	.0	.746	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	4.721	551.26	549.74	751.80	727.92	2557.1	2473.4	.053	1.000	1.000	-395.23 BTU/MIN
	HOT SIDE	3.270	900.00	899.65	900.00	727.77	35.4	155.6	.947	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	565.158	470.555	.220	1564.310
2	.000	.000	.000	.000	42	562.549	540.224	.191	1815.910
3	.000	.000	.000	.000	43	562.314	540.224	.191	1815.906
4	.000	.000	.000	.000	44	562.314	540.224	.191	1815.906
5	900.000	300.000	16.648	35.434	45	562.079	540.224	.191	1815.902
6	899.651	727.765	3.827	155.591	46	558.553	540.224	.190	1815.843
7	853.499	727.765	3.630	155.773	47	557.841	1163.828	.090	3991.023
8	853.404	727.765	3.629	155.773	48	562.079	540.224	.191	1815.902
9	474.173	727.765	2.012	157.293	49	562.079	540.224	.000	.000
10	474.001	727.765	2.011	157.294	50	557.843	1163.807	.090	3990.951
11	240.332	727.765	1.018	158.246	51	557.345	1163.807	.090	3990.939
12	200.000	626.647	.000	.000	52	557.279	1163.807	.090	3990.937
13	199.838	534.865	.000	.000	53	551.807	.000	.000	.000
14	199.838	534.865	.000	.000	54	551.584	751.805	.139	2557.093
15	199.838	534.865	.000	.000	55	552.319	1163.807	.089	3990.818
16	200.000	596.566	.000	.000	56	551.584	515.346	.196	1726.593
17	200.000	596.566	.000	.000	57	551.260	751.805	.138	2557.086
18	200.000	596.566	.000	.000	58	549.744	727.920	.144	2473.365
19	199.582	555.707	.000	.000	59	549.431	727.920	.144	2473.359
20	.000	.000	.000	.000	60	239.493	727.920	.063	2466.936
21	.000	.000	.000	.000	61	219.437	1956.515	.021	6797.383
22	.000	.000	.000	.000	62	219.380	1956.515	.000	.000
23	.000	.000	.000	.000	63	47.209	1664.998	.000	.000
24	.000	.000	.000	.000	64	5.523	1361.043	.000	.000
25	.000	.000	.000	.000	65	4.630	1361.043	.000	.000
26	575.000	55.000	3.984	-45.499	66	2.405	748.510	.000	.000
27	574.820	55.000	3.984	-45.502	67	1.076	.000	.000	.000
28	574.216	403.420	.260	1314.127	68	.000	.000	.000	.000
29	574.044	403.420	.260	1314.125	69	.000	.000	.000	.000
30	574.044	403.420	.260	1314.125	70	.000	550.000	.000	.000
31	573.871	403.420	.260	1314.124	71	.000	550.439	.000	.000
32	571.904	460.087	.227	1525.967	72	.000	551.653	.000	.000
33	571.707	460.087	.227	1525.965	73	.000	.000	.000	.000
34	571.707	460.087	.227	1525.965	74	.000	.000	.000	.000
35	571.509	460.087	.227	1525.962	75	.000	.000	.000	.000
36	569.683	529.054	.197	1776.080	76	.000	.000	.000	.000
37	569.457	529.003	.197	1775.896	77	.000	.000	.000	.000
38	569.457	529.003	.197	1775.896	78	.000	.000	.000	.000
39	569.230	529.003	.197	1775.892	79	.000	.000	.000	.000
40	565.362	470.555	.220	1564.313	80	.000	.000	.000	1.000

Computer Case 6

* CONDITION * NO BYP AMBIENT PRESSURE .00 PSIA. 19 DEC 72 14:57:08

HYDRAULIC POWER	270.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	168.44	SPC	2.096	AMW	3.45
HYDRAULIC PUMP	45.43	LUBE PUMP	4.00	SECOND STAGE	174.99	O/F	.714		
TOTAL GEAR BOX	315.43			TOTAL TURBINE	343.43	PT OUT	1.474		

TURBINE INFORMATION

FLOW	11.020	PRESSURE	301.07	7.46	EFFICIENCY 1ST	.453	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.356	TEMPERATURE	1961.1	1357.4	EFFICIENCY 2ND	.405	A2	.2335	A4	.6096
PRESSURE RATIO	40.37	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.496	HP	343.43	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1146.74	521.17	696.67	696.67	697.07
PRESSURE IN	543.69	552.38	806.76	528.89	523.63
PRESSURE OUT	527.01	552.38	529.18	329.62	328.48
EFFECTIVE AREA	.02737	.00000	.00465	.00697	.03960
FLOW	1.339	.000	4.589	4.589	6.430

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	6.430	574.67	573.54	55.00	416.71	-45.5	1364.4	.331	1.000	1.000	9066.42 BTU/MIN
	HOT SIDE	5.092	529.18	527.00	1146.74	607.95	3930.9	2052.6	.494	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	6.430	572.88	569.28	416.71	460.01	1364.4	1525.7	.443	1.000	1.000	1036.75 BTU/MIN
	HOT SIDE	6.430	564.47	557.52	514.56	470.17	1724.0	1562.8	.454	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	6.430	568.55	565.29	460.01	514.57	1525.6	1724.0	.403	1.000	1.000	1275.69 BTU/MIN
	HOT SIDE	57.000	200.00	199.53	595.25	550.96	.0	.0	.327	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	6.430	557.14	553.24	470.17	521.17	1562.8	1747.6	.348	1.000	1.000	1187.99 BTU/MIN
	HOT SIDE	28.500	200.00	199.77	616.87	524.31	.0	.0	.631	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	6.430	545.96	544.66	521.17	1146.74	1747.4	3931.3	.748	1.000	1.000	14043.16 BTU/MIN
	HOT SIDE	11.020	6.22	3.29	1357.38	750.30	.0	.0	.726	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	6.430	526.40	524.21	720.13	697.07	2445.6	2364.8	.055	1.000	1.000	-519.79 BTU/MIN
	HOT SIDE	4.589	900.00	899.36	300.00	696.67	35.4	148.2	.944	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	557.137	470.173	.217	1562.805
2	.000	.000	.000	.000	42	553.236	521.171	.195	1747.551
3	.000	.000	.000	.000	43	552.809	521.171	.195	1747.545
4	.000	.000	.000	.000	44	552.809	521.171	.195	1747.545
5	900.000	300.000	16.648	35.434	45	552.381	521.171	.194	1747.538
6	899.357	696.673	4.042	148.207	46	545.957	521.171	.192	1747.435
7	806.944	696.673	3.624	148.617	47	544.659	1146.745	.090	3931.317
8	806.757	696.673	3.623	148.618	48	552.381	521.171	.194	1747.538
9	529.180	696.673	2.368	149.878	49	552.381	521.171	.000	.000
10	528.893	696.673	2.367	149.879	50	544.659	1146.742	.090	3931.305
11	329.618	696.673	1.471	150.805	51	543.733	1146.742	.090	3931.283
12	200.000	616.875	.000	.000	52	543.692	1146.742	.090	3931.282
13	199.773	524.310	.000	.000	53	527.012	.000	.000	.000
14	199.773	524.310	.000	.000	54	526.997	720.131	.139	2445.602
15	199.773	524.310	.000	.000	55	529.184	1146.742	.087	3930.935
16	200.000	595.246	.000	.000	56	526.997	607.949	.164	2052.582
17	200.000	595.246	.000	.000	57	526.400	720.131	.139	2445.589
18	200.000	595.246	.000	.000	58	524.214	697.070	.144	2364.755
19	199.527	550.962	.000	.000	59	523.635	697.070	.144	2364.744
20	.000	.000	.000	.000	60	328.483	697.070	.091	2360.843
21	.000	.000	.000	.000	61	301.150	1961.111	.029	6816.538
22	.000	.000	.000	.000	62	301.073	1961.111	.000	.000
23	.000	.000	.000	.000	63	64.196	1665.000	.000	.000
24	.000	.000	.000	.000	64	7.457	1357.381	.000	.000
25	.000	.000	.000	.000	65	6.218	1357.381	.000	.000
26	575.000	55.000	3.984	-45.499	66	3.294	750.296	.000	.000
27	574.666	55.000	3.984	-45.504	67	1.474	.000	.000	.000
28	573.543	416.711	.251	1364.434	68	.000	.000	.000	.000
29	573.212	416.711	.251	1364.430	69	.000	.000	.000	.000
30	573.212	416.711	.251	1364.430	70	.000	550.000	.000	.000
31	572.880	416.711	.251	1364.427	71	.000	550.051	.000	.000
32	569.282	460.012	.226	1525.655	72	.000	573.294	.000	.000
33	568.914	460.012	.226	1525.650	73	.000	.000	.000	.000
34	568.914	460.012	.226	1525.650	74	.000	.000	.000	.000
35	568.546	460.012	.226	1525.645	75	.000	.000	.000	.000
36	565.295	514.573	.201	1724.031	76	.000	.000	.000	.000
37	564.881	514.559	.201	1723.972	77	.000	.000	.000	.000
38	564.881	514.559	.201	1723.972	78	.000	.000	.000	.000
39	564.468	514.559	.201	1723.965	79	.000	.000	.000	.000
40	557.521	470.173	.217	1562.810	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:46:17

HYDRAULIC POWER	350.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	210.20	SPC	2.055	AMW	3.48
HYDRAULIC PUMP	50.00	LUBE PUMP	4.00	SECOND STAGE	217.80	O/F	.727		
TOTAL GEAR BOX	400.00			TOTAL TURBINE	428.00	PT OUT	1.828		

TURBINE INFORMATION

FLOW	13.700	PRESSURE	373.20	9.15	EFFICIENCY 1ST	.456	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.355	TEMPERATURE	1964.3	1354.9	EFFICIENCY 2ND	.407	A2	.2335	A4	.6096
PRESSURE RATIO	40.78	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.499	HP	428.00	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1134.78	511.07	676.76	676.76	677.45
PRESSURE IN	528.22	541.41	743.92	474.68	487.49
PRESSURE OUT	491.84	541.41	475.17	408.40	407.01
EFFECTIVE AREA	.00755	.00000	.00618	.01324	.06622
FLOW	.540	.000	5.768	5.768	7.932

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	7.932	574.49	572.78	55.00	424.22	-45.5	1392.7	.342	1.000	1.000	11407.85 BTU/MIN
	HOT SIDE	7.392	497.10	492.25	1134.78	668.13	3888.6	2262.8	.432	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	7.932	571.76	566.34	424.22	460.00	1392.6	1525.6	.436	1.000	1.000	1054.36 BTU/MIN
	HOT SIDE	7.932	559.13	548.76	506.35	469.80	1694.3	1561.3	.445	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	7.932	565.21	560.38	460.00	506.35	1525.6	1694.3	.341	1.000	1.000	1338.65 BTU/MIN
	HOT SIDE	57.000	200.00	199.52	596.13	549.64	.0	.0	.342	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	7.932	548.17	542.71	469.80	511.07	1561.3	1711.1	.290	1.000	1.000	1187.94 BTU/MIN
	HOT SIDE	28.500	200.00	199.73	612.09	519.15	.0	.0	.653	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	7.932	531.63	529.65	511.07	1134.78	1710.9	3889.4	.739	1.000	1.000	17279.94 BTU/MIN
	HOT SIDE	13.700	7.61	4.08	1354.94	754.32	.0	.0	.712	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	7.932	491.31	486.41	699.93	677.45	2374.1	2295.3	.056	1.000	1.000	-625.12 BTU/MIN
	HOT SIDE	5.768	900.00	899.02	300.00	676.76	35.4	143.5	.942	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	548.165	469.804	.214	1561.335
2	.000	.000	.000	.000	42	542.707	511.072	.195	1711.097
3	.000	.000	.000	.000	43	542.056	511.072	.195	1711.087
4	.000	.000	.000	.000	44	542.056	511.072	.195	1711.087
5	900.000	300.000	16.648	35.434	45	541.405	511.072	.194	1711.076
6	899.022	676.755	4.180	143.477	46	531.625	511.072	.191	1710.925
7	744.231	676.755	3.453	144.224	47	529.654	1134.784	.089	3889.374
8	743.920	676.755	3.451	144.226	48	541.405	511.072	.194	1711.076
9	475.169	676.755	2.195	145.527	49	541.405	511.072	.000	.000
10	474.681	676.755	2.193	145.530	50	529.654	1134.784	.089	3889.375
11	408.404	676.755	1.885	145.855	51	528.224	1134.784	.088	3889.340
12	200.000	612.088	.000	.000	52	528.216	1134.784	.088	3889.340
13	199.732	519.149	.000	.000	53	491.837	.000	.000	.000
14	199.732	519.149	.000	.000	54	492.253	699.931	.135	2374.131
15	199.732	519.149	.000	.000	55	497.102	1134.784	.083	3888.598
16	200.000	596.135	.000	.000	56	492.253	668.134	.141	2262.757
17	200.000	596.135	.000	.000	57	491.312	699.931	.134	2374.112
18	200.000	596.135	.000	.000	58	488.407	677.448	.138	2295.305
19	199.522	549.635	.000	.000	59	487.490	677.448	.138	2295.287
20	.000	.000	.000	.000	60	407.009	677.448	.116	2293.730
21	.000	.000	.000	.000	61	373.291	1964.250	.036	6829.857
22	.000	.000	.000	.000	62	373.195	1964.250	.000	.000
23	.000	.000	.000	.000	63	79.053	1665.000	.000	.000
24	.000	.000	.000	.000	64	9.152	1354.942	.000	.000
25	.000	.000	.000	.000	65	7.606	1354.942	.000	.000
26	575.000	55.000	3.984	-45.499	66	4.085	754.316	.000	.000
27	574.491	55.000	3.984	-45.506	67	1.828	.000	.000	.000
28	572.785	424.216	.247	1392.660	68	.000	.000	.000	.000
29	572.271	424.216	.246	1392.655	69	.000	.000	.000	.000
30	572.271	424.216	.246	1392.655	70	.000	550.000	.000	.000
31	571.757	424.216	.246	1392.650	71	.000	549.985	.000	.000
32	566.340	459.999	.225	1525.571	72	.000	551.199	.000	.000
33	565.777	459.999	.225	1525.563	73	.000	.000	.000	.000
34	565.777	459.999	.225	1525.563	74	.000	.000	.000	.000
35	565.214	459.999	.225	1525.556	75	.000	.000	.000	.000
36	560.380	506.354	.203	1694.343	76	.000	.000	.000	.000
37	559.755	506.354	.203	1694.335	77	.000	.000	.000	.000
38	559.755	506.354	.203	1694.335	78	.000	.000	.000	.000
39	559.130	506.354	.202	1694.325	79	.000	.000	.000	.000
40	548.757	469.804	.214	1561.343	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:47:08

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	43.05	SPC	5.622	AMW	3.03
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	14.95	O/F	.501		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	14.700		

TURBINE INFORMATION

FLOW	2.811	PRESSURE	81.22	14.93	EFFICIENCY 1ST	.427	A1	.1517	A3 .5538
SPECIFIC HEAT RATIO	1.363	TEMPERATURE	1928.8	1573.4	EFFICIENCY 2ND	.573	A2	.2335	A4 .6096
PRESSURE RATIO	5.44	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.507	HP	58.00	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1345.02	654.67	1031.76	1031.76	1031.76
PRESSURE IN	571.96	572.86	894.85	356.71	571.27
PRESSURE OUT	571.86	572.86	356.73	87.86	87.63
EFFECTIVE AREA	.40279	.00000	.00100	.00252	.01260
FLOW	1.413	.000	.939	.939	1.872

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.872	574.97	574.90	55.00	290.37	-45.5	869.4	.182	1.000	1.000	1713.01 BTU/MIN
	HOT SIDE	.460	571.88	571.87	1345.02	182.96	4628.2	457.2	.901	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.872	574.86	574.56	290.37	459.97	869.4	1525.6	.460	1.000	1.000	1228.60 BTU/MIN
	HOT SIDE	1.872	574.07	573.35	659.02	475.55	2232.4	1582.7	.498	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.872	574.50	574.16	459.97	659.00	1525.6	2232.4	.873	1.000	1.000	1323.39 BTU/MIN
	HOT SIDE	57.000	200.00	199.96	687.88	645.77	.0	.0	.185	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.872	573.32	572.94	475.55	654.67	1582.7	2217.2	.772	1.000	1.000	1187.97 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	707.54	620.91	.0	.0	.373	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.872	572.22	572.09	654.67	1345.01	2217.1	4628.2	.751	1.000	1.000	4514.33 BTU/MIN
	HOT SIDE	2.811	14.88	14.74	1573.38	810.13	.0	.0	.831	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.872	571.80	571.33	1059.68	1031.76	3629.3	3532.2	.037	1.000	1.000	-181.75 BTU/MIN
	HOT SIDE	.939	900.00	899.95	300.00	1031.76	35.4	228.7	.963	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.317	475.547	.221	1582.685
2	.000	.000	.000	.000	42	572.943	654.672	.167	2217.156
3	.000	.000	.000	.000	43	572.901	654.672	.167	2217.155
4	.000	.000	.000	.000	44	572.901	654.672	.167	2217.155
5	900.000	300.000	16.648	35.434	45	572.859	654.672	.167	2217.154
6	899.949	1031.764	2.678	228.728	46	572.225	654.672	.167	2217.142
7	894.862	1031.764	2.663	228.735	47	572.095	1345.010	.081	4628.154
8	894.851	1031.764	2.663	228.735	48	572.859	654.672	.167	2217.154
9	356.733	1031.764	1.071	229.457	49	572.859	654.672	.000	.000
10	356.707	1031.764	1.070	229.457	50	572.095	1345.016	.081	4628.176
11	87.862	1031.764	.265	229.821	51	572.008	1345.016	.081	4628.174
12	200.000	707.544	.000	.000	52	571.959	1345.016	.081	4628.173
13	199.986	620.913	.000	.000	53	571.863	.000	.000	.000
14	199.986	620.913	.000	.000	54	571.867	1059.680	.104	3629.264
15	199.986	620.913	.000	.000	55	571.877	1345.016	.081	4628.171
16	200.000	687.881	.000	.000	56	571.867	182.957	.585	457.202
17	200.000	687.881	.000	.000	57	571.799	1059.680	.104	3629.262
18	200.000	687.881	.000	.000	58	571.331	1031.764	.107	3532.193
19	199.959	645.766	.000	.000	59	571.265	1031.764	.107	3532.192
20	.000	.000	.000	.000	60	87.630	1031.764	.017	3520.868
21	.000	.000	.000	.000	61	81.244	1928.769	.008	6692.639
22	.000	.000	.000	.000	62	81.223	1928.769	.000	.000
23	.000	.000	.000	.000	63	19.060	1665.000	.000	.000
24	.000	.000	.000	.000	64	14.929	1573.377	.000	.000
25	.000	.000	.000	.000	65	14.875	1573.377	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.742	810.129	.000	.000
27	574.972	55.000	3.984	-45.500	67	14.700	810.129	.000	.000
28	574.896	290.366	.361	869.385	68	.000	.000	.000	.000
29	574.876	290.366	.361	869.385	69	.000	.000	.000	.000
30	574.876	290.366	.361	869.385	70	.000	550.000	.000	.000
31	574.857	290.366	.361	869.385	71	.000	645.766	.000	.000
32	574.564	459.967	.229	1525.558	72	.000	646.874	.000	.000
33	574.533	459.967	.228	1525.558	73	.000	.000	.000	.000
34	574.533	459.967	.228	1525.558	74	.000	.000	.000	.000
35	574.502	459.967	.228	1525.558	75	.000	.000	.000	.000
36	574.157	659.002	.166	2232.354	76	.000	.000	.000	.000
37	574.115	659.021	.166	2232.418	77	.000	.000	.000	.000
38	574.115	659.021	.166	2232.418	78	.000	.000	.000	.000
39	574.073	659.021	.166	2232.417	79	.000	.000	.000	.000
40	573.349	475.547	.221	1582.685	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:47:16

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	43.24	SPC	6.006	AMW	3.36
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	14.76	O/F	.669		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	14.700		

TURBINE INFORMATION

FLOW	3.003	PRESSURE	82.61	14.97	EFFICIENCY 1ST	.443	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1937.8	1571.9	EFFICIENCY 2ND	.577	A2	.2335	A4	.6096
PRESSURE RATIO	5.52	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.521	HP	58.00	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1049.15	662.27	749.80	749.80	749.80
PRESSURE IN	572.78	573.00	893.85	476.50	572.20
PRESSURE OUT	572.62	573.00	476.52	90.44	90.13
EFFECTIVE AREA	.23575	.17627	.00110	.00206	.01031
FLOW	1.204	1.023	1.203	1.203	1.800

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.800	574.97	574.91	55.00	283.75	-45.5	842.8	.230	1.000	1.000	1598.60 BTU/MIN
	HOT SIDE	.596	572.63	572.62	1049.15	217.82	3592.7	582.9	.836	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.800	574.87	574.60	283.75	460.19	842.8	1526.4	.460	1.000	1.000	1230.29 BTU/MIN
	HOT SIDE	1.800	574.14	573.46	667.18	475.89	2261.0	1583.9	.499	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.800	574.54	574.22	460.19	667.23	1526.4	2261.2	.885	1.000	1.000	1322.41 BTU/MIN
	HOT SIDE	57.000	200.00	199.96	694.04	652.21	.0	.0	.179	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.800	573.43	573.09	475.89	662.27	1583.9	2243.8	.785	1.000	1.000	1187.54 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	713.34	627.15	.0	.0	.363	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.777	572.90	572.87	662.27	1558.23	2243.8	5379.6	.985	1.000	1.000	2437.04 BTU/MIN
	HOT SIDE	3.003	14.92	14.76	1571.86	1187.45	.0	.0	.423	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.800	572.57	572.25	773.88	749.80	2634.9	2550.5	.051	1.000	1.000	-151.86 BTU/MIN
	HOT SIDE	1.203	900.00	899.94	300.00	749.80	35.4	160.8	.949	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.435	475.888	.221	1583.936
2	.000	.000	.000	.000	42	573.087	662.274	.165	2243.797
3	.000	.000	.000	.000	43	573.047	662.274	.165	2243.796
4	.000	.000	.000	.000	44	573.047	662.274	.165	2243.796
5	900.000	300.000	16.648	35.434	45	573.008	662.274	.165	2243.796
6	899.939	749.798	3.674	160.823	46	572.897	662.274	.165	2243.793
7	893.863	749.798	3.650	160.846	47	572.867	1558.230	.071	5379.573
8	893.850	749.798	3.649	160.846	48	572.995	662.274	.165	2243.795
9	476.523	749.798	1.945	162.365	49	572.867	662.274	.000	.000
10	476.499	749.798	1.944	162.365	50	572.867	1049.148	.105	3592.669
11	90.437	749.798	.369	163.790	51	572.805	1049.148	.105	3592.667
12	200.000	713.343	.000	.000	52	572.777	1049.148	.105	3592.667
13	199.988	627.148	.000	.000	53	572.619	.000	.000	.000
14	199.988	627.148	.000	.000	54	572.621	773.878	.138	2634.892
15	199.988	627.148	.000	.000	55	572.635	1049.148	.105	3592.663
16	200.000	694.038	.000	.000	56	572.621	217.819	.485	582.936
17	200.000	694.038	.000	.000	57	572.573	773.878	.138	2634.891
18	200.000	694.038	.000	.000	58	572.247	749.801	.144	2550.512
19	199.965	652.205	.000	.000	59	572.202	749.801	.144	2550.511
20	.000	.000	.000	.000	60	90.126	749.801	.023	2540.268
21	.000	.000	.000	.000	61	82.627	1937.826	.008	6725.046
22	.000	.000	.000	.000	62	82.606	1937.826	.000	.000
23	.000	.000	.000	.000	63	19.391	1664.996	.000	.000
24	.000	.000	.000	.000	64	14.974	1571.855	.000	.000
25	.000	.000	.000	.000	65	14.919	1571.855	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.764	1187.453	.000	.000
27	574.974	55.000	3.984	-45.500	67	14.700	1187.453	.000	.000
28	574.905	283.749	.370	842.765	68	.000	.000	.000	.000
29	574.887	283.749	.370	842.766	69	.000	.000	.000	.000
30	574.887	283.749	.370	842.766	70	.000	550.000	.000	.000
31	574.870	283.749	.370	842.766	71	.000	652.205	.000	.000
32	574.600	460.189	.228	1526.378	72	.000	653.307	.000	.000
33	574.572	460.189	.228	1526.378	73	.000	.000	.000	.000
34	574.572	460.189	.228	1526.378	74	.000	.000	.000	.000
35	574.543	460.189	.228	1526.377	75	.000	.000	.000	.000
36	574.222	667.227	.164	2261.179	76	.000	.000	.000	.000
37	574.183	667.182	.164	2261.021	77	.000	.000	.000	.000
38	574.183	667.182	.164	2261.021	78	.000	.000	.000	.000
39	574.143	667.182	.164	2261.020	79	.000	.000	.000	.000
40	573.464	475.888	.221	1583.937	80	.000	.000	.000	1.000

Computer Case 9

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:47:30

HYDRAULIC POWER	5.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	46.05	SPC	5.125	AMW	3.10
HYDRAULIC PUMP	30.29	LUBE PUMP	4.00	SECOND STAGE	17.24	O/F	.537		
TOTAL GEAR BOX	35.29			TOTAL TURBINE	63.29	PT OUT	14.700		

TURBINE INFORMATION

FLOW	3.014	PRESSURE	86.22	14.95	EFFICIENCY 1ST	.429	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.362	TEMPERATURE	1933.7	1564.4	EFFICIENCY 2ND	.575	A2	.2335	A4	.6096
PRESSURE RATIO	5.77	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.513	HP	63.29	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1342.58	641.53	974.55	974.55	974.55
PRESSURE IN	571.72	572.69	893.88	381.71	570.91
PRESSURE OUT	571.39	572.69	381.74	93.62	93.35
EFFECTIVE AREA	.20852	.00000	.00110	.00257	.01284
FLOW	1.357	.000	1.053	1.053	1.961

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.961	574.97	574.87	55.00	338.47	-45.5	1061.8	.220	1.000	1.000	2171.84 BTU/MIN
	HOT SIDE	.604	571.54	571.52	1342.58	238.01	4619.6	660.6	.858	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.961	574.82	574.48	338.47	460.01	1061.8	1525.7	.465	1.000	1.000	909.82 BTU/MIN
	HOT SIDE	1.961	573.97	573.22	599.67	470.80	2024.4	1565.3	.493	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.961	574.41	574.05	460.01	599.58	1525.7	2024.1	.822	1.000	1.000	977.50 BTU/MIN
	HOT SIDE	57.000	200.00	199.86	629.90	597.13	.0	.0	.193	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.961	573.18	572.78	470.80	641.53	1565.3	2171.1	.755	1.000	1.000	1188.15 BTU/MIN
	HOT SIDE	28.500	200.00	199.98	696.91	609.51	.0	.0	.387	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.961	572.00	571.86	641.53	1342.60	2171.1	4619.6	.760	1.000	1.000	4802.39 BTU/MIN
	HOT SIDE	3.014	14.89	14.75	1564.41	807.12	.0	.0	.821	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.961	571.45	570.98	1002.28	974.55	3429.7	3333.3	.039	1.000	1.000	-189.07 BTU/MIN
	HOT SIDE	1.053	900.00	899.94	900.00	974.55	35.4	214.9	.961	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.183	470.796	.223	1565.298
2	.000	.000	.000	.000	42	572.778	641.528	.170	2171.091
3	.000	.000	.000	.000	43	572.732	641.528	.170	2171.090
4	.000	.000	.000	.000	44	572.732	641.528	.170	2171.090
5	900.000	300.000	16.648	35.434	45	572.687	641.528	.170	2171.089
6	899.942	974.553	2.838	214.909	46	572.004	641.528	.170	2171.076
7	893.896	974.553	2.819	214.920	47	571.863	1342.597	.082	4619.643
8	893.883	974.553	2.819	214.920	48	572.687	641.528	.170	2171.089
9	381.737	974.553	1.212	215.792	49	572.687	641.528	.000	.000
10	381.708	974.553	1.212	215.792	50	571.863	1342.577	.082	4619.573
11	93.623	974.553	.299	216.290	51	571.768	1342.577	.082	4619.571
12	200.000	696.910	.000	.000	52	571.723	1342.577	.082	4619.570
13	199.982	609.513	.000	.000	53	571.394	.000	.000	.000
14	199.982	609.513	.000	.000	54	571.524	1002.278	.110	3429.683
15	199.982	609.513	.000	.000	55	571.543	1342.577	.081	4619.566
16	200.000	629.902	.000	.000	56	571.524	238.010	.441	660.638
17	200.000	629.902	.000	.000	57	571.454	1002.278	.110	3429.681
18	200.000	629.902	.000	.000	58	570.979	974.554	.113	3333.279
19	199.862	597.131	.000	.000	59	570.910	974.554	.113	3333.278
20	.000	.000	.000	.000	60	93.352	974.554	.019	3322.222
21	.000	.000	.000	.000	61	86.239	1933.716	.009	6710.704
22	.000	.000	.000	.000	62	86.217	1933.716	.000	.000
23	.000	.000	.000	.000	63	19.792	1664.999	.000	.000
24	.000	.000	.000	.000	64	14.953	1564.409	.000	.000
25	.000	.000	.000	.000	65	14.894	1564.409	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.747	807.118	.000	.000
27	574.969	55.000	3.984	-45.500	67	14.700	807.118	.000	.000
28	574.873	338.472	.310	1061.844	68	.000	.000	.000	.000
29	574.848	338.472	.310	1061.844	69	.000	.000	.000	.000
30	574.848	338.472	.310	1061.844	70	.000	550.000	.000	.000
31	574.823	338.472	.310	1061.844	71	.000	585.348	.000	.000
32	574.483	460.014	.228	1525.731	72	.000	586.521	.000	.000
33	574.449	460.014	.228	1525.730	73	.000	.000	.000	.000
34	574.449	460.014	.228	1525.730	74	.000	.000	.000	.000
35	574.415	460.014	.228	1525.730	75	.000	.000	.000	.000
36	574.054	599.584	.181	2024.124	76	.000	.000	.000	.000
37	574.011	599.669	.181	2024.421	77	.000	.000	.000	.000
38	574.011	599.669	.181	2024.421	78	.000	.000	.000	.000
39	573.968	599.669	.181	2024.420	79	.000	.000	.000	.000
40	573.218	470.796	.223	1565.299	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:47:43

HYDRAULIC POWER	5.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	46.19	SPC	5.398	AMW	3.37
HYDRAULIC PUMP	30.29	LUBE PUMP	4.00	SECOND STAGE	17.10	O/F	.670		
TOTAL GEAR BOX	35.29			TOTAL TURBINE	63.29	PT OUT	14.700		

TURBINE INFORMATION

FLOW	3.175	PRESSURE	87.36	14.99	EFFICIENCY 1ST	.442	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1940.9	1562.9	EFFICIENCY 2ND	.580	A2	.2335	A4	.6096
PRESSURE RATIO	5.83	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.524	HP	63.29	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1110.01	646.86	749.99	749.99	749.99
PRESSURE IN	572.49	572.81	893.10	477.42	571.74
PRESSURE OUT	572.20	572.81	477.45	95.66	95.33
EFFECTIVE AREA	.16721	.11953	.00117	.00218	.01090
FLOW	1.137	.904	1.274	1.274	1.901

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.901	574.97	574.88	55.00	335.89	-45.5	1051.6	.266	1.000	1.000	2085.22 BTU/MIN
	HOT SIDE	.763	572.22	572.20	1110.01	273.72	3804.3	802.5	.793	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.901	574.83	574.51	335.89	460.01	1051.6	1525.7	.466	1.000	1.000	901.06 BTU/MIN
	HOT SIDE	1.901	574.03	573.32	602.35	470.65	2033.8	1564.8	.494	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.901	574.45	574.11	460.01	602.35	1525.7	2033.8	.832	1.000	1.000	965.75 BTU/MIN
	HOT SIDE	57.000	200.00	199.87	631.10	598.77	.0	.0	.189	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.901	573.28	572.90	470.65	646.86	1564.8	2189.8	.766	1.000	1.000	1187.94 BTU/MIN
	HOT SIDE	28.500	200.00	199.98	700.69	613.66	.0	.0	.378	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.997	572.64	572.59	646.86	1530.12	2189.8	5280.5	.964	1.000	1.000	3080.29 BTU/MIN
	HOT SIDE	3.175	14.93	14.77	1562.89	1103.13	.0	.0	.502	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.901	572.14	571.79	774.14	749.99	2635.8	2551.2	.051	1.000	1.000	-160.87 BTU/MIN
	HOT SIDE	1.274	900.00	899.93	300.00	749.99	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000
2	.000	.000	.000	.000
3	.000	.000	.000	.000
4	.000	.000	.000	.000
5	900.000	300.000	16.648	35.434
6	899.933	749.988	3.673	160.868
7	893.118	749.988	3.645	160.893
8	893.104	749.988	3.645	160.893
9	477.447	749.988	1.948	162.406
10	477.420	749.988	1.948	162.406
11	75.092	749.988	.390	163.813
12	200.000	700.689	.000	.000
13	199.984	613.656	.000	.000
14	199.984	613.656	.000	.000
15	199.984	613.656	.000	.000
16	200.000	631.098	.000	.000
17	200.000	631.098	.000	.000
18	200.000	631.098	.000	.000
19	199.869	598.775	.000	.000
20	.000	.000	.000	.000
21	.000	.000	.000	.000
22	.000	.000	.000	.000
23	.000	.000	.000	.000
24	.000	.000	.000	.000
25	.000	.000	.000	.000
26	575.000	55.000	3.984	-45.499
27	574.971	55.000	3.984	-45.500
28	574.881	335.893	.312	1051.620
29	574.858	335.893	.312	1051.620
30	574.858	335.893	.312	1051.620
31	574.835	335.893	.312	1051.620
32	574.515	460.008	.228	1525.706
33	574.483	460.008	.228	1525.706
34	574.483	460.008	.228	1525.706
35	574.451	460.008	.228	1525.706
36	574.111	602.352	.180	2033.826
37	574.071	602.348	.180	2033.812
38	574.071	602.348	.180	2033.812
39	574.030	602.348	.180	2033.812
40	573.318	470.647	.223	1564.756
41	573.285	470.647	.223	1564.756
42	572.903	646.860	.169	2189.779
43	572.860	646.860	.169	2189.778
44	572.860	646.860	.169	2189.778
45	572.817	646.860	.169	2189.778
46	572.639	646.860	.169	2189.774
47	572.594	1530.122	.072	5280.514
48	572.807	646.860	.169	2189.777
49	572.593	646.860	.000	.000
50	572.594	1110.009	.098	3804.261
51	572.520	1110.009	.098	3804.260
52	572.493	1110.009	.098	3804.259
53	572.197	.000	.000	.000
54	572.197	774.142	.138	2635.809
55	572.222	1110.009	.098	3804.253
56	572.197	273.716	.382	802.457
57	572.144	774.142	.138	2635.808
58	571.788	749.992	.144	2551.169
59	571.737	749.992	.144	2551.168
60	95.331	749.992	.024	2541.044
61	87.380	1940.864	.009	6737.070
62	87.357	1940.864	.000	.000
63	20.077	1665.000	.000	.000
64	14.993	1562.889	.000	.000
65	14.932	1562.889	.000	.000
66	14.766	1103.129	.000	.000
67	14.700	1103.129	.000	.000
68	.000	.000	.000	.000
69	.000	.000	.000	.000
70	.000	550.000	.000	.000
71	.000	586.581	.000	.000
72	.000	587.752	.000	.000
73	.000	.000	.000	.000
74	.000	.000	.000	.000
75	.000	.000	.000	.000
76	.000	.000	.000	.000
77	.000	.000	.000	.000
78	.000	.000	.000	.000
79	.000	.000	.000	.000
80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:47:57

HYDRAULIC POWER	10.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	48.94	SPC	4.719	AMW	3.12
HYDRAULIC PUMP	30.57	LUBE PUMP	4.00	SECOND STAGE	19.63	O/F	.550		
TOTAL GEAR BOX	40.57			TOTAL TURBINE	68.57	PT OUT	14.700		

TURBINE INFORMATION

FLOW	3.191	PRESSURE	90.98	14.98	EFFICIENCY 1ST	.430	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.362	TEMPERATURE	1936.8	1556.0	EFFICIENCY 2ND	.574	A2	.2335	A4	.6096
PRESSURE RATIO	6.07	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.517	HP	68.57	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1335.65	632.52	954.72	954.72	954.72
PRESSURE IN	571.42	572.47	893.07	390.80	570.52
PRESSURE OUT	570.94	572.47	390.84	98.93	98.64
EFFECTIVE AREA	.17444	.00000	.00117	.00267	.01335
FLOW	1.387	.000	1.132	1.132	2.059

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	2.059	574.97	574.86	55.00	351.02	-45.5	1111.4	.231	1.000	1.000	2381.90 BTU/MIN
	HOT SIDE	.672	571.19	571.17	1335.65	253.79	4595.1	722.8	.845	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	2.059	574.80	574.42	351.02	460.11	1111.4	1526.1	.466	1.000	1.000	853.82 BTU/MIN
	HOT SIDE	2.059	573.86	573.05	584.87	469.93	1972.6	1562.1	.492	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	2.059	574.35	573.96	460.11	585.00	1526.1	1973.0	.800	1.000	1.000	920.18 BTU/MIN
	HOT SIDE	57.000	200.00	199.81	616.18	584.99	.0	.0	.200	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	2.059	573.01	572.57	469.93	632.52	1562.1	2139.5	.741	1.000	1.000	1188.80 BTU/MIN
	HOT SIDE	28.500	200.00	199.98	689.44	601.74	.0	.0	.400	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	2.059	571.73	571.58	632.52	1335.71	2139.5	4595.4	.761	1.000	1.000	5056.39 BTU/MIN
	HOT SIDE	3.191	14.91	14.75	1555.98	802.79	.0	.0	.816	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	2.059	571.10	570.59	982.42	954.72	3360.6	3264.3	.041	1.000	1.000	-198.32 BTU/MIN
	HOT SIDE	1.132	900.00	899.94	300.00	954.72	35.4	210.1	.959	1.000	1.000	1 PASS PARALL

Computer Case 10 (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.014	469.928	.223	1562.118
2	.000	.000	.000	.000	42	572.571	632.519	.172	2139.515
3	.000	.000	.000	.000	43	572.522	632.519	.172	2139.514
4	.000	.000	.000	.000	44	572.522	632.519	.172	2139.514
5	900.000	300.000	16.648	35.434	45	572.472	632.519	.172	2139.513
6	899.935	954.721	2.893	210.119	46	571.729	632.519	.172	2139.499
7	893.084	954.721	2.871	210.132	47	571.576	1335.710	.082	4595.368
8	893.070	954.721	2.871	210.132	48	572.472	632.519	.172	2139.513
9	390.836	954.721	1.265	211.051	49	572.472	632.519	.000	.000
10	390.803	954.721	1.265	211.051	50	571.577	1335.646	.082	4595.140
11	98.932	954.721	.321	211.593	51	571.472	1335.646	.082	4595.138
12	200.000	689.435	.000	.000	52	571.425	1335.646	.082	4595.137
13	199.980	601.741	.000	.000	53	570.937	.000	.000	.000
14	199.980	601.741	.000	.000	54	571.171	982.425	.112	3360.650
15	199.980	601.741	.000	.000	55	571.194	1335.646	.082	4595.131
16	200.000	616.182	.000	.000	56	571.171	253.788	.412	722.823
17	200.000	616.182	.000	.000	57	571.095	982.425	.112	3360.648
18	200.000	616.182	.000	.000	58	570.591	954.723	.115	3264.323
19	199.806	584.986	.000	.000	59	570.517	954.723	.115	3264.322
20	.000	.000	.000	.000	60	98.637	954.723	.020	3253.441
21	.000	.000	.000	.000	61	91.001	1936.780	.009	6722.190
22	.000	.000	.000	.000	62	90.977	1936.780	.000	.000
23	.000	.000	.000	.000	63	20.533	1665.001	.000	.000
24	.000	.000	.000	.000	64	14.978	1555.976	.000	.000
25	.000	.000	.000	.000	65	14.912	1555.976	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.752	802.788	.000	.000
27	574.966	55.000	3.984	-45.500	67	14.700	802.788	.000	.000
28	574.857	351.020	.299	1111.381	68	.000	.000	.000	.000
29	574.829	351.020	.299	1111.381	69	.000	.000	.000	.000
30	574.829	351.020	.299	1111.381	70	.000	550.000	.000	.000
31	574.800	351.020	.299	1111.381	71	.000	570.992	.000	.000
32	574.420	460.109	.228	1526.078	72	.000	572.181	.000	.000
33	574.383	460.109	.228	1526.078	73	.000	.000	.000	.000
34	574.383	460.109	.228	1526.078	74	.000	.000	.000	.000
35	574.346	460.109	.228	1526.077	75	.000	.000	.000	.000
36	573.955	584.997	.184	1973.004	76	.000	.000	.000	.000
37	573.909	584.874	.184	1972.571	77	.000	.000	.000	.000
38	573.909	584.874	.184	1972.571	78	.000	.000	.000	.000
39	573.863	584.874	.184	1972.570	79	.000	.000	.000	.000
40	573.052	469.928	.223	1562.118	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:48:06

HYDRAULIC POWER	10.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	49.06	SPC	4.947	AMW	3.37
HYDRAULIC PUMP	30.57	LUBE PUMP	4.00	SECOND STAGE	19.51	O/F	.672		
TOTAL GEAR BOX	40.57			TOTAL TURBINE	68.57	PT OUT	14.700		

TURBINE INFORMATION

FLOW	3.345	PRESSURE	92.06	15.02	EFFICIENCY 1ST	.442	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1943.3	1554.3	EFFICIENCY 2ND	.580	A2	.2335	A4	.6096
PRESSURE RATIO	6.13	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.527	HP	68.57	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1125.54	637.15	749.79	749.79	749.80
PRESSURE IN	572.22	572.60	892.33	478.13	571.34
PRESSURE OUT	571.84	572.60	478.16	100.82	100.47
EFFECTIVE AREA	.15079	.10437	.00123	.00230	.01148
FLOW	1.155	.886	1.344	1.344	2.001

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	2.001	574.97	574.87	55.00	349.60	-45.5	1105.8	.275	1.000	1.000	2303.39 BTU/MIN
	HOT SIDE	.846	571.88	571.84	1125.54	293.92	3858.2	883.7	.777	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	2.001	574.81	574.45	349.60	460.15	1105.8	1526.2	.467	1.000	1.000	841.15 BTU/MIN
	HOT SIDE	2.001	573.92	573.16	586.57	469.94	1978.5	1562.2	.492	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	2.001	574.38	574.01	460.15	586.65	1526.2	1978.8	.807	1.000	1.000	905.39 BTU/MIN
	HOT SIDE	57.000	200.00	199.81	616.85	586.16	.0	.0	.196	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	2.001	573.12	572.70	469.94	637.15	1562.2	2155.7	.749	1.000	1.000	1187.55 BTU/MIN
	HOT SIDE	28.500	200.00	199.98	693.27	605.73	.0	.0	.392	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.115	572.39	572.33	637.15	1513.59	2155.7	5222.2	.956	1.000	1.000	3419.30 BTU/MIN
	HOT SIDE	3.345	14.95	14.77	1554.31	1069.77	.0	.0	.528	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	2.001	571.78	571.40	773.99	749.80	2635.3	2550.5	.051	1.000	1.000	-169.65 BTU/MIN
	HOT SIDE	1.344	900.00	899.93	300.00	749.79	35.4	160.8	.949	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.121	469.941	.223	1562.169
2	.000	.000	.000	.000	42	572.702	637.150	.171	2155.748
3	.000	.000	.000	.000	43	572.655	637.150	.171	2155.747
4	.000	.000	.000	.000	44	572.655	637.150	.171	2155.747
5	900.000	300.000	16.648	35.434	45	572.607	637.150	.171	2155.746
6	899.926	749.791	3.674	160.822	46	572.388	637.150	.171	2155.742
7	892.343	749.791	3.643	160.849	47	572.333	1513.589	.073	5222.243
8	892.327	749.791	3.643	160.850	48	572.598	637.150	.171	2155.746
9	478.155	749.791	1.951	162.358	49	572.333	637.150	.000	.000
10	478.126	749.791	1.951	162.358	50	572.334	1125.539	.097	3858.251
11	100.822	749.791	.411	163.750	51	572.250	1125.539	.097	3858.249
12	200.000	693.269	.000	.000	52	572.222	1125.539	.097	3858.248
13	199.981	605.734	.000	.000	53	571.841	.000	.000	.000
14	199.981	605.734	.000	.000	54	571.841	773.991	.138	2635.273
15	199.981	605.734	.000	.000	55	571.878	1125.539	.097	3858.240
16	200.000	616.849	.000	.000	56	571.841	293.923	.355	883.718
17	200.000	616.849	.000	.000	57	571.783	773.991	.138	2635.271
18	200.000	616.849	.000	.000	58	571.395	749.796	.144	2550.475
19	199.807	586.159	.000	.000	59	571.339	749.796	.144	2550.474
20	.000	.000	.000	.000	60	100.472	749.796	.026	2540.476
21	.000	.000	.000	.000	61	92.080	1943.271	.009	6745.256
22	.000	.000	.000	.000	62	92.056	1943.271	.000	.000
23	.000	.000	.000	.000	63	20.812	1665.000	.000	.000
24	.000	.000	.000	.000	64	15.017	1554.314	.000	.000
25	.000	.000	.000	.000	65	14.950	1554.314	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.771	1069.767	.000	.000
27	574.968	55.000	3.984	-45.500	67	14.700	1069.767	.000	.000
28	574.865	349.603	.300	1105.813	68	.000	.000	.000	.000
29	574.839	349.603	.300	1105.813	69	.000	.000	.000	.000
30	574.839	349.603	.300	1105.813	70	.000	550.000	.000	.000
31	574.812	349.603	.300	1105.813	71	.000	571.695	.000	.000
32	574.453	460.154	.228	1526.247	72	.000	572.884	.000	.000
33	574.418	460.154	.228	1526.246	73	.000	.000	.000	.000
34	574.418	460.154	.228	1526.246	74	.000	.000	.000	.000
35	574.382	460.154	.228	1526.246	75	.000	.000	.000	.000
36	574.012	586.648	.184	1978.792	76	.000	.000	.000	.000
37	573.969	586.574	.184	1978.532	77	.000	.000	.000	.000
38	573.969	586.574	.184	1978.532	78	.000	.000	.000	.000
39	573.925	586.574	.184	1978.531	79	.000	.000	.000	.000
40	573.157	469.941	.223	1562.169	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:48:30

HYDRAULIC POWER	90.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	88.78	SPC	2.773	AMW	3.30
HYDRAULIC PUMP	35.14	LUBE PUMP	4.00	SECOND STAGE	64.36	D/F	.635		
TOTAL GEAR BOX	125.14			TOTAL TURBINE	153.14	PT OUT	14.700		

TURBINE INFORMATION

FLOW	5.783	PRESSURE	161.21	15.45	EFFICIENCY 1ST	.440	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.359	TEMPERATURE	1950.3	1458.2	EFFICIENCY 2ND	.549	A2	.2335	A4	.6096
PRESSURE RATIO	10.43	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.547	HP	153.14	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1243.94	563.97	821.18	821.18	821.22
PRESSURE IN	564.96	567.78	876.44	444.02	561.64
PRESSURE OUT	562.78	567.78	444.12	176.77	176.14
EFFECTIVE AREA	.10625	.00000	.00219	.00432	.02160
FLOW	1.841	.000	2.245	2.245	3.538

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	3.538	574.90	574.56	55.00	389.46	-45.5	1260.8	.281	1.000	1.000	4621.27 BTU/MIN
	HOT SIDE	1.697	563.35	563.12	1243.94	416.90	4271.8	1365.1	.696	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	3.538	574.38	573.26	389.46	460.01	1260.8	1525.7	.458	1.000	1.000	937.02 BTU/MIN
	HOT SIDE	3.538	571.71	569.46	543.52	470.29	1827.6	1563.4	.475	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	3.538	573.03	571.97	460.01	543.52	1525.7	1827.6	.607	1.000	1.000	1068.13 BTU/MIN
	HOT SIDE	57.000	200.00	199.63	597.61	560.75	.0	.0	.268	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	3.538	569.34	568.05	470.29	563.97	1563.4	1899.2	.546	1.000	1.000	1187.94 BTU/MIN
	HOT SIDE	28.500	200.00	199.90	641.71	550.63	.0	.0	.531	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	3.538	565.76	565.34	563.97	1243.94	1899.2	4271.8	.760	1.000	1.000	8393.50 BTU/MIN
	HOT SIDE	5.783	15.27	14.85	1458.22	767.02	.0	.0	.773	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	3.538	562.91	561.84	847.20	821.22	2890.3	2800.0	.047	1.000	1.000	-319.68 BTU/MIN
	HOT SIDE	2.245	900.00	899.81	300.00	821.18	35.4	177.9	.952	1.000	1.000	1 PASS PARALL

Computer Case 11 (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	569.344	470.294	.222	1563.408
2	.000	.000	.000	.000	42	568.045	563.969	.187	1899.211
3	.000	.000	.000	.000	43	567.911	563.969	.187	1899.209
4	.000	.000	.000	.000	44	567.911	563.969	.187	1899.209
5	900.000	300.000	16.648	35.434	45	567.776	563.969	.187	1899.206
6	899.808	821.177	3.265	177.864	46	565.756	563.969	.187	1899.171
7	876.496	821.177	3.181	177.927	47	565.340	1243.939	.085	4271.811
8	876.445	821.177	3.181	177.927	48	567.776	563.969	.187	1899.206
9	444.123	821.177	1.620	179.080	49	567.776	563.969	.000	.000
10	444.023	821.177	1.619	179.081	50	565.340	1243.937	.085	4271.803
11	176.769	821.177	.646	179.822	51	565.045	1243.937	.085	4271.796
12	200.000	641.713	.000	.000	52	564.965	1243.937	.085	4271.794
13	199.902	550.633	.000	.000	53	562.781	.000	.000	.000
14	199.902	550.633	.000	.000	54	563.117	847.200	.125	2890.323
15	199.902	550.633	.000	.000	55	563.345	1243.937	.085	4271.755
16	200.000	597.614	.000	.000	56	563.117	416.902	.247	1365.053
17	200.000	597.614	.000	.000	57	562.915	847.200	.125	2890.319
18	200.000	597.614	.000	.000	58	561.843	821.215	.127	2799.954
19	199.630	560.750	.000	.000	59	561.645	821.215	.127	2799.950
20	.000	.000	.000	.000	60	176.141	821.215	.041	2791.309
21	.000	.000	.000	.000	61	161.255	1950.252	.016	6773.313
22	.000	.000	.000	.000	62	161.214	1950.252	.000	.000
23	.000	.000	.000	.000	63	34.939	1665.000	.000	.000
24	.000	.000	.000	.000	64	15.451	1458.216	.000	.000
25	.000	.000	.000	.000	65	15.266	1458.216	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.855	767.023	.000	.000
27	574.899	55.000	3.984	-45.501	67	14.700	767.023	.000	.000
28	574.562	389.462	.269	1260.821	68	.000	.000	.000	.000
29	574.469	389.462	.269	1260.821	69	.000	.000	.000	.000
30	574.469	389.462	.269	1260.821	70	.000	550.000	.000	.000
31	574.375	389.462	.269	1260.820	71	.000	551.536	.000	.000
32	573.256	460.009	.228	1525.694	72	.000	552.748	.000	.000
33	573.145	460.009	.228	1525.693	73	.000	.000	.000	.000
34	573.145	460.009	.228	1525.693	74	.000	.000	.000	.000
35	573.035	460.009	.228	1525.691	75	.000	.000	.000	.000
36	571.971	543.523	.193	1827.627	76	.000	.000	.000	.000
37	571.841	543.518	.193	1827.607	77	.000	.000	.000	.000
38	571.841	543.518	.193	1827.607	78	.000	.000	.000	.000
39	571.711	543.518	.193	1827.605	79	.000	.000	.000	.000
40	569.458	470.294	.222	1563.410	80	.000	.000	.000	1.000

Computer Case 118

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:48:59

HYDRAULIC POWER	90.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	88.81	SPC	2.817	AMW	3.38
HYDRAULIC PUMP	35.14	LUBE PUMP	4.00	SECOND STAGE	64.33	O/F	.677		
TOTAL GEAR BOX	125.14			TOTAL TURBINE	153.14	PT OUT	14.700		

TURBINE INFORMATION

FLOW	5.875	PRESSURE	161.83	15.49	EFFICIENCY 1ST	.445	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1952.4	1456.8	EFFICIENCY 2ND	.554	A2	.2335	A4	.6096
PRESSURE RATIO	10.45	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.551	HP	153.14	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1170.21	564.89	749.95	749.95	750.00
PRESSURE IN	566.08	567.91	875.96	474.71	562.62
PRESSURE OUT	563.93	567.91	474.80	177.36	176.74
EFFECTIVE AREA	.09190	.03450	.00221	.00408	.02041
FLOW	1.631	.736	2.373	2.373	3.503

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	3.503	574.90	574.57	55.00	388.92	-45.5	1258.7	.299	1.000	1.000	4568.23 BTU/MIN
	HOT SIDE	1.871	564.20	563.93	1170.21	429.37	4013.4	1411.9	.664	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	3.503	574.39	573.29	388.92	460.00	1258.7	1525.7	.458	1.000	1.000	934.93 BTU/MIN
	HOT SIDE	3.503	571.77	569.56	544.04	470.26	1829.4	1563.3	.476	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	3.503	573.07	572.03	460.00	544.05	1525.7	1829.5	.611	1.000	1.000	1064.07 BTU/MIN
	HOT SIDE	57.000	200.00	199.63	597.64	560.92	.0	.0	.267	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	3.503	569.45	568.18	470.26	564.89	1563.3	1902.4	.551	1.000	1.000	1187.97 BTU/MIN
	HOT SIDE	28.500	200.00	199.91	642.12	551.10	.0	.0	.530	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	2.766	566.68	566.42	564.89	1331.31	1902.4	4579.7	.859	1.000	1.000	7406.42 BTU/MIN
	HOT SIDE	5.875	15.30	14.87	1456.79	857.44	.0	.0	.672	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	3.503	563.75	562.79	774.41	750.00	2636.6	2551.0	.051	1.000	1.000	-299.70 BTU/MIN
	HOT SIDE	2.373	900.00	899.80	300.00	749.95	35.4	160.9	.948	1.000	1.000	1 PASS PARALL

Computer Case 11B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	569.451	470.255	.222	1563.270
2	.000	.000	.000	.000	42	568.183	564.890	.187	1902.440
3	.000	.000	.000	.000	43	568.051	564.890	.187	1902.438
4	.000	.000	.000	.000	44	568.051	564.890	.187	1902.438
5	900.000	300.000	16.648	35.434	45	567.919	564.890	.187	1902.435
6	899.801	749.947	3.673	160.859	46	566.683	564.890	.187	1902.414
7	876.011	749.947	3.576	160.946	47	566.416	1331.311	.081	4579.741
8	875.961	749.947	3.575	160.946	48	567.913	564.890	.187	1902.435
9	474.802	749.947	1.937	162.405	49	566.416	564.890	.000	.000
10	474.708	749.947	1.937	162.406	50	566.416	1170.213	.091	4013.431
11	177.360	749.947	.723	163.510	51	566.144	1170.213	.091	4013.424
12	200.000	642.116	.000	.000	52	566.085	1170.213	.091	4013.423
13	199.905	551.103	.000	.000	53	563.932	.000	.000	.000
14	199.905	551.103	.000	.000	54	563.933	774.413	.136	2636.581
15	199.905	551.103	.000	.000	55	564.203	1170.213	.091	4013.378
16	200.000	597.637	.000	.000	56	563.933	429.365	.240	1411.861
17	200.000	597.637	.000	.000	57	563.751	774.413	.136	2636.577
18	200.000	597.637	.000	.000	58	562.793	750.001	.142	2551.011
19	199.634	560.920	.000	.000	59	562.618	750.001	.142	2551.008
20	.000	.000	.000	.000	60	176.736	750.001	.045	2542.817
21	.000	.000	.000	.000	61	161.873	1952.439	.016	6781.401
22	.000	.000	.000	.000	62	161.832	1952.439	.000	.000
23	.000	.000	.000	.000	63	35.127	1665.000	.000	.000
24	.000	.000	.000	.000	64	15.487	1456.791	.000	.000
25	.000	.000	.000	.000	65	15.301	1456.791	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.874	857.444	.000	.000
27	574.901	55.000	3.984	-45.501	67	14.700	857.444	.000	.000
28	574.571	388.923	.270	1258.745	68	.000	.000	.000	.000
29	574.480	388.923	.270	1258.744	69	.000	.000	.000	.000
30	574.480	388.923	.270	1258.744	70	.000	550.000	.000	.000
31	574.388	388.923	.269	1258.743	71	.000	551.560	.000	.000
32	573.290	460.002	.228	1525.669	72	.000	552.772	.000	.000
33	573.182	460.002	.228	1525.668	73	.000	.000	.000	.000
34	573.182	460.002	.228	1525.668	74	.000	.000	.000	.000
35	573.073	460.002	.228	1525.666	75	.000	.000	.000	.000
36	572.030	544.046	.193	1829.462	76	.000	.000	.000	.000
37	571.902	544.040	.193	1829.440	77	.000	.000	.000	.000
38	571.902	544.040	.193	1829.440	78	.000	.000	.000	.000
39	571.774	544.040	.193	1829.438	79	.000	.000	.000	.000
40	569.563	470.255	.222	1563.271	80	.000	.000	.000	1.000

Computer Case 12

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:49:31

HYDRAULIC POWER	180.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	134.17	SPC	2.380	AMW	3.38
HYDRAULIC PUMP	40.29	LUBE PUMP	4.00	SECOND STAGE	114.12	O/F	.676		
TOTAL GEAR BOX	220.29			TOTAL TURBINE	248.28	PT OUT	14.700		

TURBINE INFORMATION

FLOW	8.736	PRESSURE	241.00	16.21	EFFICIENCY 1ST	.447	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1956.7	1416.9	EFFICIENCY 2ND	.507	A2	.2335	A4	.6096
PRESSURE RATIO	14.86	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.543	HP	248.28	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1197.87	563.46	756.39	756.39	756.58
PRESSURE IN	553.53	559.39	845.03	460.12	543.76
PRESSURE OUT	546.28	559.39	460.33	264.25	263.31
EFFECTIVE AREA	.06069	.00000	.00343	.00631	.03155
FLOW	1.931	.000	3.524	3.524	5.212

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	5.212	574.78	574.04	55.00	407.58	-45.5	1329.9	.308	1.000	1.000	7168.47 BTU/MIN
	HOT SIDE	3.281	547.31	546.40	1197.87	536.02	4109.1	1800.6	.579	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	5.212	573.62	571.23	407.58	459.94	1329.9	1525.4	.449	1.000	1.000	1019.10 BTU/MIN
	HOT SIDE	5.212	568.00	563.34	524.31	470.41	1759.1	1563.7	.462	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	5.212	570.75	568.56	459.94	524.28	1525.4	1759.0	.471	1.000	1.000	1217.20 BTU/MIN
	HOT SIDE	57.000	200.00	199.57	596.47	554.32	.0	.0	.309	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	5.212	563.09	559.96	470.41	533.46	1563.7	1791.7	.413	1.000	1.000	1188.10 BTU/MIN
	HOT SIDE	28.500	200.00	199.82	622.99	530.90	.0	.0	.604	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	5.212	555.13	554.25	533.46	1197.86	1791.6	4109.3	.752	1.000	1.000	12079.45 BTU/MIN
	HOT SIDE	8.736	15.83	15.04	1416.87	757.94	.0	.0	.746	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	5.212	545.98	544.17	781.24	756.58	2660.1	2573.7	.051	1.000	1.000	-450.56 BTU/MIN
	HOT SIDE	3.524	900.00	899.59	300.00	756.39	35.4	162.4	.948	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	563.092	470.407	.219	1563.741
2	.000	.000	.000	.000	42	559.961	533.464	.193	1791.698
3	.000	.000	.000	.000	43	559.677	533.464	.192	1791.693
4	.000	.000	.000	.000	44	559.677	533.464	.192	1791.693
5	900.000	300.000	16.648	35.434	45	559.393	533.464	.192	1791.688
6	899.586	756.392	3.627	162.391	46	555.128	533.464	.191	1791.618
7	843.146	756.392	3.400	162.587	47	554.250	1197.864	.086	4109.269
8	843.028	756.392	3.399	162.588	48	559.393	533.464	.192	1791.688
9	460.335	756.392	1.856	163.941	49	559.393	533.464	.000	.000
10	460.119	756.392	1.855	163.941	50	554.249	1197.874	.086	4109.307
11	264.251	756.392	1.065	164.666	51	553.613	1197.874	.086	4109.291
12	200.000	622.992	.000	.000	52	553.526	1197.874	.086	4109.289
13	199.816	530.896	.000	.000	53	546.284	.000	.000	.000
14	199.816	530.896	.000	.000	54	546.404	781.237	.131	2660.108
15	199.816	530.896	.000	.000	55	547.306	1197.874	.085	4109.139
16	200.000	596.467	.000	.000	56	546.404	536.019	.187	1800.614
17	200.000	596.467	.000	.000	57	545.985	781.237	.130	2660.099
18	200.000	596.467	.000	.000	58	544.167	756.576	.136	2573.651
19	199.569	554.319	.000	.000	59	543.763	756.576	.136	2573.642
20	.000	.000	.000	.000	60	263.312	756.576	.066	2567.660
21	.000	.000	.000	.000	61	241.058	1956.741	.023	6799.398
22	.000	.000	.000	.000	62	240.997	1956.741	.000	.000
23	.000	.000	.000	.000	63	51.676	1665.002	.000	.000
24	.000	.000	.000	.000	64	16.214	1416.868	.000	.000
25	.000	.000	.000	.000	65	15.832	1416.868	.000	.000
26	575.000	55.000	3.984	-45.499	66	15.036	757.944	.000	.000
27	574.780	55.000	3.984	-45.502	67	14.700	757.944	.000	.000
28	574.045	407.575	.257	1329.893	68	.000	.000	.000	.000
29	573.832	407.575	.257	1329.891	69	.000	.000	.000	.000
30	573.832	407.575	.257	1329.891	70	.000	550.000	.000	.000
31	573.619	407.575	.257	1329.889	71	.000	550.332	.000	.000
32	571.234	459.941	.227	1525.421	72	.000	551.546	.000	.000
33	570.993	459.941	.227	1525.418	73	.000	.000	.000	.000
34	570.993	459.941	.227	1525.418	74	.000	.000	.000	.000
35	570.752	459.941	.227	1525.415	75	.000	.000	.000	.000
36	568.555	524.276	.199	1758.955	76	.000	.000	.000	.000
37	568.279	524.314	.199	1759.088	77	.000	.000	.000	.000
38	568.279	524.314	.199	1759.088	78	.000	.000	.000	.000
39	568.004	524.314	.199	1759.083	79	.000	.000	.000	.000
40	563.342	470.407	.219	1563.744	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:50:24

HYDRAULIC POWER	270.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	179.89	SPC	-2.224	AMW	3.43
HYDRAULIC PUMP	45.43	LUBE PUMP	4.00	SECOND STAGE	163.54	O/F	.702		
TOTAL GEAR BOX	315.43			TOTAL TURBINE	343.43	PT OUT	14.700		

TURBINE INFORMATION

FLOW	11.691	PRESSURE	320.49	17.17	EFFICIENCY 1ST	.452	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.356	TEMPERATURE	1961.3	1395.7	EFFICIENCY 2ND	.484	A2	.2335	A4	.6096
PRESSURE RATIO	18.67	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.538	HP	343.43	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1169.70	517.83	716.40	716.40	716.84
PRESSURE IN	539.58	549.54	791.99	477.50	516.41
PRESSURE OUT	520.27	549.54	477.86	351.07	349.84
EFFECTIVE AREA	.02857	.00000	.00492	.00895	.04476
FLOW	1.483	.000	4.823	4.823	6.868

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	6.868	574.62	573.34	55.00	419.01	-45.5	1373.1	.327	1.000	1.000	9743.73 BTU/MIN
	HOT SIDE	5.385	522.79	520.29	1169.70	622.28	4010.6	2102.7	.491	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	6.868	572.58	568.49	419.01	460.00	1373.1	1525.6	.440	1.000	1.000	1047.30 BTU/MIN
	HOT SIDE	6.868	563.02	555.14	512.08	470.11	1715.0	1562.5	.451	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	6.868	567.65	563.97	460.00	512.07	1525.6	1715.0	.382	1.000	1.000	1301.24 BTU/MIN
	HOT SIDE	57.000	200.00	199.54	596.20	551.05	.0	.0	.331	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	6.868	554.70	550.52	470.11	517.83	1562.5	1735.5	.329	1.000	1.000	1187.99 BTU/MIN
	HOT SIDE	28.500	200.00	199.76	615.31	522.61	.0	.0	.638	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	6.868	542.22	540.73	517.83	1169.70	1735.4	4011.0	.743	1.000	1.000	15630.38 BTU/MIN
	HOT SIDE	11.691	16.54	15.28	1395.67	758.88	.0	.0	.725	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	6.868	519.57	517.10	740.49	716.84	2516.8	2483.9	.054	1.000	1.000	-569.47 BTU/MIN
	HOT SIDE	4.823	900.00	899.27	300.00	716.40	35.4	152.9	.945	1.000	1.000	1 PASS PARALL

Computer Case 13 (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	554.702	470.106	.216	1562.525
2	.000	.000	.000	.000	42	550.517	517.826	.195	1735.488
3	.000	.000	.000	.000	43	550.030	517.826	.195	1735.481
4	.000	.000	.000	.000	44	550.030	517.826	.195	1735.481
5	900.000	300.000	16.648	35.434	45	549.543	517.826	.195	1735.473
6	899.275	716.404	3.904	152.894	46	542.223	517.826	.192	1735.357
7	792.204	716.404	3.437	153.337	47	540.729	1169.700	.087	4011.028
8	791.986	716.404	3.436	153.338	48	549.543	517.826	.195	1735.473
9	477.858	716.404	2.068	154.659	49	549.543	517.826	.000	.000
10	477.496	716.404	2.066	154.660	50	540.729	1169.700	.087	4011.030
11	351.067	716.404	1.517	155.210	51	539.635	1169.700	.087	4011.003
12	200.000	615.311	.000	.000	52	539.584	1169.700	.087	4011.002
13	199.760	522.613	.000	.000	53	520.271	.000	.000	.000
14	199.760	522.613	.000	.000	54	520.286	740.489	.133	2516.785
15	199.760	522.613	.000	.000	55	522.790	1169.700	.084	4010.599
16	200.000	596.202	.000	.000	56	520.286	622.276	.159	2102.650
17	200.000	596.202	.000	.000	57	519.573	740.489	.133	2516.770
18	200.000	596.202	.000	.000	58	517.102	716.837	.138	2433.859
19	199.536	551.054	.000	.000	59	516.412	716.837	.137	2433.845
20	.000	.000	.000	.000	60	349.844	716.837	.094	2430.450
21	.000	.000	.000	.000	61	320.574	1961.263	.031	6817.665
22	.000	.000	.000	.000	62	320.492	1961.263	.000	.000
23	.000	.000	.000	.000	63	68.164	1665.000	.000	.000
24	.000	.000	.000	.000	64	17.170	1395.674	.000	.000
25	.000	.000	.000	.000	65	16.543	1395.674	.000	.000
26	575.000	55.000	3.984	-45.499	66	15.284	758.875	.000	.000
27	574.618	55.000	3.984	-45.505	67	14.700	758.875	.000	.000
28	573.338	419.007	.250	1373.113	68	.000	.000	.000	.000
29	572.958	419.007	.250	1373.109	69	.000	.000	.000	.000
30	572.958	419.007	.250	1373.109	70	.000	550.000	.000	.000
31	572.578	419.007	.250	1373.105	71	.000	550.055	.000	.000
32	568.486	459.995	.226	1525.585	72	.000	551.270	.000	.000
33	568.066	459.995	.226	1525.580	73	.000	.000	.000	.000
34	568.066	459.995	.226	1525.580	74	.000	.000	.000	.000
35	567.645	459.995	.226	1525.574	75	.000	.000	.000	.000
36	563.965	512.074	.202	1715.026	76	.000	.000	.000	.000
37	563.495	512.077	.202	1715.031	77	.000	.000	.000	.000
38	563.495	512.077	.202	1715.031	78	.000	.000	.000	.000
39	563.024	512.077	.202	1715.023	79	.000	.000	.000	.000
40	555.142	470.106	.216	1562.531	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 12:44:38

HYDRAULIC POWER	350.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	220.75	SPC	2.147	AMW	3.46
HYDRAULIC PUMP	50.00	LUBE PUMP	4.00	SECOND STAGE	207.25	O/F	.719		
TOTAL GEAR BOX	400.00			TOTAL TURBINE	428.00	PT OUT	14.700		

TURBINE INFORMATION

FLOW	14.317	PRESSURE	390.95	18.15	EFFICIENCY 1ST	.455	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.356	TEMPERATURE	1964.4	1383.9	EFFICIENCY 2ND	.471	A2	.2335	A4	.6096
PRESSURE RATIO	21.54	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.534	HP	428.00	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1151.98	508.97	691.57	691.57	692.31
PRESSURE IN	523.40	538.04	722.83	469.46	477.98
PRESSURE OUT	482.94	538.04	470.01	428.00	426.52
EFFECTIVE AREA	.00855	.00000	.00672	.01712	.08559
FLOW	.638	.000	5.986	5.986	8.331

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	8.331	574.44	572.56	55.00	425.88	-45.5	1398.9	.338	1.000	1.000	12033.06 BTU/MIN
	HOT SIDE	7.693	488.71	483.32	1151.98	679.08	3948.2	2300.9	.431	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	8.331	571.42	565.46	425.88	460.00	1398.9	1525.6	.434	1.000	1.000	1055.44 BTU/MIN
	HOT SIDE	8.331	557.53	546.15	504.51	469.69	1687.6	1560.9	.443	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	8.331	564.22	558.91	460.00	504.51	1525.6	1687.7	.327	1.000	1.000	1350.57 BTU/MIN
	HOT SIDE	57.000	200.00	199.52	596.12	549.19	.0	.0	.345	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	8.331	545.49	539.48	469.69	508.97	1560.9	1703.5	.278	1.000	1.000	1187.94 BTU/MIN
	HOT SIDE	28.500	200.00	199.72	611.11	518.09	.0	.0	.658	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	8.331	527.23	525.03	508.97	1151.98	1703.3	3949.1	.735	1.000	1.000	18709.27 BTU/MIN
	HOT SIDE	14.317	17.27	15.56	1383.93	761.65	.0	.0	.711	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	8.331	482.24	479.03	715.27	692.31	2427.6	2347.2	.055	1.000	1.000	-670.44 BTU/MIN
	HOT SIDE	5.986	900.00	898.93	300.00	691.57	35.4	147.0	.943	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	545.493	469.686	.213	1560.867
2	.000	.000	.000	.000	42	539.478	508.967	.194	1703.463
3	.000	.000	.000	.000	43	538.760	508.967	.194	1703.452
4	.000	.000	.000	.000	44	538.760	508.967	.194	1703.452
5	900.000	300.000	16.648	35.434	45	538.040	508.967	.194	1703.441
6	898.929	691.573	4.076	146.997	46	527.231	508.967	.190	1703.275
7	723.182	691.573	3.273	147.801	47	525.035	1151.984	.086	3949.063
8	722.830	691.573	3.271	147.803	48	538.040	508.967	.194	1703.441
9	470.006	691.573	2.120	148.967	49	538.040	508.967	.000	.000
10	469.461	691.573	2.117	148.970	50	525.035	1151.984	.086	3949.062
11	427.996	691.573	1.929	149.161	51	523.412	1151.984	.086	3949.023
12	200.000	611.111	.000	.000	52	523.403	1151.984	.086	3949.023
13	199.723	518.089	.000	.000	53	482.938	.000	.000	.000
14	199.723	518.089	.000	.000	54	483.321	715.265	.129	2427.661
15	199.723	518.089	.000	.000	55	488.713	1151.984	.080	3948.193
16	200.000	596.118	.000	.000	56	483.321	679.075	.136	2300.906
17	200.000	596.118	.000	.000	57	482.238	715.265	.129	2427.638
18	200.000	596.118	.000	.000	58	479.029	692.306	.133	2347.161
19	199.518	549.194	.000	.000	59	477.975	692.306	.132	2347.140
20	.000	.000	.000	.000	60	426.523	692.306	.119	2346.140
21	.000	.000	.000	.000	61	391.054	1964.369	.038	6830.699
22	.000	.000	.000	.000	62	390.954	1964.369	.000	.000
23	.000	.000	.000	.000	63	82.653	1665.000	.000	.000
24	.000	.000	.000	.000	64	18.146	1383.928	.000	.000
25	.000	.000	.000	.000	65	17.272	1383.928	.000	.000
26	575.000	55.000	3.984	-45.499	66	15.556	761.648	.000	.000
27	574.439	55.000	3.984	-45.507	67	14.700	761.648	.000	.000
28	572.558	425.881	.246	1398.896	68	.000	.000	.000	.000
29	571.989	425.881	.245	1398.890	69	.000	.000	.000	.000
30	571.989	425.881	.245	1398.890	70	.000	550.000	.000	.000
31	571.419	425.881	.245	1398.884	71	.000	549.967	.000	.000
32	565.461	460.003	.225	1525.575	72	.000	551.181	.000	.000
33	564.839	460.003	.225	1525.567	73	.000	.000	.000	.000
34	564.839	460.003	.225	1525.567	74	.000	.000	.000	.000
35	564.218	460.003	.224	1525.559	75	.000	.000	.000	.000
36	558.910	504.515	.203	1687.676	76	.000	.000	.000	.000
37	558.221	504.512	.203	1687.656	77	.000	.000	.000	.000
38	558.221	504.512	.203	1687.656	78	.000	.000	.000	.000
39	557.532	504.512	.203	1687.646	79	.000	.000	.000	.000
40	546.149	469.686	.213	1560.876	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:52:14

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	28.26	SPC	3.625	AMW	3.00
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	29.74	O/F	.486		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	.282		

TURBINE INFORMATION

FLOW	1.813	PRESSURE	52.66	1.48	EFFICIENCY 1ST	.417	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.364	TEMPERATURE	1931.0	1385.1	EFFICIENCY 2ND	.378	A2	.2335	A4	.6096
PRESSURE RATIO	35.69	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.460	HP	58.00	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1219.32	706.39	1060.93	1060.93	1060.93
PRESSURE IN	573.71	574.12	897.88	347.20	573.43
PRESSURE OUT	573.71	574.12	347.21	56.88	56.74
EFFECTIVE AREA	1.00000	.00000	.00064	.00166	.00829
FLOW	1.081	.000	.593	.593	1.220

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.220	574.99	574.97	55.00	160.26	-45.5	379.8	.090	1.000	1.000	518.64 BTU/MIN
	HOT SIDE	.138	573.73	573.73	1219.32	70.73	4185.2	21.1	.986	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.220	574.96	574.86	160.26	409.80	379.8	1338.3	.450	1.000	1.000	1169.05 BTU/MIN
	HOT SIDE	1.220	574.65	574.34	714.80	432.64	2427.9	1424.2	.509	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.220	574.84	574.69	409.80	714.94	1338.3	2428.4	.950	1.000	1.000	1329.46 BTU/MIN
	HOT SIDE	57.000	200.00	199.98	731.13	690.69	.0	.0	.126	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.220	574.32	574.16	432.64	706.39	1424.2	2398.4	.879	1.000	1.000	1188.12 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	743.92	659.99	.0	.0	.270	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.220	573.83	573.77	706.39	1219.32	2398.4	4185.2	.756	1.000	1.000	2179.22 BTU/MIN
	HOT SIDE	1.813	1.28	.63	1385.06	811.93	.0	.0	.844	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.220	573.70	573.46	1089.01	1060.93	3731.3	3633.7	.036	1.000	1.000	-119.05 BTU/MIN
	HOT SIDE	.593	900.00	899.97	300.00	1060.93	35.4	235.8	.964	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000
2	.000	.000	.000	.000
3	.000	.000	.000	.000
4	.000	.000	.000	.000
5	900.000	300.000	16.648	35.434
6	899.975	1060.931	2.597	235.773
7	897.887	1060.931	2.591	235.775
8	897.883	1060.931	2.591	235.775
9	347.211	1060.931	1.011	236.412
10	347.200	1060.931	1.011	236.412
11	56.880	1060.931	.166	236.758
12	200.000	743.915	.000	.000
13	199.994	659.990	.000	.000
14	199.994	659.990	.000	.000
15	199.994	659.990	.000	.000
16	200.000	731.133	.000	.000
17	200.000	731.133	.000	.000
18	200.000	731.133	.000	.000
19	199.982	690.693	.000	.000
20	.000	.000	.000	.000
21	.000	.000	.000	.000
22	.000	.000	.000	.000
23	.000	.000	.000	.000
24	.000	.000	.000	.000
25	.000	.000	.000	.000
26	575.000	55.000	3.984	-45.499
27	574.988	55.000	3.984	-45.500
28	574.970	160.256	.683	379.754
29	574.966	160.256	.683	379.754
30	574.966	160.256	.683	379.754
31	574.961	160.256	.683	379.755
32	574.863	409.797	.256	1338.301
33	574.851	409.797	.256	1338.301
34	574.851	409.797	.256	1338.301
35	574.839	409.797	.256	1338.301
36	574.688	714.935	.153	2428.378
37	574.668	714.795	.153	2427.887
38	574.668	714.795	.153	2427.887
39	574.649	714.795	.153	2427.887
40	574.335	432.637	.243	1424.230
41	574.323	432.637	.243	1424.230
42	574.160	706.389	.155	2398.417
43	574.141	706.389	.155	2398.416
44	574.141	706.389	.155	2398.416
45	574.121	706.389	.155	2398.416
46	573.832	706.389	.155	2398.410
47	573.774	1219.316	.088	4185.241
48	574.121	706.389	.155	2398.416
49	574.121	706.389	.000	.000
50	573.774	1219.319	.088	4185.250
51	573.740	1219.319	.088	4185.250
52	573.713	1219.319	.088	4185.249
53	573.705	.000	.000	.000
54	573.728	1089.006	.101	3731.266
55	573.729	1219.319	.088	4185.249
56	573.728	70.731	2.964	21.096
57	573.698	1089.006	.101	3731.266
58	573.457	1060.931	.104	3633.650
59	573.428	1060.931	.104	3633.650
60	56.735	1060.931	.010	3621.479
61	52.678	1931.035	.005	6700.619
62	52.664	1931.035	.000	.000
63	11.706	1665.002	.000	.000
64	1.475	1385.056	.000	.000
65	1.276	1385.056	.000	.000
66	.629	811.935	.000	.000
67	.282	.000	.000	.000
68	.000	.000	.000	.000
69	.000	.000	.000	.000
70	.000	750.000	.000	.000
71	.000	690.693	.000	.000
72	.000	691.758	.000	.000
73	.000	.000	.000	.000
74	.000	.000	.000	.000
75	.000	.000	.000	.000
76	.000	.000	.000	.000
77	.000	.000	.000	.000
78	.000	.000	.000	.000
79	.000	.000	.000	.000
80	.000	.000	.000	1.000

Computer Case 15B

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:52:26

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	28.38	SPC	3.903	AMW	3.37
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	29.62	O/F	.670		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	.338		

TURBINE INFORMATION

FLOW	1.952	PRESSURE	53.70	1.63	EFFICIENCY 1ST	.435	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1940.7	1377.2	EFFICIENCY 2ND	.403	A2	.2335	A4	.6096
PRESSURE RATIO	32.98	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.482	HP	58.00	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	875.09	707.28	750.00	750.00	750.00
PRESSURE IN	574.15	574.20	897.39	479.19	573.95
PRESSURE OUT	574.14	574.20	479.20	58.81	58.60
EFFECTIVE AREA	1.00000	.48633	.00071	.00133	.00667
FLOW	1.021	.876	.783	.783	1.168

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.168	574.99	574.98	55.00	139.64	-45.5	311.6	.103	1.000	1.000	417.25 BTU/MIN
	HOT SIDE	.147	574.16	574.15	875.09	73.40	2987.5	36.6	.978	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.168	574.97	574.88	139.64	397.25	311.6	1290.6	.447	1.000	1.000	1143.87 BTU/MIN
	HOT SIDE	1.168	574.69	574.40	715.43	422.13	2030.1	1384.9	.509	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.168	574.86	574.72	397.25	715.43	1290.6	2430.1	.953	1.000	1.000	1331.48 BTU/MIN
	HOT SIDE	57.000	200.00	199.98	731.17	690.72	.0	.0	.121	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.168	574.39	574.24	422.13	707.28	1384.9	2401.5	.886	1.000	1.000	1187.95 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	743.83	660.00	.0	.0	.261	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.293	574.19	574.19	707.28	1377.09	2401.5	4741.3	****	1.000	1.000	684.91 BTU/MIN
	HOT SIDE	1.952	1.44	.75	1377.20	1210.51	.0	.0	.249	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.168	574.13	573.97	774.15	750.00	2635.9	2551.2	.051	1.000	1.000	-98.88 BTU/MIN
	HOT SIDE	.783	900.00	899.97	300.00	750.00	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.394	422.129	.249	1384.855
2	.000	.000	.000	.000	42	574.245	707.282	.155	2401.548
3	.000	.000	.000	.000	43	574.227	707.282	.155	2401.547
4	.000	.000	.000	.000	44	574.227	707.282	.155	2401.547
5	900.000	300.000	16.648	35.434	45	574.209	707.282	.155	2401.547
6	899.969	750.000	3.673	160.871	46	574.192	707.282	.155	2401.547
7	897.395	750.000	3.663	160.681	47	574.186	1377.093	.080	4741.268
8	897.389	750.000	3.663	160.881	48	574.199	707.282	.155	2401.547
9	479.197	750.000	1.955	162.402	49	574.186	707.282	.000	.000
10	479.187	750.000	1.955	162.402	50	574.186	875.091	.124	2987.545
11	58.805	750.000	.240	163.979	51	574.164	875.091	.124	2987.545
12	200.000	743.826	.000	.000	52	574.147	875.091	.124	2987.544
13	199.994	660.000	.000	.000	53	574.142	.000	.000	.000
14	199.994	660.000	.000	.000	54	574.155	774.147	.139	2635.869
15	199.994	660.000	.000	.000	55	574.155	875.091	.124	2987.545
16	200.000	731.166	.000	.000	56	574.155	73.396	2.745	36.573
17	200.000	731.166	.000	.000	57	574.135	774.147	.139	2635.868
18	200.000	731.166	.000	.000	58	573.972	750.000	.144	2551.245
19	199.982	690.720	.000	.000	59	573.953	750.000	.144	2551.245
20	.000	.000	.000	.000	60	58.602	750.000	.015	2540.289
21	.000	.000	.000	.000	61	53.714	1940.682	.005	6735.632
22	.000	.000	.000	.000	62	53.700	1940.682	.000	.000
23	.000	.000	.000	.000	63	12.004	1665.000	.000	.000
24	.000	.000	.000	.000	64	1.628	1377.196	.000	.000
25	.000	.000	.000	.000	65	1.443	1377.196	.000	.000
26	575.000	55.000	3.984	-45.499	66	.754	1210.515	.000	.000
27	574.989	55.000	3.984	-45.500	67	.338	.000	.000	.000
28	574.975	139.637	.807	311.603	68	.000	.000	.000	.000
29	574.972	139.637	.807	311.603	69	.000	.000	.000	.000
30	574.972	139.637	.807	311.603	70	.000	750.000	.000	.000
31	574.968	139.637	.807	311.603	71	.000	690.720	.000	.000
32	574.883	397.249	.264	1290.573	72	.000	691.784	.000	.000
33	574.873	397.249	.264	1290.572	73	.000	.000	.000	.000
34	574.873	397.249	.264	1290.572	74	.000	.000	.000	.000
35	574.862	397.249	.264	1290.572	75	.000	.000	.000	.000
36	574.724	715.427	.153	2430.102	76	.000	.000	.000	.000
37	574.706	715.426	.153	2430.098	77	.000	.000	.000	.000
38	574.706	715.426	.153	2430.098	78	.000	.000	.000	.000
39	574.688	715.426	.153	2430.098	79	.000	.000	.000	.000
40	574.405	422.129	.249	1384.855	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:52:43

HYDRAULIC POWER	5.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	30.85	SPC	.3.356	AMW	3.00
HYDRAULIC PUMP	30.29	LUBE PUMP	4.00	SECOND STAGE	32.44	O/F	.488		
TOTAL GEAR BOX	35.29			TOTAL TURBINE	63.29	PT OUT	.306		

TURBINE INFORMATION

FLOW	1.974	PRESSURE	57.34	1.60	EFFICIENCY 1ST	.418	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.363	TEMPERATURE	1931.9	1384.4	EFFICIENCY 2ND	.379	A2	.2335	A4	.6096
PRESSURE RATIO	35.81	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.461	HP	63.29	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1217.45	704.37	1058.67	1058.67	1058.67
PRESSURE IN	573.44	573.93	897.48	348.20	573.12
PRESSURE OUT	573.43	573.93	348.21	61.94	61.78
EFFECTIVE AREA	1.00000	.00000	.00070	.00180	.00901
FLOW	1.175	.000	.647	.647	1.327

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.327	574.99	574.96	55.00	160.55	-45.5	380.7	.091	1.000	1.000	565.48 BTU/MIN
	HOT SIDE	.151	573.46	573.46	1217.45	72.89	4178.7	33.7	.985	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.327	574.95	574.84	160.55	426.98	380.7	1403.0	.449	1.000	1.000	1356.21 BTU/MIN
	HOT SIDE	1.327	574.57	574.18	753.50	451.95	2563.5	1496.0	.509	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.327	574.81	574.62	426.98	753.52	1403.0	2563.6	.952	1.000	1.000	1539.66 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	769.96	724.55	.0	.0	.132	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.327	574.16	573.97	451.95	704.37	1496.0	2391.3	.864	1.000	1.000	1187.79 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	744.05	660.00	.0	.0	.288	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.327	573.58	573.52	704.37	1217.44	2391.3	4178.6	.755	1.000	1.000	2371.10 BTU/MIN
	HOT SIDE	1.974	1.38	.68	1384.35	811.72	.0	.0	.842	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.327	573.43	573.15	1086.77	1058.67	3723.5	3625.8	.036	1.000	1.000	-129.60 BTU/MIN
	HOT SIDE	.647	900.00	899.97	300.00	1058.67	35.4	235.2	.964	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.165	451.951	.232	1496.011
2	.000	.000	.000	.000	42	573.971	704.371	.155	2391.342
3	.000	.000	.000	.000	43	573.948	704.371	.155	2391.342
4	.000	.000	.000	.000	44	573.948	704.371	.155	2391.342
5	900.000	300.000	16.648	35.434	45	573.925	704.371	.155	2391.341
6	899.971	1058.671	2.603	235.227	46	573.583	704.371	.155	2391.334
7	897.489	1058.671	2.596	235.230	47	573.516	1217.440	.088	4178.623
8	897.484	1058.671	2.596	235.230	48	573.925	704.371	.155	2391.341
9	348.215	1058.671	1.016	235.873	49	573.925	704.371	.000	.000
10	348.202	1058.671	1.016	235.873	50	573.516	1217.453	.088	4178.668
11	61.938	1058.671	.182	236.217	51	573.476	1217.453	.088	4178.667
12	200.000	744.051	.000	.000	52	573.444	1217.453	.088	4178.667
13	199.994	660.003	.000	.000	53	573.435	.000	.000	.000
14	199.994	660.003	.000	.000	54	573.462	1086.767	.101	3723.475
15	199.994	660.003	.000	.000	55	573.463	1217.453	.088	4178.667
16	200.000	769.959	.000	.000	56	573.462	72.887	2.785	33.678
17	200.000	769.959	.000	.000	57	573.427	1086.767	.101	3723.474
18	200.000	769.959	.000	.000	58	573.151	1058.671	.104	3625.787
19	199.989	724.548	.000	.000	59	573.117	1058.671	.104	3625.786
20	.000	.000	.000	.000	60	61.780	1058.671	.011	3613.747
21	.000	.000	.000	.000	61	57.350	1931.929	.006	6703.393
22	.000	.000	.000	.000	62	57.335	1931.929	.000	.000
23	.000	.000	.000	.000	63	12.717	1664.999	.000	.000
24	.000	.000	.000	.000	64	1.601	1384.353	.000	.000
25	.000	.000	.000	.000	65	1.383	1384.353	.000	.000
26	575.000	55.000	3.984	-45.499	66	.684	811.722	.000	.000
27	574.986	55.000	3.984	-45.500	67	.306	.000	.000	.000
28	574.965	160.550	.682	380.746	68	.000	.000	.000	.000
29	574.960	160.550	.682	380.746	69	.000	.000	.000	.000
30	574.960	160.550	.682	380.746	70	.000	750.000	.000	.000
31	574.954	160.550	.682	380.746	71	.000	730.911	.000	.000
32	574.835	426.977	.246	1403.027	72	.000	731.939	.000	.000
33	574.821	426.977	.246	1403.027	73	.000	.000	.000	.000
34	574.821	426.977	.246	1403.027	74	.000	.000	.000	.000
35	574.806	426.977	.246	1403.027	75	.000	.000	.000	.000
36	574.621	753.520	.144	2563.594	76	.000	.000	.000	.000
37	574.597	753.501	.144	2563.527	77	.000	.000	.000	.000
38	574.597	753.501	.144	2563.527	78	.000	.000	.000	.000
39	574.572	753.501	.144	2563.526	79	.000	.000	.000	.000
40	574.180	451.951	.232	1496.012	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:52:55

HYDRAULIC POWER	5.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	30.97	SPC	3.611	AMW	3.37
HYDRAULIC PUMP	30.29	LUBE PUMP	4.00	SECOND STAGE	32.31	O/F	.671		
TOTAL GEAR BOX	35.29			TOTAL TURBINE	63.29	PT OUT	.367		

TURBINE INFORMATION

FLOW	2.124	PRESSURE	58.44	1.76	EFFICIENCY 1ST	.436	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1941.6	1376.5	EFFICIENCY 2ND	.403	A2	.2335	A4	.6096
PRESSURE RATIO	33.14	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.483	HP	63.29	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	877.24	705.44	750.00	750.00	750.00
PRESSURE IN	573.96	574.02	896.91	479.39	573.73
PRESSURE OUT	573.95	574.02	479.40	64.01	63.78
EFFECTIVE AREA	1.00000	.46535	.00078	.00145	.00726
FLOW	1.108	.946	.853	.853	1.271

HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.271	574.99	574.97	55.00	141.36	-45.5	317.3	.105	1.000	1.000	461.16 BTU/MIN
	HOT SIDE	.164	573.97	573.96	877.24	76.35	2995.0	53.8	.974	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.271	574.96	574.86	141.36	415.54	317.3	1360.0	.447	1.000	1.000	1325.52 BTU/MIN
	HOT SIDE	1.271	574.62	574.26	754.73	442.40	2567.8	1460.6	.509	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.271	574.83	574.66	415.54	754.73	1360.0	2567.8	.955	1.000	1.000	1535.34 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	770.56	725.35	.0	.0	.127	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.271	574.25	574.07	442.40	705.44	1460.6	2395.1	.872	1.000	1.000	1187.95 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	743.99	660.00	.0	.0	.278	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.326	574.01	574.00	705.44	1376.30	2395.1	4738.5	****	1.000	1.000	762.86 BTU/MIN
	HOT SIDE	2.124	1.56	.82	1376.48	1205.88	.0	.0	.254	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.271	573.94	573.75	774.17	750.00	2635.9	2551.2	.051	1.000	1.000	-107.66 BTU/MIN
	HOT SIDE	.853	900.00	899.96	300.00	750.00	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.250	442.398	.237	1460.573
2	.000	.000	.000	.000	42	574.072	705.443	.155	2395.100
3	.000	.000	.000	.000	43	574.051	705.443	.155	2395.100
4	.000	.000	.000	.000	44	574.051	705.443	.155	2395.100
5	900.000	300.000	16.648	35.434	45	574.030	705.443	.155	2395.099
6	899.965	750.000	3.673	160.871	46	574.009	705.443	.155	2395.099
7	896.913	750.000	3.661	160.882	47	574.002	1376.301	.080	4738.473
8	896.906	750.000	3.661	160.882	48	574.018	705.443	.155	2395.099
9	479.397	750.000	1.956	162.402	49	574.002	705.443	.000	.000
10	479.385	750.000	1.956	162.402	50	574.002	877.245	.124	2995.029
11	68.005	750.000	.261	163.955	51	573.976	877.245	.124	2995.028
12	200.000	743.986	.000	.000	52	573.956	877.245	.124	2995.028
13	199.994	660.000	.000	.000	53	573.950	.000	.000	.000
14	199.994	660.000	.000	.000	54	573.964	774.166	.139	2635.932
15	199.994	660.000	.000	.000	55	573.965	877.245	.124	2995.028
16	200.000	770.562	.000	.000	56	573.964	76.352	2.500	53.794
17	200.000	770.562	.000	.000	57	573.941	774.166	.139	2635.931
18	200.000	770.562	.000	.000	58	573.754	750.000	.144	2551.240
19	199.990	725.352	.000	.000	59	573.731	750.000	.144	2551.239
20	.000	.000	.000	.000	60	63.783	750.000	.016	2540.399
21	.000	.000	.000	.000	61	58.460	1941.568	.006	6738.997
22	.000	.000	.000	.000	62	58.445	1941.568	.000	.000
23	.000	.000	.000	.000	63	13.037	1665.000	.000	.000
24	.000	.000	.000	.000	64	1.763	1376.478	.000	.000
25	.000	.000	.000	.000	65	1.561	1376.478	.000	.000
26	575.000	55.000	3.984	-45.499	66	.819	1205.862	.000	.000
27	574.987	55.000	3.984	-45.500	67	.367	.000	.000	.000
28	574.971	141.363	.795	317.284	68	.000	.000	.000	.000
29	574.966	141.363	.795	317.285	69	.000	.000	.000	.000
30	574.966	141.363	.795	317.285	70	.000	750.000	.000	.000
31	574.962	141.363	.795	317.285	71	.000	731.514	.000	.000
32	574.858	415.545	.253	1360.035	72	.000	732.542	.000	.000
33	574.845	415.545	.253	1360.035	73	.000	.000	.000	.000
34	574.845	415.545	.253	1360.035	74	.000	.000	.000	.000
35	574.833	415.545	.253	1360.035	75	.000	.000	.000	.000
36	574.663	754.733	.144	2567.846	76	.000	.000	.000	.000
37	574.641	754.733	.144	2567.845	77	.000	.000	.000	.000
38	574.641	754.733	.144	2567.845	78	.000	.000	.000	.000
39	574.618	754.733	.144	2567.844	79	.000	.000	.000	.000
40	574.263	442.398	.237	1460.573	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:53:07

HYDRAULIC POWER	10.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	33.43	SPC	3.176	AMW	3.03
HYDRAULIC PUMP	30.57	LUBE PUMP	4.00	SECOND STAGE	35.14	O/F	.505		
TOTAL GEAR BOX	40.57			TOTAL TURBINE	68.57	PT OUT	.330		

TURBINE INFORMATION

FLOW	2.147	PRESSURE	62.06	1.72	EFFICIENCY 1ST	.420	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.363	TEMPERATURE	1933.6	1382.7	EFFICIENCY 2ND	.381	A2	.2335	A4	.6096
PRESSURE RATIO	36.00	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.463	HP	68.57	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1217.83	702.47	1030.93	1030.93	1030.93
PRESSURE IN	573.17	573.72	896.97	359.82	572.80
PRESSURE OUT	573.16	573.72	359.83	67.17	66.99
EFFECTIVE AREA	.99999	.00000	.00077	.00192	.00958
FLOW	1.227	.000	.720	.720	1.427

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.427	574.98	574.96	55.00	183.77	-45.5	459.9	.111	1.000	1.000	721.23 BTU/MIN
	HOT SIDE	.201	573.18	573.18	1217.83	87.83	4180.0	117.1	.972	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.427	574.94	574.79	183.77	443.66	459.9	1465.3	.452	1.000	1.000	1434.83 BTU/MIN
	HOT SIDE	1.427	574.49	574.02	759.12	467.20	2583.2	1552.1	.507	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.427	574.76	574.54	443.66	759.16	1465.3	2583.4	.947	1.000	1.000	1595.70 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	776.73	729.86	.0	.0	.141	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.427	574.00	573.77	467.20	702.47	1552.1	2384.7	.850	1.000	1.000	1188.16 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	744.15	659.99	.0	.0	.304	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.427	573.33	573.25	702.47	1217.84	2384.7	4180.0	.758	1.000	1.000	2562.25 BTU/MIN
	HOT SIDE	2.147	1.49	.74	1382.69	813.89	.0	.0	.836	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.427	573.14	572.84	1059.01	1030.93	3627.0	3529.3	.037	1.000	1.000	-139.31 BTU/MIN
	HOT SIDE	.720	900.00	899.97	300.00	1030.93	35.4	228.5	.963	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.001	467.196	.225	1552.137
2	.000	.000	.000	.000	42	573.775	702.472	.156	2384.681
3	.000	.000	.000	.000	43	573.749	702.472	.156	2384.681
4	.000	.000	.000	.000	44	573.749	702.472	.156	2384.681
5	900.000	300.000	16.648	35.434	45	573.722	702.472	.156	2384.680
6	899.966	1030.931	2.681	228.526	46	573.327	702.472	.156	2384.672
7	896.974	1030.931	2.672	228.531	47	573.251	1217.845	.088	4180.041
8	896.967	1030.931	2.672	228.531	48	573.722	702.472	.156	2384.680
9	359.834	1030.931	1.081	229.254	49	573.722	702.472	.000	.000
10	359.819	1030.931	1.081	229.254	50	573.251	1217.828	.088	4179.982
11	67.168	1030.931	.203	229.659	51	573.205	1217.828	.088	4179.980
12	200.000	744.151	.000	.000	52	573.170	1217.828	.088	4179.980
13	199.994	659.990	.000	.000	53	573.160	.000	.000	.000
14	199.994	659.990	.000	.000	54	573.180	1059.006	.104	3626.952
15	199.994	659.990	.000	.000	55	573.182	1217.828	.088	4179.980
16	200.000	776.734	.000	.000	56	573.180	87.834	1.758	117.117
17	200.000	776.734	.000	.000	57	573.140	1059.006	.104	3626.951
18	200.000	776.734	.000	.000	58	572.839	1030.931	.107	3529.333
19	199.990	729.857	.000	.000	59	572.800	1030.931	.107	3529.332
20	.000	.000	.000	.000	60	66.988	1030.931	.013	3517.488
21	.000	.000	.000	.000	61	62.077	1933.622	.006	6709.881
22	.000	.000	.000	.000	62	62.061	1933.622	.000	.000
23	.000	.000	.000	.000	63	13.746	1664.997	.000	.000
24	.000	.000	.000	.000	64	1.724	1382.691	.000	.000
25	.000	.000	.000	.000	65	1.488	1382.691	.000	.000
26	575.000	55.000	3.984	-45.499	66	.738	813.894	.000	.000
27	574.984	55.000	3.984	-45.500	67	.330	.000	.000	.000
28	574.955	-183.769	.586	459.869	68	.000	.000	.000	.000
29	574.948	183.769	.586	459.869	69	.000	.000	.000	.000
30	574.948	183.769	.586	459.869	70	.000	750.000	.000	.000
31	574.941	183.769	.586	459.869	71	.000	737.914	.000	.000
32	574.795	443.656	.237	1465.253	72	.000	738.936	.000	.000
33	574.777	443.656	.237	1465.253	73	.000	.000	.000	.000
34	574.777	443.656	.237	1465.253	74	.000	.000	.000	.000
35	574.760	443.656	.237	1465.253	75	.000	.000	.000	.000
36	574.544	759.160	.142	2583.357	76	.000	.000	.000	.000
37	574.516	759.116	.142	2583.202	77	.000	.000	.000	.000
38	574.516	759.116	.142	2583.202	78	.000	.000	.000	.000
39	574.487	759.116	.142	2583.201	79	.000	.000	.000	.000
40	574.019	467.196	.225	1552.137	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:53:16

HYDRAULIC POWER	10.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	33.56	SPC	3.393	AMW	3.37
HYDRAULIC PUMP	30.57	LUBE PUMP	4.00	SECOND STAGE	35.02	O/F	.671		
TOTAL GEAR BOX	40.57			TOTAL TURBINE	68.57	PT OUT	.390		

TURBINE INFORMATION

FLOW	2.295	PRESSURE	63.15	1.88	EFFICIENCY 1ST	.437	A1	.1517	A3 .5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1942.4	1375.6	EFFICIENCY 2ND	.403	A2	.2335	A4 .6096
PRESSURE RATIO	33.53	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.483	HP	68.57	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	909.62	703.49	750.00	750.00	750.00
PRESSURE IN	573.73	573.82	896.39	479.52	573.47
PRESSURE OUT	573.73	573.82	479.54	69.16	68.92
EFFECTIVE AREA	1.00000	.32925	.00084	.00157	.00785
FLOW	1.144	.951	.922	.922	1.373

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.373	574.98	574.96	55.00	167.93	-45.5	405.6	.132	1.000	1.000	619.38 BTU/MIN
	HOT SIDE	.229	573.73	573.73	909.62	96.37	3107.6	156.6	.952	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.373	574.95	574.82	167.93	434.50	405.6	1431.2	.450	1.000	1.000	1408.12 BTU/MIN
	HOT SIDE	1.373	574.53	574.11	760.31	459.28	2587.4	1523.0	.508	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.373	574.79	574.59	434.50	760.31	1431.2	2587.4	.951	1.000	1.000	1587.36 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	777.20	730.63	.0	.0	.136	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.373	574.09	573.88	459.28	703.49	1523.0	2388.3	.857	1.000	1.000	1187.95 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	744.10	660.00	.0	.0	.295	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.422	573.80	573.79	703.49	1374.52	2388.3	4732.2	.998	1.000	1.000	988.56 BTU/MIN
	HOT SIDE	2.295	1.66	.87	1375.55	1170.93	.0	.0	.304	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.373	573.71	573.49	774.18	750.00	2636.0	2551.2	.051	1.000	1.000	-116.37 BTU/MIN
	HOT SIDE	.922	900.00	899.96	300.00	750.00	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.091	459.281	.229	1523.023
2	.000	.000	.000	.000	42	573.882	703.494	.156	2388.266
3	.000	.000	.000	.000	43	573.858	703.494	.156	2388.265
4	.000	.000	.000	.000	44	573.858	703.494	.156	2388.265
5	900.000	300.000	16.648	35.434	45	573.833	703.494	.156	2388.265
6	899.960	749.999	3.673	160.871	46	573.799	703.494	.156	2388.264
7	896.394	749.999	3.658	160.884	47	573.788	1374.519	.080	4732.185
8	896.387	749.999	3.658	160.884	48	573.822	703.494	.156	2388.264
9	479.535	749.999	1.956	162.401	49	573.788	703.494	.000	.000
10	479.521	749.999	1.956	162.401	50	573.788	909.623	.120	3107.596
11	69.160	749.999	.282	163.931	51	573.757	909.623	.120	3107.595
12	200.000	744.103	.000	.000	52	573.735	909.623	.120	3107.595
13	199.994	660.000	.000	.000	53	573.728	.000	.000	.000
14	199.994	660.000	.000	.000	54	573.733	774.184	.139	2635.990
15	199.994	660.000	.000	.000	55	573.735	909.623	.120	3107.595
16	200.000	777.199	.000	.000	56	573.733	96.366	1.437	156.601
17	200.000	777.199	.000	.000	57	573.705	774.184	.139	2635.989
18	200.000	777.199	.000	.000	58	573.494	750.000	.144	2551.234
19	199.990	730.628	.000	.000	59	573.468	750.000	.144	2551.234
20	.000	.000	.000	.000	60	68.920	750.000	.018	2540.508
21	.000	.000	.000	.000	61	63.164	1942.391	.006	6742.131
22	.000	.000	.000	.000	62	63.148	1942.391	.000	.000
23	.000	.000	.000	.000	63	14.059	1665.000	.000	.000
24	.000	.000	.000	.000	64	1.883	1375.551	.000	.000
25	.000	.000	.000	.000	65	1.662	1375.551	.000	.000
26	575.000	55.000	3.984	-45.499	66	.872	1170.926	.000	.000
27	574.985	55.000	3.984	-45.500	67	.390	.000	.000	.000
28	574.961	167.932	.648	405.629	68	.000	.000	.000	.000
29	574.955	167.932	.648	405.629	69	.000	.000	.000	.000
30	574.955	167.932	.648	405.629	70	.000	750.000	.000	.000
31	574.949	167.932	.648	405.630	71	.000	738.377	.000	.000
32	574.819	434.503	.242	1431.231	72	.000	739.399	.000	.000
33	574.803	434.503	.242	1431.231	73	.000	.000	.000	.000
34	574.803	434.503	.242	1431.231	74	.000	.000	.000	.000
35	574.787	434.503	.242	1431.231	75	.000	.000	.000	.000
36	574.588	760.309	.142	2587.385	76	.000	.000	.000	.000
37	574.561	760.308	.142	2587.383	77	.000	.000	.000	.000
38	574.561	760.308	.142	2587.383	78	.000	.000	.000	.000
39	574.535	760.308	.142	2587.382	79	.000	.000	.000	.000
40	574.107	459.281	.229	1523.023	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:53:44

HYDRAULIC POWER	90.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	74.86	SPC	2.307	AMW	3.19
HYDRAULIC PUMP	35.14	LUBE PUMP	4.00	SECOND STAGE	78.28	O/F	.582		
TOTAL GEAR BOX	125.14			TOTAL TURBINE	153.14	PT OUT	.688		

TURBINE INFORMATION

FLOW	4.811	PRESSURE	136.13	3.56	EFFICIENCY 1ST	.434	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.360	TEMPERATURE	1945.7	1371.5	EFFICIENCY 2ND	.390	A2	.2335	A4	.6096
PRESSURE RATIO	38.27	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.477	HP	153.14	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1181.46	602.05	908.82	908.82	908.83
PRESSURE IN	567.26	569.46	883.91	409.81	565.78
PRESSURE OUT	566.54	569.46	409.89	148.53	148.05
EFFECTIVE AREA	.22052	.00000	.00180	.00388	.01940
FLOW	2.260	.000	1.769	1.769	3.042

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	3.042	574.93	574.76	55.00	256.36	-45.5	733.0	.179	1.000	1.000	2368.09 BTU/MIN
	HOT SIDE	.782	567.04	567.01	1181.46	226.91	4052.5	617.7	.847	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	3.042	574.66	573.95	256.36	460.03	733.0	1525.8	.444	1.000	1.000	2411.61 BTU/MIN
	HOT SIDE	3.042	572.64	570.69	715.46	491.89	2430.2	1642.2	.487	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	3.042	573.79	572.88	460.03	715.48	1525.8	2430.2	.795	1.000	1.000	2751.27 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	781.46	699.51	.0	.0	.255	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	3.042	570.60	569.66	491.89	602.05	1642.2	2032.7	.607	1.000	1.000	1187.93 BTU/MIN
	HOT SIDE	28.500	200.00	199.97	673.31	584.14	.0	.0	.492	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	3.042	567.89	567.59	602.05	1181.47	2032.7	4052.6	.753	1.000	1.000	6144.37 BTU/MIN
	HOT SIDE	4.811	3.02	1.54	1371.51	762.64	.0	.0	.791	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	3.042	566.85	565.94	936.20	908.83	3199.8	3104.7	.043	1.000	1.000	-289.54 BTU/MIN
	HOT SIDE	1.769	900.00	899.87	300.00	908.82	35.4	199.0	.957	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	570.603	491.894	.212	1642.178
2	.000	.000	.000	.000	42	569.664	602.054	.179	2032.701
3	.000	.000	.000	.000	43	569.559	602.054	.179	2032.699
4	.000	.000	.000	.000	44	569.559	602.054	.179	2032.699
5	900.000	300.000	16.648	35.434	45	569.455	602.054	.179	2032.697
6	899.865	908.817	3.021	199.032	46	567.890	602.054	.178	2032.669
7	883.947	908.817	2.968	199.067	47	567.585	1181.465	.090	4052.579
8	883.913	908.817	2.968	199.067	48	569.455	602.054	.179	2032.697
9	409.886	908.817	1.384	200.070	49	569.455	602.054	.000	.000
10	409.813	908.817	1.384	200.070	50	567.585	1181.461	.090	4052.563
11	148.531	908.817	.503	200.650	51	567.378	1181.461	.090	4052.558
12	200.000	673.312	.000	.000	52	567.263	1181.461	.090	4052.555
13	199.967	584.136	.000	.000	53	566.540	.000	.000	.000
14	199.967	584.136	.000	.000	54	567.008	936.200	.116	3199.844
15	199.967	584.136	.000	.000	55	567.036	1181.461	.090	4052.550
16	200.000	781.465	.000	.000	56	567.008	226.913	.460	617.673
17	200.000	781.465	.000	.000	57	566.847	936.200	.116	3199.840
18	200.000	781.465	.000	.000	58	565.942	908.829	.119	3104.656
19	199.988	699.513	.000	.000	59	565.785	908.829	.119	3104.652
20	.000	.000	.000	.000	60	148.055	908.829	.032	3095.116
21	.000	.000	.000	.000	61	136.166	1945.689	.013	6755.879
22	.000	.000	.000	.000	62	136.131	1945.689	.000	.000
23	.000	.000	.000	.000	63	29.589	1665.000	.000	.000
24	.000	.000	.000	.000	64	3.557	1371.509	.000	.000
25	.000	.000	.000	.000	65	3.015	1371.509	.000	.000
26	575.000	55.000	3.984	-45.499	66	1.537	762.638	.000	.000
27	574.925	55.000	3.984	-45.500	67	.688	.000	.000	.000
28	574.755	256.359	.410	732.990	68	.000	.000	.000	.000
29	574.710	256.359	.410	732.991	69	.000	.000	.000	.000
30	574.710	256.359	.410	732.991	70	.000	750.000	.000	.000
31	574.665	256.359	.410	732.992	71	.000	742.788	.000	.000
32	573.954	460.032	.228	1525.789	72	.000	743.805	.000	.000
33	573.873	460.032	.228	1525.788	73	.000	.000	.000	.000
34	573.873	460.032	.228	1525.788	74	.000	.000	.000	.000
35	573.791	460.032	.228	1525.787	75	.000	.000	.000	.000
36	572.883	715.478	.153	2430.244	76	.000	.000	.000	.000
37	572.761	715.464	.152	2430.192	77	.000	.000	.000	.000
38	572.761	715.464	.152	2430.192	78	.000	.000	.000	.000
39	572.639	715.464	.152	2430.189	79	.000	.000	.000	.000
40	570.691	491.894	.212	1642.179	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:54:01

HYDRAULIC POWER	90.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	74.99	SPC	2.393	AMW	3.38
HYDRAULIC PUMP	35.14	LUBE PUMP	4.00	SECOND STAGE	78.15	O/F	.676		
TOTAL GEAR BOX	125.14			TOTAL TURBINE	153.15	PT OUT	.767		

TURBINE INFORMATION

FLOW	4.990	PRESSURE	137.43	3.75	EFFICIENCY 1ST	.443	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1950.6	1367.3	EFFICIENCY 2ND	.403	A2	.2335	A4	.6096
PRESSURE RATIO	36.65	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.488	HP	153.15	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1015.71	604.36	749.85	749.85	749.88
PRESSURE IN	568.85	569.67	882.80	478.04	567.48
PRESSURE OUT	568.47	569.67	478.11	150.60	150.07
EFFECTIVE AREA	.25412	.09933	.00186	.00344	.01719
FLOW	2.039	1.276	2.013	2.013	2.977

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	2.977	574.93	574.77	55.00	254.39	-45.5	725.1	.208	1.000	1.000	2294.10 BTU/MIN
	HOT SIDE	.938	568.52	568.47	1015.71	249.24	3476.3	704.9	.798	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	2.977	574.68	574.00	254.39	460.13	725.1	1526.1	.444	1.000	1.000	2384.41 BTU/MIN
	HOT SIDE	2.977	572.74	570.87	717.75	491.78	2438.2	1641.8	.488	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	2.977	573.84	572.97	460.13	717.83	1526.1	2438.5	.802	1.000	1.000	2715.90 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	781.64	700.80	.0	.0	.251	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	2.977	570.78	569.89	491.78	604.36	1641.8	2040.8	.615	1.000	1.000	1187.84 BTU/MIN
	HOT SIDE	28.500	200.00	199.97	674.90	585.85	.0	.0	.486	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.701	569.20	569.09	604.36	1324.22	2040.8	4554.8	.944	1.000	1.000	4276.84 BTU/MIN
	HOT SIDE	4.990	3.23	1.71	1367.33	959.82	.0	.0	.534	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	2.977	568.34	567.60	774.24	749.88	2636.1	2550.7	.051	1.000	1.000	-254.15 BTU/MIN
	HOT SIDE	2.013	900.00	899.85	300.00	749.85	35.4	160.8	.949	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	570.783	491.780	.213	1641.767
2	.000	.000	.000	.000	42	569.887	604.362	.178	2040.793
3	.000	.000	.000	.000	43	569.787	604.362	.178	2040.792
4	.000	.000	.000	.000	44	569.787	604.362	.178	2040.792
5	900.000	300.000	16.648	35.434	45	569.687	604.362	.178	2040.790
6	899.851	749.854	3.674	160.837	46	569.196	604.362	.178	2040.781
7	882.836	749.854	3.604	160.899	47	569.090	1324.225	.082	4554.832
8	882.799	749.854	3.604	160.899	48	569.669	604.362	.178	2040.789
9	478.110	749.854	1.951	162.372	49	569.090	604.362	.000	.000
10	478.043	749.854	1.951	162.373	50	569.091	1015.713	.108	3476.337
11	150.598	749.854	.614	163.599	51	568.925	1015.713	.108	3476.333
12	200.000	674.896	.000	.000	52	568.848	1015.713	.108	3476.331
13	199.969	585.853	.000	.000	53	568.468	.000	.000	.000
14	199.969	585.853	.000	.000	54	568.468	774.241	.137	2636.076
15	199.969	585.853	.000	.000	55	568.515	1015.713	.108	3476.324
16	200.000	781.641	.000	.000	56	568.468	249.236	.418	704.886
17	200.000	781.641	.000	.000	57	568.338	774.241	.137	2636.073
18	200.000	781.641	.000	.000	58	567.604	749.883	.143	2550.698
19	199.989	700.803	.000	.000	59	567.479	749.883	.143	2550.696
20	.000	.000	.000	.000	60	150.069	749.883	.038	2541.833
21	.000	.000	.000	.000	61	137.467	1950.641	.013	6773.740
22	.000	.000	.000	.000	62	137.431	1950.641	.000	.000
23	.000	.000	.000	.000	63	29.970	1664.998	.000	.000
24	.000	.000	.000	.000	64	3.750	1367.331	.000	.000
25	.000	.000	.000	.000	65	3.230	1367.331	.000	.000
26	575.000	55.000	3.984	-45.499	66	1.713	959.822	.000	.000
27	574.928	55.000	3.984	-45.500	67	.767	.000	.000	.000
28	574.767	254.390	.413	725.148	68	.000	.000	.000	.000
29	574.724	254.390	.413	725.148	69	.000	.000	.000	.000
30	574.724	254.390	.413	725.148	70	.000	750.000	.000	.000
31	574.680	254.390	.413	725.149	71	.000	742.972	.000	.000
32	574.001	460.125	.228	1526.134	72	.000	743.989	.000	.000
33	573.923	460.125	.228	1526.133	73	.000	.000	.000	.000
34	573.923	460.125	.228	1526.133	74	.000	.000	.000	.000
35	573.844	460.125	.228	1526.132	75	.000	.000	.000	.000
36	572.972	717.827	.152	2438.476	76	.000	.000	.000	.000
37	572.855	717.753	.152	2438.215	77	.000	.000	.000	.000
38	572.855	717.753	.152	2438.215	78	.000	.000	.000	.000
39	572.737	717.753	.152	2438.213	79	.000	.000	.000	.000
40	570.867	491.780	.213	1641.768	80	.000	.000	.000	1.000

Computer Case 19

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:54:23

HYDRAULIC POWER	180.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	121.64	SPC	2.128	AMW	3.28
HYDRAULIC PUMP	40.29	LUBE PUMP	4.00	SECOND STAGE	126.64	O/F	.628		
TOTAL GEAR BOX	220.29			TOTAL TURBINE	248.28	PT OUT	1.087		

TURBINE INFORMATION

FLOW	7.812	PRESSURE	218.38	5.54	EFFICIENCY 1ST	.442	A1	.1517	A3 .5538
SPECIFIC HEAT RATIO	1.359	TEMPERATURE	1953.2	1365.0	EFFICIENCY 2ND	.396	A2	.2335	A4 .6096
PRESSURE RATIO	39.43	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.485	HP	248.28	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1160.60	563.28	835.98	835.98	836.08
PRESSURE IN	555.89	561.11	854.64	431.99	551.49
PRESSURE OUT	554.04	561.11	432.18	239.35	238.50
EFFECTIVE AREA	.18293	.00000	.00304	.00602	.03011
FLOW	2.996	.000	3.013	3.013	4.799

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	4.799	574.81	574.34	55.00	301.66	-45.5	914.8	.223	1.000	1.000	4608.13 BTU/MIN
	HOT SIDE	1.802	554.28	554.04	1160.60	366.69	3979.7	1172.6	.718	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	4.799	574.07	572.28	301.66	459.84	914.8	1525.1	.436	1.000	1.000	2928.28 BTU/MIN
	HOT SIDE	4.799	569.20	564.67	664.79	493.81	2252.5	1649.1	.471	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	4.799	571.87	569.76	459.84	664.68	1525.1	2252.2	.634	1.000	1.000	3488.93 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	783.10	678.11	.0	.0	.325	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	4.799	564.45	561.61	493.81	563.28	1649.0	1896.7	.447	1.000	1.000	1188.25 BTU/MIN
	HOT SIDE	28.500	200.00	199.92	649.26	558.47	.0	.0	.584	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	4.799	557.35	556.61	563.28	1160.57	1896.6	3979.7	.745	1.000	1.000	9995.64 BTU/MIN
	HOT SIDE	7.812	4.65	2.43	1364.99	755.03	.0	.0	.761	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	4.799	553.66	551.87	862.44	836.08	2943.1	2851.4	.047	1.000	1.000	-440.01 BTU/MIN
	HOT SIDE	3.013	900.00	899.67	300.00	835.98	35.4	181.4	.953	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	564.448	493.809	.209	1649.048
2	.000	.000	.000	.000	42	561.606	563.278	.185	1896.677
3	.000	.000	.000	.000	43	561.356	563.278	.185	1896.673
4	.000	.000	.000	.000	44	561.356	563.278	.185	1896.673
5	900.000	300.000	16.648	35.434	45	561.105	563.278	.185	1896.669
6	899.669	835.975	3.223	181.438	46	557.349	563.278	.184	1896.604
7	854.739	835.975	3.064	181.553	47	556.607	1160.573	.090	3979.679
8	854.644	835.975	3.063	181.553	48	561.105	563.278	.185	1896.669
9	432.181	835.975	1.556	182.644	49	561.105	563.278	.000	.000
10	431.993	835.975	1.556	182.644	50	556.605	1160.597	.090	3979.761
11	239.346	835.975	.864	183.157	51	556.092	1160.597	.090	3979.749
12	200.000	649.264	.000	.000	52	555.892	1160.597	.090	3979.744
13	199.925	558.472	.000	.000	53	554.040	.000	.000	.000
14	199.925	558.472	.000	.000	54	554.041	862.440	.121	2943.106
15	199.925	558.472	.000	.000	55	554.281	1160.597	.090	3979.705
16	200.000	783.096	.000	.000	56	554.041	366.693	.276	1172.631
17	200.000	783.096	.000	.000	57	553.659	862.440	.121	2943.097
18	200.000	783.096	.000	.000	58	551.868	836.077	.124	2851.399
19	199.987	678.106	.000	.000	59	551.493	836.077	.124	2851.391
20	.000	.000	.000	.000	60	238.503	836.077	.054	2844.364
21	.000	.000	.000	.000	61	218.436	1953.178	.021	6786.131
22	.000	.000	.000	.000	62	218.380	1953.178	.000	.000
23	.000	.000	.000	.000	63	46.880	1665.002	.000	.000
24	.000	.000	.000	.000	64	5.539	1364.986	.000	.000
25	.000	.000	.000	.000	65	4.651	1364.986	.000	.000
26	575.000	55.000	3.984	-45.499	66	2.430	755.030	.000	.000
27	574.814	55.000	3.984	-45.502	67	1.087	.000	.000	.000
28	574.339	301.661	.347	914.825	68	.000	.000	.000	.000
29	574.206	301.661	.347	914.825	69	.000	.000	.000	.000
30	574.206	301.661	.347	914.825	70	.000	750.000	.000	.000
31	574.072	301.661	.347	914.826	71	.000	744.470	.000	.000
32	572.281	459.844	.228	1525.075	72	.000	745.486	.000	.000
33	572.078	459.844	.228	1525.073	73	.000	.000	.000	.000
34	572.078	459.844	.228	1525.073	74	.000	.000	.000	.000
35	571.874	459.844	.228	1525.070	75	.000	.000	.000	.000
36	569.763	664.677	.164	2252.157	76	.000	.000	.000	.000
37	569.478	664.791	.164	2252.550	77	.000	.000	.000	.000
38	569.478	664.791	.164	2252.550	78	.000	.000	.000	.000
39	569.195	664.791	.164	2252.544	79	.000	.000	.000	.000
40	564.669	493.809	.209	1649.052	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:54:55

HYDRAULIC POWER	180.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	121.75	SPC	2.170	AMW	3.39
HYDRAULIC PUMP	40.29	LUBE PUMP	4.00	SECOND STAGE	126.54	O/F	.679		
TOTAL GEAR BOX	220.29			TOTAL TURBINE	248.29	PT OUT	1.158		

TURBINE INFORMATION

FLOW	7.966	PRESSURE	219.49	5.70	EFFICIENCY 1ST	.447	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1955.9	1362.7	EFFICIENCY 2ND	.403	A2	.2335	A4	.6096
PRESSURE RATIO	38.48	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.491	HP	248.29	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1071.02	564.21	749.86	749.86	750.00
PRESSURE IN	558.48	561.41	853.37	468.87	554.03
PRESSURE OUT	556.26	561.41	469.05	240.60	239.75
EFFECTIVE AREA	.14455	.04884	.00309	.00561	.02806
FLOW	2.707	1.293	3.223	3.223	4.743

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	4.743	574.82	574.36	55.00	300.66	-45.5	910.8	.242	1.000	1.000	4535.78 BTU/MIN
	HOT SIDE	2.036	556.55	556.26	1071.02	380.33	3668.3	1225.5	.680	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	4.743	574.10	572.35	300.66	460.00	910.8	1525.6	.436	1.000	1.000	2916.27 BTU/MIN
	HOT SIDE	4.743	569.33	564.90	666.23	493.93	2257.6	1649.5	.471	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	4.743	571.95	569.88	460.00	666.23	1525.6	2257.6	.638	1.000	1.000	3471.78 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	783.14	678.69	.0	.0	.323	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	4.743	564.68	561.92	493.93	564.21	1649.5	1900.0	.451	1.000	1.000	1187.94 BTU/MIN
	HOT SIDE	28.500	200.00	199.93	649.84	559.10	.0	.0	.582	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	3.450	559.49	559.08	564.21	1260.96	1899.9	4331.6	.873	1.000	1.000	8389.62 BTU/MIN
	HOT SIDE	7.966	4.84	2.59	1362.69	861.31	.0	.0	.628	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	4.743	555.92	554.35	774.48	750.00	2636.6	2550.8	.052	1.000	1.000	-406.94 BTU/MIN
	HOT SIDE	3.223	900.00	899.65	300.00	749.86	35.4	160.8	.948	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	564.681	493.933	.209	1649.503
2	.000	.000	.000	.000	42	561.917	564.213	.185	1899.961
3	.000	.000	.000	.000	43	561.673	564.213	.185	1899.957
4	.000	.000	.000	.000	44	561.673	564.213	.185	1899.957
5	900.000	300.000	16.648	35.434	45	561.428	564.213	.185	1899.953
6	899.651	749.860	3.673	160.839	46	559.485	564.213	.184	1899.919
7	853.469	749.860	3.484	161.005	47	559.081	1260.957	.084	4331.631
8	853.373	749.860	3.484	161.005	48	561.410	564.213	.185	1899.953
9	469.046	749.860	1.914	162.406	49	559.081	564.213	.000	.000
10	468.871	749.860	1.913	162.406	50	559.081	1071.022	.100	3668.397
11	240.600	749.860	.981	163.253	51	558.629	1071.022	.100	3668.386
12	200.000	649.835	.000	.000	52	558.482	1071.022	.100	3668.383
13	199.926	559.096	.000	.000	53	556.259	.000	.000	.000
14	199.926	559.096	.000	.000	54	556.259	774.478	.134	2636.640
15	199.926	559.096	.000	.000	55	556.545	1071.022	.100	3668.337
16	200.000	783.137	.000	.000	56	556.259	380.332	.267	1225.511
17	200.000	783.137	.000	.000	57	555.922	774.478	.134	2636.632
18	200.000	783.137	.000	.000	58	554.350	750.002	.140	2550.836
19	199.987	678.692	.000	.000	59	554.025	750.002	.140	2550.829
20	.000	.000	.000	.000	60	239.750	750.002	.061	2544.166
21	.000	.000	.000	.000	61	219.543	1955.865	.021	6795.372
22	.000	.000	.000	.000	62	219.487	1955.865	.000	.000
23	.000	.000	.000	.000	63	47.208	1665.000	.000	.000
24	.000	.000	.000	.000	64	5.704	1362.692	.000	.000
25	.000	.000	.000	.000	65	4.837	1362.692	.000	.000
26	575.000	55.000	3.984	-45.499	66	2.587	861.306	.000	.000
27	574.818	55.000	3.984	-45.502	67	1.158	.000	.000	.000
28	574.356	300.657	.348	910.793	68	.000	.000	.000	.000
29	574.226	300.657	.348	910.794	69	.000	.000	.000	.000
30	574.226	300.657	.348	910.794	70	.000	750.000	.000	.000
31	574.095	300.657	.348	910.795	71	.000	744.515	.000	.000
32	572.345	459.998	.228	1525.642	72	.000	745.531	.000	.000
33	572.146	459.998	.228	1525.639	73	.000	.000	.000	.000
34	572.146	459.998	.228	1525.639	74	.000	.000	.000	.000
35	571.947	459.998	.227	1525.637	75	.000	.000	.000	.000
36	569.881	666.232	.163	2257.605	76	.000	.000	.000	.000
37	569.604	666.230	.163	2257.594	77	.000	.000	.000	.000
38	569.604	666.230	.163	2257.594	78	.000	.000	.000	.000
39	569.327	666.230	.163	2257.588	79	.000	.000	.000	.000
40	564.897	493.933	.209	1649.507	80	.000	.000	.000	1.000

HX = 8.00000 PHO = -12.4343 PHO = .529255

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:55:13

HYDRAULIC POWER	270.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	168.55	SPC	2.058	AMW	3.35
HYDRAULIC PUMP	45.43	LUBE PUMP	4.00	SECOND STAGE	174.88	O/F	.661		
TOTAL GEAR BOX	315.43			TOTAL TURBINE	343.43	PT OUT	1.487		

TURBINE INFORMATION

FLOW	10.821	PRESSURE	299.97	7.48	EFFICIENCY 1ST	.448	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1958.4	1360.6	EFFICIENCY 2ND	.400	A2	.2335	A4	.6096
PRESSURE RATIO	40.12	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.491	HP	343.43	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1145.42	543.66	784.11	784.11	784.41
PRESSURE IN	541.50	550.91	807.72	464.71	530.78
PRESSURE OUT	534.69	550.91	465.04	329.28	328.09
EFFECTIVE AREA	.10288	.00000	.00447	.00836	.04182
FLOW	3.210	.000	4.306	4.306	6.515

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	6.515	574.66	573.72	55.00	334.51	-45.5	1046.2	.256	1.000	1.000	7111.98 BTU/MIN
	HOT SIDE	3.305	535.59	534.69	1145.42	483.81	3926.5	1612.3	.607	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	6.515	573.17	569.83	334.51	460.02	1046.2	1525.7	.429	1.000	1.000	3124.03 BTU/MIN
	HOT SIDE	6.515	564.37	556.38	626.97	492.85	2119.9	1645.5	.459	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	6.515	569.07	565.37	460.02	626.98	1525.7	2120.0	.515	1.000	1.000	3871.70 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	784.21	666.91	.0	.0	.362	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	6.515	555.96	551.82	492.85	543.66	1645.4	1827.8	.351	1.000	1.000	1187.70 BTU/MIN
	HOT SIDE	28.500	200.00	199.89	637.71	546.49	.0	.0	.630	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	6.515	544.03	542.68	543.66	1145.42	1827.6	3926.7	.737	1.000	1.000	13674.90 BTU/MIN
	HOT SIDE	10.821	6.24	3.32	1360.57	758.13	.0	.0	.737	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	6.515	534.00	531.46	809.76	784.41	2759.5	2670.9	.050	1.000	1.000	-577.48 BTU/MIN
	HOT SIDE	4.306	900.00	899.37	300.00	784.11	35.4	169.0	.950	1.000	1.000	1 PASS PARALL

Computer Case 20 (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	555.964	492.852	.207	1645.445
2	.000	.000	.000	.000	42	551.824	543.655	.187	1827.753
3	.000	.000	.000	.000	43	551.366	543.655	.187	1827.745
4	.000	.000	.000	.000	44	551.366	543.655	.187	1827.745
5	900.000	300.000	16.648	35.434	45	550.908	543.655	.186	1827.737
6	899.372	784.107	3.433	168.975	46	544.030	543.655	.184	1827.621
7	807.912	784.107	3.086	169.250	47	542.683	1145.420	.090	3926.663
8	807.718	784.107	3.085	169.251	48	550.908	543.655	.186	1827.737
9	465.043	784.107	1.780	170.311	49	550.908	543.655	.000	.000
10	464.707	784.107	1.779	170.312	50	542.683	1145.416	.090	3926.648
11	329.285	784.107	1.262	170.765	51	541.730	1145.416	.090	3926.626
12	200.000	637.706	.000	.000	52	541.498	1145.416	.089	3926.620
13	199.888	546.488	.000	.000	53	534.692	.000	.000	.000
14	199.888	546.488	.000	.000	54	534.692	809.765	.123	2759.537
15	199.888	546.488	.000	.000	55	535.586	1145.416	.089	3926.479
16	200.000	784.213	.000	.000	56	534.692	483.812	.203	1612.291
17	200.000	784.213	.000	.000	57	533.995	809.765	.122	2759.521
18	200.000	784.213	.000	.000	58	531.456	784.405	.126	2670.881
19	199.986	666.914	.000	.000	59	530.779	784.405	.126	2670.866
20	.000	.000	.000	.000	60	328.089	784.405	.079	2666.433
21	.000	.000	.000	.000	61	300.051	1958.423	.029	6806.602
22	.000	.000	.000	.000	62	299.973	1958.423	.000	.000
23	.000	.000	.000	.000	63	63.828	1664.999	.000	.000
24	.000	.000	.000	.000	64	7.477	1360.568	.000	.000
25	.000	.000	.000	.000	65	6.245	1360.568	.000	.000
26	575.000	55.000	3.984	-45.499	66	3.323	758.133	.000	.000
27	574.657	55.000	3.984	-45.504	67	1.487	.000	.000	.000
28	573.718	334.514	.313	1046.155	68	.000	.000	.000	.000
29	573.445	334.514	.313	1046.155	69	.000	.000	.000	.000
30	573.445	334.514	.313	1046.155	70	.000	750.000	.000	.000
31	573.171	334.514	.312	1046.155	71	.000	745.627	.000	.000
32	569.825	460.017	.227	1525.681	72	.000	746.642	.000	.000
33	569.448	460.017	.226	1525.676	73	.000	.000	.000	.000
34	569.448	460.017	.226	1525.676	74	.000	.000	.000	.000
35	569.071	460.017	.226	1525.671	75	.000	.000	.000	.000
36	565.371	626.978	.171	2119.962	76	.000	.000	.000	.000
37	564.873	626.968	.171	2119.920	77	.000	.000	.000	.000
38	564.873	626.968	.171	2119.920	78	.000	.000	.000	.000
39	564.374	626.968	.171	2119.911	79	.000	.000	.000	.000
40	556.377	492.852	.207	1645.451	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:55:34

HYDRAULIC POWER	270.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	168.61	SPC	2.074	AMW	3.39
HYDRAULIC PUMP	45.43	LUBE PUMP	4.00	SECOND STAGE	174.82	O/F	.682		
TOTAL GEAR BOX	315.43			TOTAL TURBINE	343.43	PT OUT	1.527		

TURBINE INFORMATION

FLOW	10.905	PRESSURE	300.58	7.57	EFFICIENCY 1ST	.450	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1959.5	1359.6	EFFICIENCY 2ND	.403	A2	.2335	A4	.6096
PRESSURE RATIO	39.72	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.493	HP	343.43	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1109.56	543.92	749.67	749.67	750.00
PRESSURE IN	543.82	551.10	806.92	475.08	532.79
PRESSURE OUT	536.44	551.10	475.40	329.56	328.39
EFFECTIVE AREA	.09024	.01942	.00451	.00810	.04052
FLOW	2.985	.846	4.421	4.421	6.485

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	6.485	574.66	573.73	55.00	333.98	-45.5	1044.0	.265	1.000	1.000	7065.44 BTU/MIN
	HOT SIDE	3.500	537.42	536.44	1109.56	488.86	3801.9	1630.7	.589	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	6.485	573.19	569.88	333.98	460.00	1044.0	1525.6	.429	1.000	1.000	3122.88 BTU/MIN
	HOT SIDE	6.485	564.47	556.54	627.56	492.87	2122.0	1645.5	.459	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	6.485	569.13	565.46	460.00	627.56	1525.6	2122.0	.517	1.000	1.000	3867.47 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	784.22	667.06	.0	.0	.361	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	6.485	556.13	552.01	492.87	543.92	1645.5	1828.7	.352	1.000	1.000	1187.95 BTU/MIN
	HOT SIDE	28.500	200.00	199.89	637.87	546.63	.0	.0	.629	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	5.639	545.95	544.91	543.92	1194.37	1828.6	4096.9	.797	1.000	1.000	12791.44 BTU/MIN
	HOT SIDE	10.905	6.35	3.41	1359.65	800.52	.0	.0	.685	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	6.485	535.79	533.42	774.54	750.00	2636.4	2550.4	.052	1.000	1.000	-557.92 BTU/MIN
	HOT SIDE	4.421	900.00	899.36	300.00	749.67	35.4	160.8	.948	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	556.134	492.867	.207	1645.505
2	.000	.000	.000	.000	42	552.014	543.924	.187	1828.697
3	.000	.000	.000	.000	43	551.561	543.924	.187	1828.689
4	.000	.000	.000	.000	44	551.561	543.924	.187	1828.689
5	900.000	300.000	16.648	35.434	45	551.107	543.924	.186	1828.682
6	899.363	749.666	3.673	160.794	46	545.954	543.924	.185	1828.595
7	807.107	749.666	3.296	161.124	47	544.913	1194.374	.085	4096.911
8	806.916	749.666	3.296	161.125	48	551.099	543.924	.186	1828.682
9	475.405	749.666	1.940	162.339	49	544.912	543.924	.000	.000
10	475.080	749.666	1.939	162.340	50	544.913	1109.560	.094	3802.044
11	329.559	749.666	1.345	162.902	51	544.010	1109.560	.094	3802.023
12	200.000	637.866	.000	.000	52	543.818	1109.560	.094	3802.018
13	199.889	546.630	.000	.000	53	536.439	.000	.000	.000
14	199.889	546.630	.000	.000	54	536.440	774.543	.130	2636.435
15	199.889	546.630	.000	.000	55	537.421	1109.560	.092	3801.866
16	200.000	784.221	.000	.000	56	536.440	488.861	.201	1630.660
17	200.000	784.221	.000	.000	57	535.787	774.543	.130	2636.421
18	200.000	784.221	.000	.000	58	533.418	750.001	.134	2550.385
19	199.986	667.065	.000	.000	59	532.789	750.001	.134	2550.372
20	.000	.000	.000	.000	60	328.389	750.001	.084	2546.052
21	.000	.000	.000	.000	61	300.653	1959.503	.029	6810.674
22	.000	.000	.000	.000	62	300.576	1959.503	.000	.000
23	.000	.000	.000	.000	63	64.008	1665.000	.000	.000
24	.000	.000	.000	.000	64	7.568	1359.646	.000	.000
25	.000	.000	.000	.000	65	6.347	1359.646	.000	.000
26	575.000	55.000	3.984	-45.499	66	3.412	800.524	.000	.000
27	574.660	55.000	3.984	-45.504	67	1.527	.000	.000	.000
28	573.731	333.982	.313	1044.045	68	.000	.000	.000	.000
29	573.461	333.982	.313	1044.045	69	.000	.000	.000	.000
30	573.461	333.982	.313	1044.045	70	.000	750.000	.000	.000
31	573.190	333.982	.313	1044.045	71	.000	745.635	.000	.000
32	569.876	460.000	.227	1525.618	72	.000	746.650	.000	.000
33	569.502	460.000	.227	1525.613	73	.000	.000	.000	.000
34	569.502	460.000	.227	1525.613	74	.000	.000	.000	.000
35	569.128	460.000	.226	1525.609	75	.000	.000	.000	.000
36	565.460	627.560	.171	2122.004	76	.000	.000	.000	.000
37	564.966	627.563	.171	2122.006	77	.000	.000	.000	.000
38	564.966	627.563	.171	2122.006	78	.000	.000	.000	.000
39	564.471	627.563	.171	2121.996	79	.000	.000	.000	.000
40	556.543	492.867	.207	1645.511	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 07 DEC 72 13:55:55

HYDRAULIC POWER	350.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	210.33	SPC	2.024	AMW	3.39
HYDRAULIC PUMP	50.00	LUBE PUMP	4.00	SECOND STAGE	217.68	O/F	.683		
TOTAL GEAR BOX	400.00			TOTAL TURBINE	428.00	PT OUT	1.843		

TURBINE INFORMATION

FLOW	13.494	PRESSURE	372.06	9.18	EFFICIENCY 1ST	.451	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1962.0	1357.6	EFFICIENCY 2ND	.404	A2	.2335	A4	.6096
PRESSURE RATIO	40.55	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.495	HP	428.00	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1134.61	532.37	750.20	750.20	750.76
PRESSURE IN	525.19	539.34	744.15	478.00	503.23
PRESSURE OUT	508.29	539.34	478.49	408.00	406.54
EFFECTIVE AREA	.06071	.00000	.00619	.01289	.06445
FLOW	2.954	.000	5.475	5.475	8.019

HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	8.019	574.48	573.00	55.00	355.43	-45.5	1128.7	.278	1.000	1.000	9415.85 BTU/MIN
	HOT SIDE	5.065	510.70	508.51	1134.61	565.88	3886.3	1904.9	.527	1.000	1.000	4 PASS COUNT
3	COLD SIDE	8.019	572.12	567.02	355.43	460.02	1128.7	1525.7	.424	1.000	1.000	3183.23 BTU/MIN
	HOT SIDE	8.019	558.99	547.20	601.98	491.21	2032.3	1639.4	.449	1.000	1.000	6 PASS PARALL
5	COLD SIDE	8.019	565.87	560.46	460.02	601.99	1525.7	2032.3	.437	1.000	1.000	4062.83 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	784.92	661.47	.0	.0	.380	1.000	1.000	4 PASS COUNT
6	COLD SIDE	8.019	546.56	540.73	491.21	532.37	1639.3	1787.5	.295	1.000	1.000	1187.66 BTU/MIN
	HOT SIDE	28.500	200.00	199.86	630.84	539.22	.0	.0	.656	1.000	1.000	4 PASS COUNT
8	COLD SIDE	8.019	528.90	526.86	532.37	1134.62	1787.3	3888.7	.730	1.000	1.000	16851.18 BTU/MIN
	HOT SIDE	13.494	7.64	4.12	1357.61	762.44	.0	.0	.721	1.000	1.000	2 PASS COUNT
9	COLD SIDE	8.019	507.46	504.25	775.36	750.76	2638.7	2552.4	.052	1.000	1.000	-691.64 BTU/MIN
	HOT SIDE	5.475	900.00	899.03	300.00	750.20	35.4	160.9	.947	1.000	1.000	1 PASS PARALL

Computer Case 21 (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	546.561	491.212	.204	1639.349
2	.000	.000	.000	.000	42	540.731	532.374	.186	1787.481
3	.000	.000	.000	.000	43	540.037	532.374	.186	1787.470
4	.000	.000	.000	.000	44	540.037	532.374	.186	1787.470
5	900.000	300.000	16.648	35.434	45	539.341	532.374	.186	1787.459
6	899.034	750.198	3.668	160.922	46	528.899	532.374	.182	1787.287
7	744.468	750.198	3.037	161.486	47	526.859	1134.616	.088	3888.723
8	744.150	750.198	3.036	161.487	48	539.341	532.374	.186	1787.459
9	478.493	750.198	1.951	162.451	49	539.341	532.374	.000	.000
10	477.998	750.198	1.949	162.452	50	526.859	1134.613	.088	3888.713
11	407.995	750.198	1.664	162.711	51	525.391	1134.613	.088	3888.678
12	200.000	630.839	.000	.000	52	525.191	1134.613	.088	3888.673
13	199.859	539.222	.000	.000	53	508.286	.000	.000	.000
14	199.859	539.222	.000	.000	54	508.512	775.358	.123	2638.684
15	199.859	539.222	.000	.000	55	510.701	1134.613	.086	3888.327
16	200.000	784.924	.000	.000	56	508.512	565.878	.168	1904.868
17	200.000	784.924	.000	.000	57	507.458	775.358	.123	2638.661
18	200.000	784.924	.000	.000	58	504.246	750.755	.127	2552.409
19	199.985	661.470	.000	.000	59	503.227	750.755	.127	2552.387
20	.000	.000	.000	.000	60	406.543	750.755	.103	2550.362
21	.000	.000	.000	.000	61	372.152	1962.003	.036	6821.456
22	.000	.000	.000	.000	62	372.057	1962.003	.000	.000
23	.000	.000	.000	.000	63	78.669	1664.999	.000	.000
24	.000	.000	.000	.000	64	9.175	1357.614	.000	.000
25	.000	.000	.000	.000	65	7.637	1357.614	.000	.000
26	575.000	55.000	3.984	-45.499	66	4.118	762.444	.000	.000
27	574.480	55.000	3.984	-45.507	67	1.843	.000	.000	.000
28	573.004	355.429	.294	1128.702	68	.000	.000	.000	.000
29	572.563	355.429	.294	1128.700	69	.000	.000	.000	.000
30	572.563	355.429	.294	1128.700	70	.000	750.000	.000	.000
31	572.123	355.429	.294	1128.699	71	.000	746.362	.000	.000
32	567.019	460.022	.226	1525.665	72	.000	747.377	.000	.000
33	566.445	460.022	.225	1525.657	73	.000	.000	.000	.000
34	566.445	460.022	.225	1525.657	74	.000	.000	.000	.000
35	565.870	460.022	.225	1525.650	75	.000	.000	.000	.000
36	560.461	601.989	.176	2032.308	76	.000	.000	.000	.000
37	559.726	601.984	.176	2032.276	77	.000	.000	.000	.000
38	559.726	601.984	.176	2032.276	78	.000	.000	.000	.000
39	558.989	601.984	.175	2032.263	79	.000	.000	.000	.000
40	547.195	491.212	.204	1639.358	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72. 13:56:51

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	43.05	SPC	5.622	AMW	3.03
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	14.95	O/F	.501		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	14.700		

TURBINE INFORMATION

FLOW	2.811	PRESSURE	81.22	14.93	EFFICIENCY 1ST	.427	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.363	TEMPERATURE	1928.8	1573.4	EFFICIENCY 2ND	.573	A2	.2335	A4	.6096
PRESSURE RATIO	5.44	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.507	HP	58.00	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1345.02	654.67	1031.77	1031.77	1031.77
PRESSURE IN	571.96	572.86	894.85	356.71	571.27
PRESSURE OUT	571.86	572.86	356.73	87.86	87.63
EFFECTIVE AREA	.39662	.00000	.00100	.00252	.01260
FLOW	1.413	.000	.939	.939	1.872

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.872	574.97	574.90	55.00	290.36	-45.5	869.4	.182	1.000	1.000	1713.00 BTU/MIN
	HOT SIDE	.460	571.88	571.87	1345.02	182.95	4628.2	457.2	.901	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.872	574.86	574.56	290.36	459.96	869.4	1525.5	.460	1.000	1.000	1228.59 BTU/MIN
	HOT SIDE	1.872	574.07	573.35	659.02	475.54	2232.4	1582.7	.498	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.872	574.50	574.16	459.96	659.00	1525.5	2232.3	.873	1.000	1.000	1323.38 BTU/MIN
	HOT SIDE	57.000	200.00	199.96	687.88	645.76	.0	.0	.185	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.872	573.32	572.94	475.54	654.67	1582.7	2217.1	.772	1.000	1.000	1187.94 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	707.55	620.92	.0	.0	.373	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.872	572.22	572.09	654.67	1345.01	2217.1	4628.1	.751	1.000	1.000	4514.35 BTU/MIN
	HOT SIDE	2.811	14.88	14.74	1573.38	810.12	.0	.0	.831	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.872	571.80	571.33	1059.68	1031.77	3629.3	3532.2	.037	1.000	1.000	-181.75 BTU/MIN
	HOT SIDE	.939	900.00	899.95	300.00	1031.77	35.4	228.7	.963	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.317	475.545	.221	1582.677
2	.000	.000	.000	.000	42	572.943	654.666	.167	2217.133
3	.000	.000	.000	.000	43	572.901	654.666	.167	2217.133
4	.000	.000	.000	.000	44	572.901	654.666	.167	2217.133
5	900.000	300.000	16.648	35.434	45	572.859	654.666	.167	2217.132
6	899.949	1031.766	2.678	228.728	46	572.225	654.666	.167	2217.120
7	894.862	1031.766	2.663	228.736	47	572.095	1345.008	.081	4628.145
8	894.851	1031.766	2.663	228.736	48	572.859	654.666	.167	2217.132
9	356.733	1031.766	1.071	229.458	49	572.859	654.666	.000	.000
10	356.707	1031.766	1.070	229.458	50	572.095	1345.016	.081	4628.174
11	87.862	1031.766	.265	229.822	51	572.008	1345.016	.081	4628.172
12	200.000	707.552	.000	.000	52	571.959	1345.016	.081	4628.171
13	199.986	620.916	.000	.000	53	571.860	.000	.000	.000
14	199.986	620.916	.000	.000	54	571.866	1059.683	.104	3629.273
15	199.986	620.916	.000	.000	55	571.877	1345.016	.081	4628.169
16	200.000	687.880	.000	.000	56	571.866	182.946	.586	457.164
17	200.000	687.880	.000	.000	57	571.798	1059.683	.104	3629.272
18	200.000	687.880	.000	.000	58	571.331	1031.766	.107	3532.202
19	199.959	645.765	.000	.000	59	571.265	1031.766	.107	3532.201
20	.000	.000	.000	.000	60	87.630	1031.766	.017	3520.877
21	.000	.000	.000	.000	61	81.244	1928.769	.008	6692.646
22	.000	.000	.000	.000	62	81.223	1928.769	.000	.000
23	.000	.000	.000	.000	63	19.060	1665.000	.000	.000
24	.000	.000	.000	.000	64	14.929	1573.377	.000	.000
25	.000	.000	.000	.000	65	14.875	1573.377	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.742	810.125	.000	.000
27	574.972	55.000	3.984	-45.500	67	14.700	810.125	.000	.000
28	574.896	290.365	.361	869.381	68	.000	.000	.000	.000
29	574.876	290.365	.361	869.381	69	.000	.000	.000	.000
30	574.876	290.365	.361	869.381	70	.000	750.000	.000	.000
31	574.857	290.365	.361	869.381	71	.000	645.765	.000	.000
32	574.564	459.964	.229	1525.547	72	.000	646.873	.000	.000
33	574.533	459.964	.228	1525.547	73	.000	.000	.000	.000
34	574.533	459.964	.228	1525.547	74	.000	.000	.000	.000
35	574.502	459.964	.228	1525.546	75	.000	.000	.000	.000
36	574.157	658.998	.166	2232.339	76	.000	.000	.000	.000
37	574.115	659.017	.166	2232.405	77	.000	.000	.000	.000
38	574.115	659.017	.166	2232.405	78	.000	.000	.000	.000
39	574.072	659.017	.166	2232.404	79	.000	.000	.000	.000
40	573.349	475.545	.221	1582.677	80	.000	.000	.000	1.000

Computer Case 22B

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:56:59

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	43.24	SPC	6.006	AMW	3.36
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	14.76	O/F	.669		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	14.700		

TURBINE INFORMATION

FLOW	3.003	PRESSURE	82.61	14.97	EFFICIENCY 1ST	.443	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1937.8	1571.9	EFFICIENCY 2ND	.577	A2	.2335	A4	.6096
PRESSURE RATIO	5.52	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.521	HP	58.00	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1049.15	662.27	749.80	749.80	749.80
PRESSURE IN	572.78	573.00	893.85	476.50	572.20
PRESSURE OUT	572.62	573.00	476.52	90.44	90.13
EFFECTIVE AREA	.23653	.17625	.00110	.00206	.01031
FLOW	1.204	1.023	1.203	1.203	1.800

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.800	574.97	574.91	55.00	283.75	-45.5	842.8	.230	1.000	1.000	1598.60 BTU/MIN
	HOT SIDE	.596	572.63	572.62	1049.15	217.82	3592.7	582.9	.836	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.800	574.67	574.60	283.75	460.19	842.8	1526.4	.460	1.000	1.000	1230.28 BTU/MIN
	HOT SIDE	1.800	574.14	573.46	667.18	475.89	2261.0	1583.9	.499	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.800	574.54	574.22	460.19	667.23	1526.4	2261.2	.885	1.000	1.000	1322.41 BTU/MIN
	HOT SIDE	57.000	200.00	199.96	694.04	652.21	.0	.0	.179	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.800	573.43	573.09	475.89	662.27	1583.9	2243.8	.785	1.000	1.000	1187.54 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	713.34	627.15	.0	.0	.363	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.777	572.90	572.87	662.27	1558.23	2243.8	5379.6	.985	1.000	1.000	2437.04 BTU/MIN
	HOT SIDE	3.003	14.92	14.76	1571.86	1187.45	.0	.0	.423	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.800	572.57	572.25	773.88	749.80	2634.9	2550.5	.051	1.000	1.000	-151.66 BTU/MIN
	HOT SIDE	1.203	900.00	899.94	300.00	749.80	35.4	160.8	.949	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.435	475.869	.221	1583.937
2	.000	.000	.000	.000	42	573.087	662.274	.165	2243.798
3	.000	.000	.000	.000	43	573.047	662.274	.165	2243.797
4	.000	.000	.000	.000	44	573.047	662.274	.165	2243.797
5	900.000	300.000	16.648	35.434	45	573.008	662.274	.165	2243.796
6	899.939	749.798	3.674	160.823	46	572.897	662.274	.165	2243.794
7	893.863	749.798	3.650	160.846	47	572.867	1558.230	.071	5379.573
8	893.850	749.798	3.649	160.846	48	572.995	662.274	.165	2243.796
9	476.523	749.798	1.945	162.365	49	572.866	662.274	.000	.000
10	476.499	749.798	1.944	162.365	50	572.867	1049.148	.105	3592.669
11	90.437	749.798	.369	163.790	51	572.805	1049.148	.105	3592.668
12	200.000	713.343	.000	.000	52	572.777	1049.148	.105	3592.667
13	199.988	627.148	.000	.000	53	572.620	.000	.000	.000
14	199.988	627.148	.000	.000	54	572.621	773.877	.138	2634.891
15	199.988	627.148	.000	.000	55	572.635	1049.148	.105	3592.664
16	200.000	694.038	.000	.000	56	572.621	217.820	.485	582.938
17	200.000	694.038	.000	.000	57	572.573	773.877	.138	2634.890
18	200.000	694.038	.000	.000	58	572.247	749.801	.144	2550.512
19	199.965	652.205	.000	.000	59	572.202	749.801	.144	2550.511
20	.000	.000	.000	.000	60	90.126	749.801	.023	2540.267
21	.000	.000	.000	.000	61	82.627	1937.826	.008	6725.045
22	.000	.000	.000	.000	62	82.606	1937.826	.000	.000
23	.000	.000	.000	.000	63	19.391	1664.996	.000	.000
24	.000	.000	.000	.000	64	14.974	1571.855	.000	.000
25	.000	.000	.000	.000	65	14.919	1571.855	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.764	1187.453	.000	.000
27	574.974	55.000	3.984	-45.500	67	14.700	1187.453	.000	.000
28	574.905	283.750	.370	842.767	68	.000	.000	.000	.000
29	574.887	283.750	.370	842.767	69	.000	.000	.000	.000
30	574.887	283.750	.370	842.767	70	.000	750.000	.000	.000
31	574.870	283.750	.370	842.767	71	.000	652.205	.000	.000
32	574.600	460.190	.228	1526.379	72	.000	653.307	.000	.000
33	574.572	460.190	.228	1526.378	73	.000	.000	.000	.000
34	574.572	460.190	.228	1526.378	74	.000	.000	.000	.000
35	574.543	460.190	.228	1526.378	75	.000	.000	.000	.000
36	574.222	667.227	.164	2261.179	76	.000	.000	.000	.000
37	574.183	667.182	.164	2261.021	77	.000	.000	.000	.000
38	574.183	667.182	.164	2261.021	78	.000	.000	.000	.000
39	574.143	667.182	.164	2261.020	79	.000	.000	.000	.000
40	573.464	475.869	.221	1583.937	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:57:13

HYDRAULIC POWER	5.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	46.00	SPC	5.015	AMW	2.99
HYDRAULIC PUMP	30.29	LUBE PUMP	4.00	SECOND STAGE	17.29	O/F	.483		
TOTAL GEAR BOX	35.29			TOTAL TURBINE	63.29	PT OUT	14.700		

TURBINE INFORMATION

FLOW	2.949	PRESSURE	85.78	14.95	EFFICIENCY 1ST	.424	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.364	TEMPERATURE	1930.6	1565.2	EFFICIENCY 2ND	.572	A2	.2335	A4	.6096
PRESSURE RATIO	5.74	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.508	HP	63.29	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1331.63	651.45	1066.05	1066.05	1066.05
PRESSURE IN	571.57	572.58	894.43	343.30	570.83
PRESSURE OUT	571.46	572.58	343.33	92.61	92.38
EFFECTIVE AREA	.43732	.00000	.00105	.00272	.01362
FLOW	1.588	.000	.960	.960	1.989

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.989	574.97	574.89	55.00	249.33	-45.5	705.1	.152	1.000	1.000	1493.02 BTU/MIN
	HOT SIDE	.401	571.53	571.52	1331.63	152.06	4581.0	352.7	.924	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.989	574.86	574.55	249.33	460.23	705.1	1526.5	.454	1.000	1.000	1633.76 BTU/MIN
	HOT SIDE	1.989	573.97	573.14	714.31	482.61	2426.2	1608.5	.498	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.989	574.48	574.08	460.23	714.39	1526.5	2426.4	.868	1.000	1.000	1789.90 BTU/MIN
	HOT SIDE	57.000	200.00	199.98	746.57	692.29	.0	.0	.190	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.989	573.10	572.68	482.61	651.45	1608.5	2205.8	.754	1.000	1.000	1188.19 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	706.44	619.65	.0	.0	.388	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.989	571.87	571.73	651.45	1331.68	2205.8	4581.2	.744	1.000	1.000	4724.54 BTU/MIN
	HOT SIDE	2.949	14.89	14.75	1565.20	803.68	.0	.0	.833	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.989	571.44	570.91	1094.10	1066.05	3748.9	3651.4	.035	1.000	1.000	-194.01 BTU/MIN
	HOT SIDE	.960	900.00	899.95	300.00	1066.05	35.4	237.0	.965	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.099	482.610	.217	1608.465
2	.000	.000	.000	.000	42	572.677	651.446	.168	2205.844
3	.000	.000	.000	.000	43	572.629	651.446	.168	2205.843
4	.000	.000	.000	.000	44	572.629	651.446	.168	2205.843
5	900.000	300.000	16.648	35.434	45	572.582	651.446	.168	2205.843
6	899.946	1066.053	2.583	237.010	46	571.869	651.446	.168	2205.829
7	894.442	1066.053	2.567	237.016	47	571.725	1331.680	.082	4581.167
8	894.431	1066.053	2.567	237.016	48	572.582	651.446	.168	2205.843
9	343.330	1066.053	.994	237.636	49	572.582	651.446	.000	.000
10	343.301	1066.053	.994	237.636	50	571.725	1331.626	.082	4580.978
11	92.614	1066.053	.269	237.919	51	571.628	1331.626	.082	4580.975
12	200.000	706.438	.000	.000	52	571.566	1331.626	.082	4580.974
13	199.986	619.652	.000	.000	53	571.465	.000	.000	.000
14	199.986	619.652	.000	.000	54	571.522	1094.105	.100	3748.941
15	199.986	619.652	.000	.000	55	571.530	1331.626	.082	4580.973
16	200.000	746.570	.000	.000	56	571.522	152.062	.723	352.729
17	200.000	746.570	.000	.000	57	571.442	1094.105	.100	3748.940
18	200.000	746.570	.000	.000	58	570.908	1066.053	.103	3651.398
19	199.984	692.287	.000	.000	59	570.831	1066.053	.103	3651.396
20	.000	.000	.000	.000	60	92.381	1066.053	.017	3640.119
21	.000	.000	.000	.000	61	85.803	1930.571	.009	6698.737
22	.000	.000	.000	.000	62	85.781	1930.571	.000	.000
23	.000	.000	.000	.000	63	19.687	1664.999	.000	.000
24	.000	.000	.000	.000	64	14.952	1565.197	.000	.000
25	.000	.000	.000	.000	65	14.893	1565.197	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.747	803.679	.000	.000
27	574.968	55.000	3.984	-45.500	67	14.700	803.679	.000	.000
28	574.895	249.325	.422	705.140	68	.000	.000	.000	.000
29	574.876	249.325	.422	705.141	69	.000	.000	.000	.000
30	574.876	249.325	.422	705.141	70	.000	750.000	.000	.000
31	574.857	249.325	.422	705.141	71	.000	706.716	.000	.000
32	574.546	460.234	.228	1526.540	72	.000	707.765	.000	.000
33	574.511	460.234	.228	1526.540	73	.000	.000	.000	.000
34	574.511	460.234	.228	1526.540	74	.000	.000	.000	.000
35	574.476	460.234	.228	1526.540	75	.000	.000	.000	.000
36	574.075	714.385	.153	2426.438	76	.000	.000	.000	.000
37	574.024	714.312	.153	2426.179	77	.000	.000	.000	.000
38	574.024	714.312	.153	2426.179	78	.000	.000	.000	.000
39	573.972	714.312	.153	2426.178	79	.000	.000	.000	.000
40	573.135	482.610	.217	1608.465	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:57:25

HYDRAULIC POWER	5.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	46.20	SPC	5.400	AMW	3.37
HYDRAULIC PUMP	30.29	LUBE PUMP	4.00	SECOND STAGE	17.09	O/F	.670		
TOTAL GEAR BOX	35.29			TOTAL TURBINE	63.29	PT OUT	14.700		

TURBINE INFORMATION

FLOW	3.176	PRESSURE	87.39	15.01	EFFICIENCY 1ST	.442	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1940.8	1563.0	EFFICIENCY 2ND	.580	A2	.2335	A4	.6096
PRESSURE RATIO	5.82	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.524	HP	63.29	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1001.54	658.82	750.00	750.00	750.01
PRESSURE IN	572.55	572.76	893.10	477.62	571.99
PRESSURE OUT	572.45	572.76	477.65	95.69	95.36
EFFECTIVE AREA	.32280	.22147	.00117	.00218	.01090
FLOW	1.372	1.174	1.275	1.275	1.901

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.901	574.97	574.91	55.00	243.42	-45.5	681.8	.199	1.000	1.000	1382.81 BTU/MIN
	HOT SIDE	.529	572.46	572.45	1001.54	184.94	3427.1	463.9	.863	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.901	574.87	574.59	243.42	460.03	681.8	1525.8	.454	1.000	1.000	1604.64 BTU/MIN
	HOT SIDE	1.901	574.06	573.28	720.58	482.18	2448.1	1606.9	.500	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.901	574.52	574.16	460.03	720.59	1525.8	2448.2	.898	1.000	1.000	1753.76 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	750.11	697.14	.0	.0	.183	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.901	573.25	572.86	482.18	658.82	1606.9	2231.7	.769	1.000	1.000	1187.89 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	711.75	625.38	.0	.0	.376	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.727	572.68	572.65	658.82	1554.84	2231.7	5367.6	.991	1.000	1.000	2280.55 BTU/MIN
	HOT SIDE	3.176	14.95	14.77	1562.99	1222.85	.0	.0	.376	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.901	572.39	572.04	774.16	750.01	2635.9	2551.2	.051	1.000	1.000	-160.95 BTU/MIN
	HOT SIDE	1.275	900.00	899.93	300.00	750.00	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.250	482.177	.218	1606.892
2	.000	.000	.000	.000	42	572.862	658.817	.166	2231.678
3	.000	.000	.000	.000	43	572.818	658.817	.166	2231.677
4	.000	.000	.000	.000	44	572.818	658.817	.166	2231.677
5	900.000	300.000	16.648	35.434	45	572.774	658.817	.166	2231.677
6	899.933	750.002	3.673	160.872	46	572.678	658.817	.166	2231.675
7	893.114	750.002	3.645	160.897	47	572.650	1554.841	.071	5367.627
8	893.099	750.002	3.645	160.897	48	572.757	658.817	.166	2231.676
9	477.645	750.002	1.948	162.408	49	572.650	658.817	.000	.000
10	477.618	750.002	1.948	162.408	50	572.650	1001.536	.110	3427.131
11	95.694	750.002	.390	163.816	51	572.584	1001.536	.110	3427.129
12	200.000	711.750	.000	.000	52	572.550	1001.536	.110	3427.128
13	199.988	625.377	.000	.000	53	572.446	.000	.000	.000
14	199.988	625.377	.000	.000	54	572.446	774.160	.138	2635.877
15	199.988	625.377	.000	.000	55	572.456	1001.536	.110	3427.126
16	200.000	750.111	.000	.000	56	572.446	184.938	.579	463.947
17	200.000	750.111	.000	.000	57	572.393	774.160	.138	2635.875
18	200.000	750.111	.000	.000	58	572.036	750.006	.144	2551.224
19	199.985	697.137	.000	.000	59	571.986	750.006	.144	2551.223
20	.000	.000	.000	.000	60	95.363	750.006	.024	2541.094
21	.000	.000	.000	.000	61	87.408	1940.841	.009	6737.043
22	.000	.000	.000	.000	62	87.386	1940.841	.000	.000
23	.000	.000	.000	.000	63	20.087	1665.000	.000	.000
24	.000	.000	.000	.000	64	15.007	1562.994	.000	.000
25	.000	.000	.000	.000	65	14.947	1562.994	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.773	1222.848	.000	.000
27	574.971	55.000	3.984	-45.500	67	14.700	1222.848	.000	.000
28	574.905	243.419	.433	681.806	68	.000	.000	.000	.000
29	574.888	243.419	.433	681.806	69	.000	.000	.000	.000
30	574.888	243.419	.433	681.806	70	.000	750.000	.000	.000
31	574.871	243.419	.433	681.807	71	.000	710.353	.000	.000
32	574.588	460.029	.228	1525.785	72	.000	711.399	.000	.000
33	574.556	460.029	.228	1525.785	73	.000	.000	.000	.000
34	574.556	460.029	.228	1525.785	74	.000	.000	.000	.000
35	574.525	460.029	.228	1525.785	75	.000	.000	.000	.000
36	574.156	720.594	.152	2448.196	76	.000	.000	.000	.000
37	574.108	720.578	.152	2448.139	77	.000	.000	.000	.000
38	574.108	720.578	.152	2448.139	78	.000	.000	.000	.000
39	574.060	720.578	.152	2448.138	79	.000	.000	.000	.000
40	573.283	482.177	.218	1606.893	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:57:40

HYDRAULIC POWER	10.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	48.89	SPC	4.598	AMW	2.99
HYDRAULIC PUMP	30.57	LUBE PUMP	4.00	SECOND STAGE	19.68	O/F	.485		
TOTAL GEAR BOX	40.57			TOTAL TURBINE	68.57	PT OUT	14.700		

TURBINE INFORMATION

FLOW	3.109	PRESSURE	90.43	14.98	EFFICIENCY 1ST	.423	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.364	TEMPERATURE	1933.0	1557.1	EFFICIENCY 2ND	.570	A2	.2335	A4	.6096
PRESSURE RATIO	6.04	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.511	HP	68.57	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1322.82	645.29	1065.34	1065.34	1065.34
PRESSURE IN	571.20	572.32	893.78	344.32	570.41
PRESSURE OUT	571.08	572.32	344.35	97.67	97.42
EFFECTIVE AREA	.41275	.00000	.00111	.00287	.01434
FLOW	1.684	.000	1.015	1.015	2.094

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	2.094	574.96	574.89	55.00	242.43	-45.5	677.9	.148	1.000	1.000	1514.96 BTU/MIN
	HOT SIDE	.410	571.17	571.16	1322.82	150.84	4549.9	348.7	.924	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	2.094	574.85	574.51	242.43	460.32	677.9	1526.9	.452	1.000	1.000	1777.86 BTU/MIN
	HOT SIDE	2.094	573.87	572.93	724.95	484.94	2463.5	1616.9	.497	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	2.094	574.43	573.98	460.32	725.00	1526.9	2463.6	.883	1.000	1.000	1961.80 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	760.07	701.18	.0	.0	.196	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	2.094	572.89	572.43	484.94	645.29	1616.9	2184.3	.738	1.000	1.000	1188.12 BTU/MIN
	HOT SIDE	28.500	200.00	199.98	702.23	615.18	.0	.0	.401	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	2.094	571.54	571.38	645.29	1322.88	2184.3	4550.2	.743	1.000	1.000	4954.68 BTU/MIN
	HOT SIDE	3.109	14.91	14.75	1557.10	799.39	.0	.0	.831	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	2.094	571.07	570.50	1093.48	1065.34	3746.8	3648.9	.035	1.000	1.000	-204.88 BTU/MIN
	HOT SIDE	1.015	900.00	899.94	300.00	1065.34	35.4	236.8	.965	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	572.892	484.940	.216	1616.932
2	.000	.000	.000	.000	42	572.427	645.291	.169	2184.271
3	.000	.000	.000	.000	43	572.375	645.291	.169	2184.270
4	.000	.000	.000	.000	44	572.375	645.291	.169	2184.270
5	900.000	300.000	16.648	35.434	45	572.322	645.291	.169	2184.269
6	899.941	1065.344	2.585	236.839	46	571.539	645.291	.169	2184.254
7	893.798	1065.344	2.567	236.846	47	571.381	1322.885	.082	4550.165
8	893.785	1065.344	2.567	236.846	48	572.322	645.291	.169	2184.269
9	344.355	1065.344	.998	237.466	49	572.322	645.291	.000	.000
10	344.321	1065.344	.998	237.466	50	571.381	1322.820	.082	4549.938
11	97.665	1065.344	.284	237.745	51	571.274	1322.820	.082	4549.936
12	200.000	702.232	.000	.000	52	571.205	1322.820	.082	4549.934
13	199.985	615.176	.000	.000	53	571.077	.000	.000	.000
14	199.985	615.176	.000	.000	54	571.163	1093.479	.100	3746.760
15	199.985	615.176	.000	.000	55	571.172	1322.820	.082	4549.933
16	200.000	760.073	.000	.000	56	571.163	150.839	.729	348.689
17	200.000	760.073	.000	.000	57	571.075	1093.479	.100	3746.758
18	200.000	760.073	.000	.000	58	570.495	1065.345	.103	3648.926
19	199.987	701.176	.000	.000	59	570.409	1065.345	.103	3648.924
20	.000	.000	.000	.000	60	97.417	1065.345	.018	3637.778
21	.000	.000	.000	.000	61	90.457	1932.988	.009	6707.486
22	.000	.000	.000	.000	62	90.433	1932.988	.000	.000
23	.000	.000	.000	.000	63	20.396	1664.998	.000	.000
24	.000	.000	.000	.000	64	14.976	1557.096	.000	.000
25	.000	.000	.000	.000	65	14.911	1557.096	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.752	799.386	.000	.000
27	574.965	55.000	3.984	-45.500	67	14.700	799.386	.000	.000
28	574.886	242.432	.435	677.907	68	.000	.000	.000	.000
29	574.866	242.432	.435	677.907	69	.000	.000	.000	.000
30	574.866	242.432	.435	677.907	70	.000	750.000	.000	.000
31	574.845	242.432	.435	677.908	71	.000	720.706	.000	.000
32	574.505	460.318	.228	1526.852	72	.000	721.743	.000	.000
33	574.466	460.318	.228	1526.852	73	.000	.000	.000	.000
34	574.466	460.318	.228	1526.852	74	.000	.000	.000	.000
35	574.428	460.318	.228	1526.851	75	.000	.000	.000	.000
36	573.982	724.999	.151	2463.631	76	.000	.000	.000	.000
37	573.924	724.952	.151	2463.465	77	.000	.000	.000	.000
38	573.924	724.952	.151	2463.465	78	.000	.000	.000	.000
39	573.865	724.952	.150	2463.464	79	.000	.000	.000	.000
40	572.933	484.940	.216	1616.932	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:57:48

HYDRAULIC POWER	10.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	49.08	SPC	4.949	AMW	3.37
HYDRAULIC PUMP	30.57	LUBE PUMP	4.00	SECOND STAGE	19.50	O/F	.672		
TOTAL GEAR BOX	40.57			TOTAL TURBINE	68.57	PT OUT	14.700		

TURBINE INFORMATION

FLOW	3.346	PRESSURE	92.10	15.04	EFFICIENCY 1ST	.442	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1943.2	1554.5	EFFICIENCY 2ND	.580	A2	.2335	A4	.6096
PRESSURE RATIO	6.12	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.527	HP	68.57	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	994.51	652.24	749.95	749.95	749.96
PRESSURE IN	572.30	572.53	892.32	478.41	571.69
PRESSURE OUT	572.19	572.53	478.44	100.87	100.52
EFFECTIVE AREA	.33582	.22122	.00123	.00230	.01148
FLOW	1.457	1.235	1.345	1.345	2.002

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	2.002	574.97	574.90	55.00	237.42	-45.5	658.3	.194	1.000	1.000	1408.67 BTU/MIN
	HOT SIDE	.545	572.20	572.19	994.51	185.24	3402.7	465.0	.861	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	2.002	574.86	574.55	237.42	460.04	658.3	1525.8	.452	1.000	1.000	1736.43 BTU/MIN
	HOT SIDE	2.002	573.96	573.11	730.15	484.45	2481.7	1615.1	.499	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	2.002	574.48	574.07	460.04	730.17	1525.8	2481.8	.893	1.000	1.000	1913.33 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	762.39	705.11	.0	.0	.189	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	2.002	573.07	572.64	484.45	652.24	1615.1	2208.6	.753	1.000	1.000	1187.93 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	707.36	620.65	.0	.0	.389	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.767	572.44	572.41	652.24	1545.67	2208.6	5335.3	.990	1.000	1.000	2397.50 BTU/MIN
	HOT SIDE	3.346	14.97	14.78	1554.46	1215.03	.0	.0	.376	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	2.002	572.13	571.75	774.14	749.96	2635.8	2551.1	.051	1.000	1.000	-169.61 BTU/MIN
	HOT SIDE	1.345	900.00	899.93	300.00	749.95	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.070	484.445	.217	1615.137
2	.000	.000	.000	.000	42	572.642	652.244	.168	2208.642
3	.000	.000	.000	.000	43	572.594	652.244	.168	2208.641
4	.000	.000	.000	.000	44	572.594	652.244	.168	2208.641
5	900.000	300.000	16.648	35.434	45	572.545	652.244	.168	2208.640
6	899.926	749.955	3.673	160.861	46	572.439	652.244	.168	2208.638
7	892.336	749.955	3.642	160.888	47	572.410	1545.673	.072	5335.313
8	892.320	749.955	3.642	160.888	48	572.527	652.244	.168	2208.640
9	478.436	749.955	1.952	162.395	49	572.410	652.244	.000	.000
10	478.406	749.955	1.952	162.395	50	572.410	994.507	.111	3402.687
11	100.867	749.955	.411	163.787	51	572.337	994.507	.111	3402.685
12	200.000	707.360	.000	.000	52	572.299	994.507	.111	3402.684
13	199.986	620.647	.000	.000	53	572.191	.000	.000	.000
14	199.986	620.647	.000	.000	54	572.191	774.138	.138	2635.796
15	199.986	620.647	.000	.000	55	572.202	994.507	.111	3402.682
16	200.000	762.392	.000	.000	56	572.191	185.242	.578	464.995
17	200.000	762.392	.000	.000	57	572.133	774.138	.138	2635.794
18	200.000	762.392	.000	.000	58	571.745	749.960	.144	2551.057
19	199.987	705.112	.000	.000	59	571.689	749.960	.144	2551.056
20	.000	.000	.000	.000	60	100.517	749.960	.026	2541.044
21	.000	.000	.000	.000	61	92.119	1943.247	.009	6745.806
22	.000	.000	.000	.000	62	92.095	1943.247	.000	.000
23	.000	.000	.000	.000	63	20.826	1665.000	.000	.000
24	.000	.000	.000	.000	64	15.036	1554.459	.000	.000
25	.000	.000	.000	.000	65	14.970	1554.459	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.781	1215.028	.000	.000
27	574.968	55.000	3.984	-45.500	67	14.700	1215.028	.000	.000
28	574.897	237.421	.444	658.291	68	.000	.000	.000	.000
29	574.879	237.421	.444	658.291	69	.000	.000	.000	.000
30	574.879	237.421	.444	658.291	70	.000	750.000	.000	.000
31	574.861	237.421	.444	658.291	71	.000	723.067	.000	.000
32	574.551	460.042	.228	1525.835	72	.000	724.102	.000	.000
33	574.516	460.042	.228	1525.835	73	.000	.000	.000	.000
34	574.516	460.042	.228	1525.835	74	.000	.000	.000	.000
35	574.481	460.042	.228	1525.834	75	.000	.000	.000	.000
36	574.071	730.172	.149	2481.760	76	.000	.000	.000	.000
37	574.017	730.154	.149	2481.697	77	.000	.000	.000	.000
38	574.017	730.154	.149	2481.697	78	.000	.000	.000	.000
39	573.963	730.154	.149	2481.696	79	.000	.000	.000	.000
40	573.107	484.445	.217	1615.138	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:58:07

HYDRAULIC POWER	90.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	88.80	SPC	2.700	AMW	3.15
HYDRAULIC PUMP	35.14	LUBE PUMP	4.00	SECOND STAGE	64.34	O/F	.563		
TOTAL GEAR BOX	125.14			TOTAL TURBINE	153.14	PT OUT	14.700		

TURBINE INFORMATION

FLOW	5.631	PRESSURE	160.30	15.45	EFFICIENCY 1ST	.433	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.361	TEMPERATURE	1946.4	1461.1	EFFICIENCY 2ND	.542	A2	.2335	A4	.6096
PRESSURE RATIO	10.38	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.539	HP	153.14	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1235.85	585.64	942.08	942.08	942.10
PRESSURE IN	564.15	567.21	878.01	394.07	561.98
PRESSURE OUT	563.37	567.21	394.18	174.61	174.07
EFFECTIVE AREA	.25063	.00000	.00211	.00471	.02355
FLOW	2.614	.000	2.028	2.028	3.603

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	3.603	574.90	574.65	55.00	273.52	-45.5	801.6	.185	1.000	1.000	3052.22 BTU/MIN
	HOT SIDE	.989	563.74	563.67	1235.85	267.23	4243.2	776.5	.820	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	3.603	574.51	573.51	273.52	459.83	801.6	1525.0	.441	1.000	1.000	2606.41 BTU/MIN
	HOT SIDE	3.603	571.70	569.04	696.22	492.81	2362.7	1645.5	.481	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	3.603	573.28	572.04	459.83	696.06	1525.0	2362.2	.738	1.000	1.000	3016.26 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	780.12	689.75	.0	.0	.282	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	3.603	568.92	567.50	492.81	585.64	1645.5	1975.1	.546	1.000	1.000	1187.76 BTU/MIN
	HOT SIDE	28.500	200.00	199.95	662.72	572.67	.0	.0	.530	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	3.603	565.06	564.62	585.64	1235.81	1975.1	4243.1	.743	1.000	1.000	8171.84 BTU/MIN
	HOT SIDE	5.631	15.26	14.85	1461.15	769.96	.0	.0	.789	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	3.603	563.44	562.21	969.90	942.10	3316.9	3220.3	.041	1.000	1.000	-348.25 BTU/MIN
	HOT SIDE	2.028	900.00	899.82	300.00	942.08	35.4	207.1	.958	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	568.917	492.808	.211	1645.475
2	.000	.000	.000	.000	42	567.500	585.637	.182	1975.131
3	.000	.000	.000	.000	43	567.356	585.637	.182	1975.129
4	.000	.000	.000	.000	44	567.356	585.637	.182	1975.129
5	900.000	300.000	16.648	35.434	45	567.213	585.637	.182	1975.126
6	899.824	942.084	2.928	207.067	46	565.056	585.637	.181	1975.088
7	878.051	942.084	2.858	207.109	47	564.621	1235.809	.086	4243.140
8	878.005	942.084	2.858	207.110	48	567.213	585.637	.182	1975.126
9	394.175	942.084	1.291	208.033	49	567.213	585.637	.000	.000
10	394.073	942.084	1.291	208.033	50	564.620	1235.845	.086	4243.268
11	174.610	942.084	.574	208.463	51	564.315	1235.845	.086	4243.261
12	200.000	662.724	.000	.000	52	564.151	1235.845	.086	4243.257
13	199.949	572.666	.000	.000	53	563.367	.000	.000	.000
14	199.949	572.666	.000	.000	54	563.671	969.897	.112	3316.921
15	199.949	572.666	.000	.000	55	563.740	1235.845	.086	4243.247
16	200.000	780.121	.000	.000	56	563.671	267.226	.386	776.534
17	200.000	780.121	.000	.000	57	563.437	969.897	.112	3316.916
18	200.000	780.121	.000	.000	58	562.207	942.105	.115	3220.261
19	199.988	689.754	.000	.000	59	561.979	942.105	.115	3220.256
20	.000	.000	.000	.000	60	174.069	942.105	.036	3211.344
21	.000	.000	.000	.000	61	160.342	1946.391	.016	6759.825
22	.000	.000	.000	.000	62	160.301	1946.391	.000	.000
23	.000	.000	.000	.000	63	34.651	1665.002	.000	.000
24	.000	.000	.000	.000	64	15.449	1461.148	.000	.000
25	.000	.000	.000	.000	65	15.265	1461.148	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.854	769.959	.000	.000
27	574.895	55.000	3.984	-45.501	67	14.700	769.959	.000	.000
28	574.645	273.516	.384	801.627	68	.000	.000	.000	.000
29	574.577	273.516	.384	801.627	69	.000	.000	.000	.000
30	574.577	273.516	.384	801.627	70	.000	750.000	.000	.000
31	574.509	273.516	.384	801.628	71	.000	741.393	.000	.000
32	573.507	459.826	.228	1525.024	72	.000	742.412	.000	.000
33	573.393	459.826	.228	1525.023	73	.000	.000	.000	.000
34	573.393	459.826	.228	1525.023	74	.000	.000	.000	.000
35	573.278	459.826	.228	1525.021	75	.000	.000	.000	.000
36	572.037	696.057	.157	2362.167	76	.000	.000	.000	.000
37	571.869	696.221	.157	2362.737	77	.000	.000	.000	.000
38	571.869	696.221	.157	2362.737	78	.000	.000	.000	.000
39	571.703	696.221	.157	2362.733	79	.000	.000	.000	.000
40	569.041	492.808	.211	1645.477	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:58:16

HYDRAULIC POWER	90.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	88.89	SPC	2.819	AMW	3.38
HYDRAULIC PUMP	35.14	LUBE PUMP	4.00	SECOND STAGE	64.25	O/F	.677		
TOTAL GEAR BOX	125.14			TOTAL TURBINE	153.14	PT OUT	14.700		

TURBINE INFORMATION

FLOW	5.880	PRESSURE	161.96	15.55	EFFICIENCY 1ST	.445	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1952.4	1457.2	EFFICIENCY 2ND	.554	A2	.2335	A4	.6096
PRESSURE RATIO	10.42	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.551	HP	153.14	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1036.13	588.26	750.00	750.00	750.06
PRESSURE IN	566.56	567.60	875.91	476.32	564.52
PRESSURE OUT	565.83	567.60	476.41	177.51	176.88
EFFECTIVE AREA	.20716	.11145	.00221	.00407	.02035
FLOW	2.270	1.604	2.375	2.375	3.505

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	3.505	574.90	574.67	55.00	270.92	-45.5	791.2	.220	1.000	1.000	2933.00 BTU/MIN
	HOT SIDE	1.236	565.93	565.83	1036.13	293.67	3547.3	882.7	.757	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	3.505	574.54	573.59	270.92	459.96	791.2	1525.5	.441	1.000	1.000	2574.22 BTU/MIN
	HOT SIDE	3.505	571.88	569.35	699.37	492.79	2373.6	1645.4	.482	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	3.505	573.37	572.19	459.96	699.35	1525.5	2373.7	.747	1.000	1.000	2973.33 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	780.34	691.34	.0	.0	.278	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	3.505	569.23	567.90	492.79	588.26	1645.4	1984.3	.557	1.000	1.000	1186.09 BTU/MIN
	HOT SIDE	28.500	200.00	199.95	664.19	574.31	.0	.0	.524	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.901	567.03	566.89	588.26	1414.01	1984.3	4871.2	.950	1.000	1.000	5486.77 BTU/MIN
	HOT SIDE	5.880	15.36	14.91	1457.21	1014.04	.0	.0	.510	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	3.505	565.65	564.69	774.43	750.06	2636.7	2551.2	.051	1.000	1.000	-299.49 BTU/MIN
	HOT SIDE	2.375	900.00	899.80	300.00	750.00	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	569.229	492.786	.212	1645.402
2	.000	.000	.000	.000	42	567.902	588.259	.181	1984.326
3	.000	.000	.000	.000	43	567.766	588.259	.181	1984.323
4	.000	.000	.000	.000	44	567.766	588.259	.181	1984.323
5	900.000	300.000	16.648	35.434	45	567.630	588.259	.181	1984.321
6	899.801	750.003	3.672	160.873	46	567.027	588.259	.181	1984.310
7	875.962	750.003	3.575	160.959	47	566.892	1414.006	.077	4871.174
8	875.911	750.003	3.575	160.959	48	567.601	588.259	.181	1984.321
9	476.413	750.003	1.943	162.413	49	566.891	588.259	.000	.000
10	476.320	750.003	1.943	162.413	50	566.892	1036.131	.105	3547.274
11	177.507	750.003	.724	163.522	51	566.657	1036.131	.105	3547.269
12	200.000	664.190	.000	.000	52	566.559	1036.131	.105	3547.266
13	199.954	574.312	.000	.000	53	565.833	.000	.000	.000
14	199.954	574.312	.000	.000	54	565.833	774.431	.137	2636.686
15	199.954	574.312	.000	.000	55	565.928	1036.131	.105	3547.252
16	200.000	780.337	.000	.000	56	565.833	293.668	.352	882.725
17	200.000	780.337	.000	.000	57	565.652	774.431	.137	2636.682
18	200.000	780.337	.000	.000	58	564.695	750.057	.142	2551.247
19	199.988	691.339	.000	.000	59	564.521	750.057	.142	2551.244
20	.000	.000	.000	.000	60	176.882	750.057	.045	2543.015
21	.000	.000	.000	.000	61	162.005	1952.448	.016	6781.662
22	.000	.000	.000	.000	62	161.964	1952.448	.000	.000
23	.000	.000	.000	.000	63	35.155	1665.002	.000	.000
24	.000	.000	.000	.000	64	15.546	1457.211	.000	.000
25	.000	.000	.000	.000	65	15.361	1457.211	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.905	1014.037	.000	.000
27	574.901	55.000	3.984	-45.501	67	14.700	1014.037	.000	.000
28	574.666	270.920	.387	791.190	68	.000	.000	.000	.000
29	574.602	270.920	.387	791.190	69	.000	.000	.000	.000
30	574.602	270.920	.387	791.190	70	.000	750.000	.000	.000
31	574.538	270.920	.387	791.191	71	.000	741.620	.000	.000
32	573.590	459.964	.228	1525.534	72	.000	742.639	.000	.000
33	573.482	459.964	.228	1525.532	73	.000	.000	.000	.000
34	573.482	459.964	.228	1525.532	74	.000	.000	.000	.000
35	573.373	459.964	.228	1525.531	75	.000	.000	.000	.000
36	572.193	699.355	.156	2373.727	76	.000	.000	.000	.000
37	572.035	699.366	.156	2373.762	77	.000	.000	.000	.000
38	572.035	699.366	.156	2373.762	78	.000	.000	.000	.000
39	571.876	699.366	.156	2373.759	79	.000	.000	.000	.000
40	569.346	492.786	.212	1645.404	80	.000	.000	.000	1.000

Computer Case 26

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:58:38

HYDRAULIC POWER	180.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	134.21	SPC	2.330	AMW	3.26
HYDRAULIC PUMP	40.29	LUBE PUMP	4.00	SECOND STAGE	114.07	O/F	.617		
TOTAL GEAR BOX	220.29			TOTAL TURBINE	248.28	PT OUT	14.700		

TURBINE INFORMATION

FLOW	8.553	PRESSURE	239.91	16.21	EFFICIENCY 1ST	.442	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.359	TEMPERATURE	1953.6	1419.7	EFFICIENCY 2ND	.501	A2	.2335	A4	.6096
PRESSURE RATIO	14.80	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.537	HP	248.28	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1193.91	556.54	855.42	855.42	855.54
PRESSURE IN	551.98	558.34	844.90	427.05	546.36
PRESSURE OUT	549.35	558.34	427.28	262.70	261.79
EFFECTIVE AREA	.16744	.00000	.00337	.00678	.03389
FLOW	3.213	.000	3.263	3.263	5.289

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	5.289	574.77	574.18	55.00	313.08	-45.5	960.7	.227	1.000	1.000	5321.90 BTU/MIN
	HOT SIDE	2.077	549.70	549.37	1193.91	400.08	4095.4	1301.2	.697	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	5.289	573.85	571.66	313.08	459.91	960.7	1525.3	.434	1.000	1.000	2986.47 BTU/MIN
	HOT SIDE	5.289	567.96	562.54	651.78	493.61	2206.9	1648.3	.467	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	5.289	571.16	568.64	459.91	651.71	1525.3	2206.7	.594	1.000	1.000	3604.04 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	782.79	674.00	.0	.0	.337	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	5.289	562.27	558.94	493.61	556.54	1648.3	1873.0	.414	1.000	1.000	1188.64 BTU/MIN
	HOT SIDE	28.500	200.00	199.91	645.69	554.60	.0	.0	.599	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	5.289	553.79	552.88	556.54	1193.90	1872.9	4095.5	.738	1.000	1.000	11755.41 BTU/MIN
	HOT SIDE	8.553	15.83	15.04	1419.69	764.50	.0	.0	.759	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	5.289	548.89	546.83	882.25	855.54	3011.9	2919.0	.046	1.000	1.000	-491.40 BTU/MIN
	HOT SIDE	3.263	900.00	899.61	300.00	855.42	35.4	186.1	.954	1.000	1.000	1 PASS PARALL

STATIOI	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	562.274	493.614	.209	1648.309
2	.000	.000	.000	.000	42	558.945	556.544	.186	1873.037
3	.000	.000	.000	.000	43	558.642	556.544	.186	1873.032
4	.000	.000	.000	.000	44	558.642	556.544	.186	1873.032
5	900.000	300.000	16.648	35.434	45	558.339	556.544	.186	1873.027
6	899.611	855.415	3.168	186.134	46	553.792	556.544	.184	1872.949
7	845.019	855.415	2.978	186.265	47	552.879	1193.905	.086	4095.473
8	844.904	855.415	2.978	186.266	48	558.339	556.544	.186	1873.027
9	427.276	855.415	1.513	187.294	49	558.339	556.544	.000	.000
10	427.049	855.415	1.512	187.295	50	552.879	1193.914	.086	4095.504
11	262.698	855.415	.932	187.729	51	552.225	1193.914	.086	4095.488
12	200.000	645.686	.000	.000	52	551.984	1193.914	.086	4095.482
13	199.912	554.604	.000	.000	53	549.352	.000	.000	.000
14	199.912	554.604	.000	.000	54	549.365	882.251	.118	3011.875
15	199.912	554.604	.000	.000	55	549.705	1193.914	.086	4095.427
16	200.000	782.790	.000	.000	56	549.365	400.077	.251	1301.160
17	200.000	782.790	.000	.000	57	548.889	882.251	.118	3011.864
18	200.000	782.790	.000	.000	58	546.828	855.541	.121	2918.958
19	199.986	674.002	.000	.000	59	546.360	855.541	.120	2918.947
20	.000	.000	.000	.000	60	261.791	855.541	.058	2912.536
21	.000	.000	.000	.000	61	239.972	1953.632	.023	6788.184
22	.000	.000	.000	.000	62	239.910	1953.632	.000	.000
23	.000	.000	.000	.000	63	51.326	1665.001	.000	.000
24	.000	.000	.000	.000	64	16.215	1419.693	.000	.000
25	.000	.000	.000	.000	65	15.834	1419.693	.000	.000
26	575.000	55.000	3.984	-45.499	66	15.037	764.501	.000	.000
27	574.774	55.000	3.984	-45.503	67	14.700	764.501	.000	.000
28	574.182	313.084	.334	960.676	68	.000	.000	.000	.000
29	574.014	313.084	.334	960.677	69	.000	.000	.000	.000
30	574.014	313.084	.334	960.677	70	.000	750.000	.000	.000
31	573.845	313.084	.334	960.677	71	.000	744.154	.000	.000
32	571.658	459.910	.227	1525.310	72	.000	745.171	.000	.000
33	571.410	459.910	.227	1525.307	73	.000	.000	.000	.000
34	571.410	459.910	.227	1525.307	74	.000	.000	.000	.000
35	571.162	459.910	.227	1525.304	75	.000	.000	.000	.000
36	568.639	651.712	.167	2206.698	76	.000	.000	.000	.000
37	568.300	651.778	.166	2206.926	77	.000	.000	.000	.000
38	568.300	651.778	.166	2206.926	78	.000	.000	.000	.000
39	567.962	651.778	.166	2206.920	79	.000	.000	.000	.000
40	562.544	493.614	.209	1648.313	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:58:58

HYDRAULIC POWER	180.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	134.29	SPC	2.385	AMW	3.39
HYDRAULIC PUMP	40.29	LUBE PUMP	4.00	SECOND STAGE	113.99	O/F	.680		
TOTAL GEAR BOX	220.29			TOTAL TURBINE	248.28	PT OUT	14.700		

TURBINE INFORMATION

FLOW	8.757	PRESSURE	241.29	16.32	EFFICIENCY 1ST	.448	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1957.0	1417.2	EFFICIENCY 2ND	.508	A2	.2335	A4	.6096
PRESSURE RATIO	14.78	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.543	HP	248.28	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1083.88	557.56	749.84	749.84	750.03
PRESSURE IN	555.47	558.73	642.85	467.10	549.65
PRESSURE OUT	552.23	558.73	467.31	264.52	263.59
EFFECTIVE AREA	.12491	.05773	.00344	.00622	.03108
FLOW	2.800	1.603	3.545	3.545	5.212

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	5.212	574.78	574.21	55.00	311.41	-45.5	954.0	.249	1.000	1.000	5208.97 BTU/MIN
	HOT SIDE	2.411	552.66	552.24	1083.88	415.21	3713.0	1358.5	.650	1.000	1.000	4 PASS COUNT.
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	5.212	573.88	571.76	311.41	459.97	954.0	1525.5	.434	1.000	1.000	2978.91 BTU/MIN
	HOT SIDE	5.212	568.16	562.89	653.83	493.72	2214.1	1648.7	.468	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	5.212	571.28	568.82	459.97	653.74	1525.5	2213.8	.600	1.000	1.000	3587.26 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	782.83	674.61	.0	.0	.335	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	5.212	562.63	559.35	493.72	557.56	1648.7	1876.6	.419	1.000	1.000	1187.84 BTU/MIN
	HOT SIDE	28.500	200.00	199.91	646.16	555.17	.0	.0	.597	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	3.609	556.64	556.19	557.56	1317.69	1876.6	4531.5	.884	1.000	1.000	9580.32 BTU/MIN
	HOT SIDE	8.757	15.94	15.10	1417.19	896.89	.0	.0	.605	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	5.212	551.83	550.05	774.51	750.03	2636.7	2550.8	.052	1.000	1.000	-447.24 BTU/MIN
	HOT SIDE	3.545	900.00	899.58	300.00	749.84	35.4	160.8	.948	1.000	1.000	1 PASS PARALL

Computer Case 26B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	562.630	493.717	.209	1648.690
2	.000	.000	.000	.000	42	559.350	557.561	.186	1876.605
3	.000	.000	.000	.000	43	559.056	557.561	.186	1876.600
4	.000	.000	.000	.000	44	559.056	557.561	.186	1876.600
5	900.000	300.000	16.648	35.434	45	558.762	557.561	.186	1876.595
6	899.585	749.842	3.673	160.835	46	556.644	557.561	.185	1876.559
7	842.970	749.842	3.442	161.038	47	556.190	1317.688	.081	4531.484
8	842.852	749.842	3.441	161.038	48	558.734	557.561	.186	1876.594
9	467.313	749.842	1.907	162.408	49	556.190	557.561	.000	.000
10	467.101	749.842	1.906	162.408	50	556.190	1083.883	.098	3713.040
11	264.522	749.842	1.079	163.177	51	555.634	1083.883	.098	3713.027
12	200.000	646.157	.000	.000	52	555.474	1083.883	.098	3713.023
13	199.914	555.166	.000	.000	53	552.232	.000	.000	.000
14	199.914	555.166	.000	.000	54	552.236	774.509	.133	2636.662
15	199.914	555.166	.000	.000	55	552.656	1083.883	.098	3712.957
16	200.000	782.831	.000	.000	56	552.236	415.206	.243	1358.541
17	200.000	782.831	.000	.000	57	551.826	774.509	.133	2636.653
18	200.000	782.831	.000	.000	58	550.048	750.030	.139	2550.840
19	199.986	674.605	.000	.000	59	549.653	750.030	.138	2550.831
20	.000	.000	.000	.000	60	263.586	750.030	.067	2544.770
21	.000	.000	.000	.000	61	241.355	1956.951	.024	6799.995
22	.000	.000	.000	.000	62	241.293	1956.951	.000	.000
23	.000	.000	.000	.000	63	51.745	1665.001	.000	.000
24	.000	.000	.000	.000	64	16.321	1417.193	.000	.000
25	.000	.000	.000	.000	65	15.940	1417.193	.000	.000
26	575.000	55.000	3.984	-45.499	66	15.097	896.891	.000	.000
27	574.780	55.000	3.984	-45.502	67	14.700	896.891	.000	.000
28	574.208	311.410	.336	953.959	68	.000	.000	.000	.000
29	574.046	311.410	.336	953.960	69	.000	.000	.000	.000
30	574.046	311.410	.336	953.960	70	.000	750.000	.000	.000
31	573.883	311.410	.336	953.960	71	.000	744.200	.000	.000
32	571.760	459.970	.227	1525.534	72	.000	745.217	.000	.000
33	571.520	459.970	.227	1525.531	73	.000	.000	.000	.000
34	571.520	459.970	.227	1525.531	74	.000	.000	.000	.000
35	571.279	459.970	.227	1525.528	75	.000	.000	.000	.000
36	568.823	653.745	.166	2213.826	76	.000	.000	.000	.000
37	568.493	653.826	.166	2214.103	77	.000	.000	.000	.000
38	568.493	653.826	.166	2214.103	78	.000	.000	.000	.000
39	568.164	653.826	.166	2214.097	79	.000	.000	.000	.000
40	562.892	493.717	.209	1648.693	80	.000	.000	.000	1.000

* CONDITION * OMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:59:26

HYDRAULIC POWER	270.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	179.96	SPC	2.186	AMW	3.33
HYDRAULIC PUMP	45.43	LUBE PUMP	4.00	SECOND STAGE	163.47	O/F	.653		
TOTAL GEAR BOX	315.43			TOTAL TURBINE	343.43	PT OUT	14.700		

TURBINE INFORMATION

FLOW	11.490	PRESSURE	319.32	17.17	EFFICIENCY 1ST	.447	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1958.7	1398.2	EFFICIENCY 2ND	.479	A2	.2335	A4	.6096
PRESSURE RATIO	18.59	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.533	HP	343.43	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1167.97	539.89	798.45	798.45	798.78
PRESSURE IN	537.17	547.94	793.66	465.14	524.35
PRESSURE OUT	528.77	547.94	465.52	350.74	349.45
EFFECTIVE AREA	.09790	.00000	.00485	.00935	.04675
FLOW	3.346	.000	4.538	4.538	6.952

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	6.952	574.61	573.53	55.00	341.36	-45.5	1073.3	.257	1.000	1.000	7778.09 BTU/MIN
	HOT SIDE	3.606	529.86	528.77	1167.97	505.68	4004.8	1691.4	.595	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	6.952	572.89	569.07	341.36	460.01	1073.3	1525.6	.428	1.000	1.000	3144.58 BTU/MIN
	HOT SIDE	6.952	562.92	553.89	618.78	492.36	2091.2	1643.6	.456	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	6.952	568.21	564.04	460.01	618.79	1525.6	2091.2	.490	1.000	1.000	3932.23 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	784.11	664.81	.0	.0	.368	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	6.952	553.41	548.98	492.36	539.89	1643.6	1814.5	.332	1.000	1.000	1187.99 BTU/MIN
	HOT SIDE	28.500	200.00	199.88	635.32	544.03	.0	.0	.639	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	6.952	540.10	538.55	539.89	1167.97	1814.4	4005.0	.732	1.000	1.000	15229.34 BTU/MIN
	HOT SIDE	11.490	16.55	15.29	1398.21	766.38	.0	.0	.736	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	6.952	527.96	525.15	824.46	798.78	2810.5	2721.1	.049	1.000	1.000	-621.35 BTU/MIN
	HOT SIDE	4.538	900.00	899.30	300.00	798.45	35.4	172.4	.950	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	553.414	492.360	.206	1643.621
2	.000	.000	.000	.000	42	548.979	539.890	.187	1814.503
3	.000	.000	.000	.000	43	548.457	539.890	.186	1814.494
4	.000	.000	.000	.000	44	548.457	539.890	.186	1814.494
5	900.000	300.000	16.648	35.434	45	547.935	539.890	.186	1814.485
6	899.297	798.450	3.332	172.382	46	540.099	539.890	.184	1814.354
7	793.884	798.450	2.946	172.678	47	538.550	1167.971	.087	4004.967
8	793.659	798.450	2.945	172.679	48	547.935	539.890	.186	1814.485
9	465.518	798.450	1.733	173.614	49	547.935	539.890	.000	.000
10	465.135	798.450	1.731	173.615	50	538.550	1167.974	.087	4004.977
11	350.741	798.450	1.307	173.967	51	537.427	1167.974	.087	4004.950
12	200.000	635.320	.000	.000	52	537.167	1167.974	.086	4004.944
13	199.878	544.025	.000	.000	53	528.770	.000	.000	.000
14	199.878	544.025	.000	.000	54	528.773	824.465	.120	2810.510
15	199.878	544.025	.000	.000	55	529.861	1167.974	.085	4004.768
16	200.000	784.106	.000	.000	56	528.773	505.676	.192	1691.410
17	200.000	784.106	.000	.000	57	527.960	824.465	.120	2810.492
18	200.000	784.106	.000	.000	58	525.147	798.784	.122	2721.116
19	199.986	664.811	.000	.000	59	524.347	798.784	.121	2721.098
20	.000	.000	.000	.000	60	349.452	798.784	.082	2717.225
21	.000	.000	.000	.000	61	319.402	1958.709	.031	6808.173
22	.000	.000	.000	.000	62	319.320	1958.709	.000	.000
23	.000	.000	.000	.000	63	67.780	1665.000	.000	.000
24	.000	.000	.000	.000	64	17.173	1398.206	.000	.000
25	.000	.000	.000	.000	65	16.549	1398.206	.000	.000
26	575.000	55.000	3.984	-45.499	66	15.287	766.376	.000	.000
27	574.609	55.000	3.984	-45.505	67	14.700	766.376	.000	.000
28	573.527	341.364	.306	1073.308	68	.000	.000	.000	.000
29	573.209	341.364	.306	1073.308	69	.000	.000	.000	.000
30	573.209	341.364	.306	1073.308	70	.000	750.000	.000	.000
31	572.891	341.364	.306	1073.307	71	.000	745.516	.000	.000
32	569.071	460.005	.226	1525.628	72	.000	746.532	.000	.000
33	568.641	460.005	.226	1525.623	73	.000	.000	.000	.000
34	568.641	460.005	.226	1525.623	74	.000	.000	.000	.000
35	568.211	460.005	.226	1525.617	75	.000	.000	.000	.000
36	564.043	618.787	.173	2091.236	76	.000	.000	.000	.000
37	563.481	618.779	.173	2091.197	77	.000	.000	.000	.000
38	563.481	618.779	.173	2091.197	78	.000	.000	.000	.000
39	562.918	618.779	.173	2091.187	79	.000	.000	.000	.000
40	553.886	492.360	.206	1643.628	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 13:59:59

HYDRAULIC POWER	270.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	180.02	SPC	2.210 AMW 3.39
HYDRAULIC PUMP	45.43	LUBE PUMP	4.00	SECOND STAGE	163.41	O/F	.682
TOTAL GEAR BOX	315.43			TOTAL TURBINE	343.43	PT OUT	14.700

TURBINE INFORMATION

FLOW	11.616	PRESSURE	320.19	17.25	EFFICIENCY 1ST	.450	A1	.1517	A3 .5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1960.2	1397.0	EFFICIENCY 2ND	.482	A2	.2335	A4 .6096
PRESSURE RATIO	18.56	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.536	HP	343.43	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1116.97	540.29	749.58	749.58	749.97
PRESSURE IN	540.63	548.24	792.21	478.04	527.23
PRESSURE OUT	531.28	548.24	478.41	351.07	349.63
EFFECTIVE AREA	.08111	.02684	.00492	.00893	.04467
FLOW	3.002	1.188	4.711	4.711	6.905

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	6.905	574.61	573.55	55.00	340.59	-45.5	1070.2	.269	1.000	1.000	7704.74 BTU/MIN
	HOT SIDE	3.904	532.51	531.28	1116.97	511.24	3827.5	1711.5	.570	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	6.905	572.92	569.15	340.59	460.03	1070.2	1525.7	.428	1.000	1.000	3145.27 BTU/MIN
	HOT SIDE	6.905	563.08	554.16	619.73	492.43	2094.5	1643.9	.456	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	6.905	568.31	564.19	460.03	619.79	1525.7	2094.7	.493	1.000	1.000	3929.45 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	784.11	664.93	.0	.0	.368	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	6.905	553.69	549.29	492.43	540.29	1643.9	1815.9	.334	1.000	1.000	1187.93 BTU/MIN
	HOT SIDE	28.500	200.00	199.88	635.51	544.24	.0	.0	.638	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	5.718	542.96	541.86	540.29	1236.76	1815.8	4245.9	.813	1.000	1.000	13895.19 BTU/MIN
	HOT SIDE	11.616	16.63	15.33	1396.99	827.22	.0	.0	.665	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	6.905	530.53	527.95	774.53	749.97	2636.3	2550.2	.052	1.000	1.000	-594.51 BTU/MIN
	HOT SIDE	4.711	900.00	899.28	300.00	749.58	35.4	160.8	.947	1.000	1.000	1 PASS PARALL

Computer Case 27B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	553.692	492.430	.206	1643.880
2	.000	.000	.000	.000	42	549.288	540.287	.187	1815.907
3	.000	.000	.000	.000	43	548.774	540.287	.186	1815.899
4	.000	.000	.000	.000	44	548.774	540.287	.186	1815.899
5	900.000	300.000	16.648	35.434	45	548.259	540.287	.186	1815.890
6	899.279	749.580	3.673	160.774	46	542.958	540.287	.185	1815.801
7	792.435	749.580	3.237	161.159	47	541.865	1236.760	.082	4245.941
8	792.214	749.580	3.236	161.160	48	548.244	540.287	.186	1815.890
9	478.409	749.580	1.953	162.308	49	541.865	540.287	.000	.000
10	478.043	749.580	1.952	162.310	50	541.865	1116.973	.092	3827.745
11	351.073	749.580	1.433	162.794	51	540.827	1116.973	.092	3827.720
12	200.000	635.508	.000	.000	52	540.630	1116.973	.092	3827.716
13	199.880	544.238	.000	.000	53	531.277	.000	.000	.000
14	199.880	544.238	.000	.000	54	531.277	774.529	.128	2636.276
15	199.880	544.238	.000	.000	55	532.514	1116.973	.091	3827.523
16	200.000	784.113	.000	.000	56	531.277	511.240	.191	1711.521
17	200.000	784.113	.000	.000	57	530.530	774.529	.128	2636.260
18	200.000	784.113	.000	.000	58	527.955	749.972	.133	2550.167
19	199.986	664.927	.000	.000	59	527.233	749.972	.133	2550.152
20	.000	.000	.000	.000	60	349.827	749.972	.089	2546.408
21	.000	.000	.000	.000	61	320.269	1960.248	.031	6813.768
22	.000	.000	.000	.000	62	320.187	1960.248	.000	.000
23	.000	.000	.000	.000	63	68.043	1664.999	.000	.000
24	.000	.000	.000	.000	64	17.251	1396.988	.000	.000
25	.000	.000	.000	.000	65	16.627	1396.988	.000	.000
26	575.000	55.000	3.984	-45.499	66	15.334	827.217	.000	.000
27	574.614	55.000	3.984	-45.505	67	14.700	827.217	.000	.000
28	573.548	340.591	.307	1070.241	68	.000	.000	.000	.000
29	573.235	340.591	.307	1070.240	69	.000	.000	.000	.000
30	573.235	340.591	.307	1070.240	70	.000	750.000	.000	.000
31	572.923	340.591	.307	1070.240	71	.000	745.522	.000	.000
32	569.154	460.029	.226	1525.715	72	.000	746.538	.000	.000
33	568.730	460.029	.226	1525.710	73	.000	.000	.000	.000
34	568.730	460.029	.226	1525.710	74	.000	.000	.000	.000
35	568.306	460.029	.226	1525.704	75	.000	.000	.000	.000
36	564.188	619.786	.173	2094.739	76	.000	.000	.000	.000
37	563.633	619.726	.173	2094.520	77	.000	.000	.000	.000
38	563.633	619.726	.173	2094.520	78	.000	.000	.000	.000
39	563.077	619.726	.173	2094.510	79	.000	.000	.000	.000
40	554.158	492.430	.206	1643.887	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 14100:19

HYDRAULIC POWER	350.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	220.83	SPC	2.116	AMW	3.38
HYDRAULIC PUMP	50.00	LUBE PUMP	4.00	SECOND STAGE	207.17	O/F	.676		
TOTAL GEAR BOX	400.00			TOTAL TURBINE	428.00	PT OUT	14.700		

TURBINE INFORMATION

FLOW	14.108	PRESSURE	389.75	18.15	EFFICIENCY 1ST	.451	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1962.2	1386.2	EFFICIENCY 2ND	.467	A2	.2335	A4	.6096
PRESSURE RATIO	21.47	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.530	HP	428.00	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1151.55	529.92	761.52	761.52	762.13
PRESSURE IN	520.15	535.83	723.86	476.61	494.88
PRESSURE OUT	500.67	535.83	477.16	427.58	426.05
EFFECTIVE AREA	.05881	.00000	.00673	.01573	.07863
FLOW	3.035	.000	5.692	5.692	8.417

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	8.417	574.43	572.79	55.00	360.11	-45.5	1147.1	.278	1.000	1.000	10037.42 BTU/MIN
	HOT SIDE	5.382	503.30	500.77	1151.55	581.46	3947.0	1959.3	.520	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	8.417	571.80	566.18	360.11	460.02	1147.1	1525.6	.423	1.000	1.000	3186.22 BTU/MIN
	HOT SIDE	8.417	557.38	544.48	596.31	490.71	2012.4	1637.5	.447	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	8.417	564.91	559.00	460.02	596.31	1525.6	2012.4	.420	1.000	1.000	4096.91 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	784.88	660.31	.0	.0	.383	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	8.417	543.78	537.36	490.71	529.92	1637.5	1778.6	.283	1.000	1.000	1187.87 BTU/MIN
	HOT SIDE	28.500	200.00	199.85	629.35	537.62	.0	.0	.662	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	8.417	524.30	522.03	529.92	1151.55	1778.4	3947.5	.726	1.000	1.000	18255.91 BTU/MIN
	HOT SIDE	14.108	17.28	15.56	1386.17	769.50	.0	.0	.720	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	8.417	499.57	496.05	787.02	762.13	2679.3	2592.1	.051	1.000	1.000	-734.55 BTU/MIN
	HOT SIDE	5.692	900.00	898.94	300.00	761.52	35.4	163.6	.948	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	543.778	490.715	.203	1637.503
2	.000	.000	.000	.000	42	537.363	529.916	.186	1778.638
3	.000	.000	.000	.000	43	536.597	529.916	.186	1778.625
4	.000	.000	.000	.000	44	536.597	529.916	.186	1778.625
5	900.000	300.000	16.648	35.434	45	535.829	529.916	.186	1778.613
6	898.944	761.524	3.589	163.612	46	524.305	529.916	.182	1778.424
7	724.226	761.524	2.892	164.215	47	522.033	1151.549	.086	3947.476
8	723.865	761.524	2.891	164.217	48	535.829	529.916	.186	1778.613
9	477.158	761.524	1.906	165.067	49	535.829	529.916	.000	.000
10	476.610	761.524	1.904	165.069	50	522.034	1151.549	.086	3947.477
11	427.581	761.524	1.708	165.237	51	520.369	1151.549	.085	3947.437
12	200.000	629.349	.000	.000	52	520.152	1151.549	.085	3947.432
13	199.851	537.624	.000	.000	53	500.667	.000	.000	.000
14	199.851	537.624	.000	.000	54	500.769	787.019	.119	2679.363
15	199.851	537.624	.000	.000	55	503.299	1151.549	.083	3947.029
16	200.000	784.877	.000	.000	56	500.769	581.464	.162	1959.332
17	200.000	784.877	.000	.000	57	499.567	787.019	.118	2679.336
18	200.000	784.877	.000	.000	58	496.045	762.125	.123	2592.061
19	199.985	660.315	.000	.000	59	494.882	762.125	.122	2592.036
20	.000	.000	.000	.000	60	426.046	762.125	.106	2590.588
21	.000	.000	.000	.000	61	389.853	1962.209	.038	6822.658
22	.000	.000	.000	.000	62	389.753	1962.209	.000	.000
23	.000	.000	.000	.000	63	82.257	1664.999	.000	.000
24	.000	.000	.000	.000	64	18.153	1386.168	.000	.000
25	.000	.000	.000	.000	65	17.282	1386.168	.000	.000
26	575.000	55.000	3.984	-45.499	66	15.560	769.499	.000	.000
27	574.427	55.000	3.984	-45.507	67	14.700	769.499	.000	.000
28	572.787	360.106	.290	1147.075	68	.000	.000	.000	.000
29	572.295	360.106	.290	1147.073	69	.000	.000	.000	.000
30	572.295	360.106	.290	1147.073	70	.000	750.000	.000	.000
31	571.803	360.106	.290	1147.071	71	.000	746.314	.000	.000
32	566.175	460.018	.225	1525.637	72	.000	747.329	.000	.000
33	565.542	460.018	.225	1525.629	73	.000	.000	.000	.000
34	565.542	460.018	.225	1525.629	74	.000	.000	.000	.000
35	564.908	460.018	.225	1525.621	75	.000	.000	.000	.000
36	558.997	596.313	.177	2012.390	76	.000	.000	.000	.000
37	558.191	596.313	.177	2012.378	77	.000	.000	.000	.000
38	558.191	596.313	.177	2012.378	78	.000	.000	.000	.000
39	557.382	596.313	.176	2012.363	79	.000	.000	.000	.000
40	544.479	490.715	.203	1637.513	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 07 DEC 72 14:00:32

HYDRAULIC POWER	350.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	220.85	SPC	2.122	AMW	3.39
HYDRAULIC PUMP	50.00	LUBE PUMP	4.00	SECOND STAGE	207.15	O/F	.684		
TOTAL GEAR BOX	400.00			TOTAL TURBINE	428.00	PT OUT	14.700		

TURBINE INFORMATION

FLOW	14.147	PRESSURE	390.02	18.18	EFFICIENCY 1ST	.452	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1962.6	1385.9	EFFICIENCY 2ND	.468	A2	.2335	A4	.6096
PRESSURE RATIO	21.45	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.531	HP	428.00	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1138.83	530.00	749.36	749.36	749.99
PRESSURE IN	521.69	535.95	723.35	478.53	496.01
PRESSURE OUT	501.75	535.95	479.07	427.69	426.17
EFFECTIVE AREA	.05522	.00675	.00676	.01546	.07731
FLOW	2.903	.416	5.744	5.744	8.403

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	8.403	574.43	572.79	55.00	359.91	-45.5	1146.3	.281	1.000	1.000	10014.36 BTU/MIN
	HOT SIDE	5.500	504.37	501.75	1138.83	582.34	3902.8	1962.4	.513	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	8.403	571.81	566.21	359.91	460.01	1146.3	1525.6	.423	1.000	1.000	3187.23 BTU/MIN
	HOT SIDE	8.403	557.44	544.58	596.53	490.73	2013.1	1637.6	.447	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	8.403	564.94	559.05	460.01	596.55	1525.6	2013.2	.420	1.000	1.000	4097.25 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	784.88	660.31	.0	.0	.383	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	8.403	543.88	537.48	490.73	530.00	1637.6	1778.9	.283	1.000	1.000	1187.92 BTU/MIN
	HOT SIDE	28.500	200.00	199.85	629.38	537.66	.0	.0	.662	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	7.986	525.58	523.51	530.00	1170.56	1778.7	4013.6	.748	1.000	1.000	17848.43 BTU/MIN
	HOT SIDE	14.147	17.31	15.58	1385.86	784.59	.0	.0	.703	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	8.403	500.58	497.14	774.58	749.99	2635.8	2549.6	.052	1.000	1.000	-724.60 BTU/MIN
	HOT SIDE	5.744	900.00	898.94	300.00	749.36	35.4	160.7	.947	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	543.877	490.728	.203	1637.551
2	.000	.000	.000	.000	42	537.484	529.997	.186	1778.927
3	.000	.000	.000	.000	43	536.720	529.997	.186	1778.914
4	.000	.000	.000	.000	44	536.720	529.997	.186	1778.914
5	900.000	300.000	16.648	35.434	45	535.956	529.997	.186	1778.902
6	898.940	749.362	3.673	160.724	46	525.580	529.997	.182	1778.732
7	723.709	749.362	2.957	161.363	47	523.513	1170.557	.084	4013.595
8	723.350	749.362	2.956	161.364	48	535.954	529.997	.186	1778.902
9	479.069	749.362	1.956	162.256	49	523.513	529.997	.000	.000
10	478.525	749.362	1.954	162.258	50	523.513	1138.826	.087	3903.281
11	427.692	749.362	1.747	162.442	51	521.883	1138.826	.087	3903.242
12	200.000	629.379	.000	.000	52	521.688	1138.826	.087	3903.237
13	199.852	537.657	.000	.000	53	501.748	.000	.000	.000
14	199.852	537.657	.000	.000	54	501.748	774.563	.121	2635.822
15	199.852	537.657	.000	.000	55	504.366	1138.826	.084	3902.824
16	200.000	784.878	.000	.000	56	501.748	582.336	.162	1962.404
17	200.000	784.878	.000	.000	57	500.577	774.583	.121	2635.797
18	200.000	784.878	.000	.000	58	497.143	749.985	.125	2549.561
19	199.985	660.312	.000	.000	59	496.010	749.985	.125	2549.537
20	.000	.000	.000	.000	60	426.170	749.985	.108	2548.085
21	.000	.000	.000	.000	61	390.118	1962.592	.038	6824.109
22	.000	.000	.000	.000	62	390.018	1962.592	.000	.000
23	.000	.000	.000	.000	63	82.337	1665.000	.000	.000
24	.000	.000	.000	.000	64	16.179	1385.858	.000	.000
25	.000	.000	.000	.000	65	17.308	1385.858	.000	.000
26	575.000	55.000	3.984	-45.499	66	15.577	784.588	.000	.000
27	574.429	55.000	3.984	-45.507	67	14.700	784.588	.000	.000
28	572.795	359.910	.290	1146.309	68	.000	.000	.000	.000
29	572.305	359.910	.290	1146.307	69	.000	.000	.000	.000
30	572.305	359.910	.290	1146.307	70	.000	750.000	.000	.000
31	571.814	359.910	.290	1146.305	71	.000	746.314	.000	.000
32	566.206	460.013	.225	1525.621	72	.000	747.329	.000	.000
33	565.575	460.013	.225	1525.613	73	.000	.000	.000	.000
34	565.575	460.013	.225	1525.613	74	.000	.000	.000	.000
35	564.943	460.013	.225	1525.605	75	.000	.000	.000	.000
36	559.050	596.550	.177	2013.222	76	.000	.000	.000	.000
37	558.246	596.532	.176	2013.146	77	.000	.000	.000	.000
38	558.246	596.532	.176	2013.146	78	.000	.000	.000	.000
39	557.440	596.532	.176	2013.132	79	.000	.000	.000	.000
40	544.576	490.728	.203	1637.561	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 15 DEC 72 08:35:26

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	28.26	SPC	3.625	AMW	3.00
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	29.74	O/F	.486		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	.282		

TURBINE INFORMATION

FLOW	1.813	PRESSURE	52.66	1.48	EFFICIENCY 1ST	.417	A1	.1517	A3 .5538
SPECIFIC HEAT RATIO	1.364	TEMPERATURE	1931.0	1385.1	EFFICIENCY 2ND	.378	A2	.2335	A4 .6096
PRESSURE RATIO	35.69	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.460	MP	58.00	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1219.32	706.39	1060.93	1060.93	1060.93
PRESSURE IN	573.71	574.12	897.88	347.20	573.43
PRESSURE OUT	573.71	574.12	347.21	56.68	56.74
EFFECTIVE AREA	1.00000	.00000	.00064	.00166	.00829
FLOW	1.081	.000	.593	.593	1.220

HX NO.		FLOW	IN	PRESSURE OUT	IN	TEMP OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.220	574.99	574.97	55.00	160.26	-45.5	379.8	.090	1.000	1.000	518.64 BTU/MIN
	HOT SIDE	.138	573.73	573.73	1219.32	70.73	4185.2	21.1	.986	1.000	1.000	4 PASS COUNT

HX NO.		FLOW	IN	PRESSURE OUT	IN	TEMP OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.220	574.96	574.86	160.26	409.80	379.8	1338.3	.450	1.000	1.000	1169.05 BTU/MIN
	HOT SIDE	1.220	574.65	574.34	714.80	432.64	2427.9	1424.2	.509	1.000	1.000	6 PASS PARALL

HX NO.		FLOW	IN	PRESSURE OUT	IN	TEMP OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.220	574.84	574.69	409.80	714.94	1338.3	2428.4	.950	1.000	1.000	1329.46 BTU/MIN
	HOT SIDE	57.000	200.00	199.98	731.13	690.69	.0	.0	.126	1.000	1.000	4 PASS COUNT

HX NO.		FLOW	IN	PRESSURE OUT	IN	TEMP OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.220	574.32	574.16	432.64	706.39	1424.2	2398.4	.879	1.000	1.000	1188.12 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	743.92	659.99	.0	.0	.270	1.000	1.000	4 PASS COUNT

HX NO.		FLOW	IN	PRESSURE OUT	IN	TEMP OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.220	573.83	573.77	706.39	1219.32	2398.4	4185.2	.756	1.000	1.000	2179.22 BTU/MIN
	HOT SIDE	1.813	1.28	.63	1385.06	811.93	.0	.0	.844	1.000	1.000	2 PASS COUNT

HX NO.		FLOW	IN	PRESSURE OUT	IN	TEMP OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.220	573.70	573.46	1089.01	1060.93	3731.3	3633.7	.036	1.000	1.000	-119.05 BTU/MIN
	HOT SIDE	.593	900.00	899.97	300.00	1060.93	35.4	235.8	.964	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.323	432.637	.243	1424.230
2	.000	.000	.000	.000	42	574.160	706.389	.155	2398.417
3	.000	.000	.000	.000	43	574.141	706.389	.155	2398.416
4	.000	.000	.000	.000	44	574.141	706.389	.155	2398.416
5	900.000	300.000	16.648	35.434	45	574.121	706.389	.155	2398.416
6	899.975	1060.932	2.597	235.773	46	573.832	706.389	.155	2398.410
7	897.888	1060.932	2.591	235.775	47	573.774	1219.316	.088	4185.241
8	897.883	1060.932	2.591	235.775	48	574.121	706.389	.155	2398.416
9	347.211	1060.932	1.011	236.412	49	574.121	706.389	.000	.000
10	347.200	1060.932	1.011	236.412	50	573.774	1219.319	.088	4185.250
11	56.880	1060.932	.166	236.758	51	573.740	1219.319	.088	4185.249
12	200.000	743.915	.000	.000	52	573.713	1219.319	.088	4185.249
13	199.994	659.990	.000	.000	53	573.705	.000	.000	.000
14	199.994	659.990	.000	.000	54	573.728	1089.006	.101	3731.269
15	199.994	659.990	.000	.000	55	573.729	1219.319	.088	4185.249
16	200.000	731.133	.000	.000	56	573.728	70.730	2.964	21.095
17	200.000	731.133	.000	.000	57	573.698	1089.006	.101	3731.268
18	200.000	731.133	.000	.000	58	573.457	1060.932	.104	3633.653
19	199.982	690.694	.000	.000	59	573.428	1060.932	.104	3633.652
20	.000	.000	.000	.000	60	56.735	1060.932	.010	3621.481
21	.000	.000	.000	.000	61	52.678	1931.035	.005	6700.618
22	.000	.000	.000	.000	62	52.664	1931.035	.000	.000
23	.000	.000	.000	.000	63	11.706	1665.002	.000	.000
24	.000	.000	.000	.000	64	1.475	1385.056	.000	.000
25	.000	.000	.000	.000	65	1.276	1385.056	.000	.000
26	575.000	55.000	3.984	-45.499	66	.629	811.935	.000	.000
27	574.988	55.000	3.984	-45.500	67	.282	.000	.000	.000
28	574.970	160.255	.683	379.752	68	.000	.000	.000	.000
29	574.966	160.255	.683	379.752	69	.000	.000	.000	.000
30	574.966	160.255	.683	379.752	70	.000	460.000	.000	.000
31	574.961	160.255	.683	379.752	71	.000	690.694	.000	.000
32	574.863	409.797	.256	1338.301	72	.000	691.758	.000	.000
33	574.851	409.797	.256	1338.301	73	.000	.000	.000	.000
34	574.851	409.797	.256	1338.301	74	.000	.000	.000	.000
35	574.839	409.797	.256	1338.301	75	.000	.000	.000	.000
36	574.688	714.936	.153	2428.380	76	.000	.000	.000	.000
37	574.668	714.796	.153	2427.890	77	.000	.000	.000	.000
38	574.668	714.796	.153	2427.890	78	.000	.000	.000	.000
39	574.649	714.796	.153	2427.890	79	.000	.000	.000	.000
40	574.335	432.637	.243	1424.230	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 15 DEC 72 08:35:38

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	28.38	SPC	3.903	AMW	3.37
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	29.62	O/F	.670		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	.338		

TURBINE INFORMATION

FLOW	1.952	PRESSURE	53.70	1.63	EFFICIENCY 1ST	.435	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1940.7	1377.2	EFFICIENCY 2ND	.403	A2	.2335	A4	.6096
PRESSURE RATIO	32.98	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.482	HP	58.00	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	875.09	707.28	750.00	750.00	750.00
PRESSURE IN	574.15	574.20	897.39	479.19	573.95
PRESSURE OUT	574.14	574.19	479.20	58.81	58.60
EFFECTIVE AREA	1.00000	.48307	.00071	.00133	.00667
FLOW	1.021	.876	.783	.783	1.168

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.168	574.99	574.98	55.00	139.64	-45.5	311.6	.103	1.000	1.000	417.26 BTU/MIN
	HOT SIDE	.147	574.16	574.15	875.09	73.40	2987.5	36.6	.978	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.168	574.97	574.88	139.64	397.25	311.6	1290.6	.447	1.000	1.000	1143.87 BTU/MIN
	HOT SIDE	1.168	574.69	574.40	715.43	422.13	2430.1	1384.9	.509	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.168	574.86	574.72	397.25	715.43	1290.6	2430.1	.953	1.000	1.000	1331.47 BTU/MIN
	HOT SIDE	57.000	200.00	199.98	731.17	690.72	.0	.0	.121	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.168	574.39	574.24	422.13	707.28	1384.9	2401.5	.886	1.000	1.000	1187.95 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	743.83	660.00	.0	.0	.261	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.293	574.19	574.19	707.28	1377.09	2401.5	4741.3	****	1.000	1.000	684.92 BTU/MIN
	HOT SIDE	1.952	1.44	.75	1377.20	1210.51	.0	.0	.249	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.168	574.13	573.97	774.15	750.00	2635.9	2551.2	.051	1.000	1.000	-98.88 BTU/MIN
	HOT SIDE	.783	900.00	899.97	300.00	750.00	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

Computer Case 29B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.394	422.129	.249	1384.855
2	.000	.000	.000	.000	42	574.245	707.282	.155	2401.548
3	.000	.000	.000	.000	43	574.227	707.282	.155	2401.548
4	.000	.000	.000	.000	44	574.227	707.282	.155	2401.548
5	900.000	300.000	16.648	35.434	45	574.209	707.282	.155	2401.547
6	899.969	750.000	3.673	160.871	46	574.192	707.282	.155	2401.547
7	897.395	750.000	3.663	160.881	47	574.186	1377.093	.080	4741.268
8	897.389	750.000	3.663	160.881	48	574.199	707.282	.155	2401.547
9	479.197	750.000	1.955	162.402	49	574.186	707.282	.000	.000
10	479.187	750.000	1.955	162.402	50	574.186	875.092	.124	2987.549
11	58.805	750.000	.240	163.979	51	574.164	875.092	.124	2987.548
12	200.000	743.826	.000	.000	52	574.147	875.092	.124	2987.548
13	199.994	660.000	.000	.000	53	574.142	.000	.000	.000
14	199.994	660.000	.000	.000	54	574.155	774.147	.139	2635.869
15	199.994	660.000	.000	.000	55	574.155	875.092	.124	2987.548
16	200.000	731.166	.000	.000	56	574.155	73.396	2.745	36.574
17	200.000	731.166	.000	.000	57	574.135	774.147	.139	2635.868
18	200.000	731.166	.000	.000	58	573.972	750.000	.144	2551.245
19	199.982	690.719	.000	.000	59	573.953	750.000	.144	2551.244
20	.000	.000	.000	.000	60	58.602	750.000	.015	2540.288
21	.000	.000	.000	.000	61	53.714	1940.682	.005	6735.631
22	.000	.000	.000	.000	62	53.700	1940.682	.000	.000
23	.000	.000	.000	.000	63	12.004	1665.000	.000	.000
24	.000	.000	.000	.000	64	1.628	1377.196	.000	.000
25	.000	.000	.000	.000	65	1.443	1377.196	.000	.000
26	575.000	55.000	3.984	-45.499	66	.754	1210.514	.000	.000
27	574.989	55.000	3.984	-45.500	67	.338	.000	.000	.000
28	574.975	139.638	.807	311.606	68	.000	.000	.000	.000
29	574.972	139.638	.807	311.606	69	.000	.000	.000	.000
30	574.972	139.638	.807	311.606	70	.000	460.000	.000	.000
31	574.968	139.638	.807	311.606	71	.000	690.719	.000	.000
32	574.883	397.249	.264	1290.573	72	.000	691.783	.000	.000
33	574.873	397.249	.264	1290.573	73	.000	.000	.000	.000
34	574.873	397.249	.264	1290.573	74	.000	.000	.000	.000
35	574.862	397.249	.264	1290.573	75	.000	.000	.000	.000
36	574.724	715.426	.153	2430.099	76	.000	.000	.000	.000
37	574.706	715.425	.153	2430.095	77	.000	.000	.000	.000
38	574.706	715.425	.153	2430.095	78	.000	.000	.000	.000
39	574.688	715.425	.153	2430.095	79	.000	.000	.000	.000
40	574.405	422.129	.249	1384.855	80	.000	.000	.000	1.000

Computer Case 30

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 15 DEC 72 08:35:52

HYDRAULIC POWER	5.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	30.82	SPC	3.490	AMW	321
HYDRAULIC PUMP	30.29	LUBE PUMP	4.00	SECOND STAGE	32.47	O/F	.591		
TOTAL GEAR BOX	35.29			TOTAL TURBINE	63.29	PT OUT	.304		

TURBINE INFORMATION

FLOW	2.053	PRESSURE	57.78	1.60	EFFICIENCY 1ST	.428	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.360	TEMPERATURE	1937.5	1377.9	EFFICIENCY 2ND	.389	A2	.2335	A4	.6096
PRESSURE RATIO	36.03	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.471	HP	63.29	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1232.04	705.08	883.58	883.58	883.58
PRESSURE IN	573.56	574.00	897.09	422.07	573.20
PRESSURE OUT	573.23	574.00	422.09	63.08	62.88
EFFECTIVE AREA	.13228	.00000	.00075	.00160	.00801
FLOW	.892	.000	.763	.763	1.290

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.290	574.99	574.95	55.00	322.97	-45.5	1000.2	.228	1.000	1.000	1348.93 BTU/MIN
	HOT SIDE	.398	573.48	573.48	1232.04	188.20	4230.1	475.0	.887	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.290	574.92	574.78	322.97	438.65	1000.2	1446.6	.471	1.000	1.000	575.91 BTU/MIN
	HOT SIDE	1.290	574.56	574.24	568.43	445.71	1914.9	1472.9	.500	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.290	574.75	574.60	438.65	568.42	1446.6	1914.9	.893	1.000	1.000	604.07 BTU/MIN
	HOT SIDE	57.000	200.00	199.53	584.02	563.03	.0	.0	.144	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.290	574.23	574.04	445.71	705.08	1472.9	2393.8	.869	1.000	1.000	1188.03 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	744.02	660.00	.0	.0	.282	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.290	573.68	573.61	705.08	1232.04	2393.8	4230.1	.783	1.000	1.000	2368.75 BTU/MIN
	HOT SIDE	2.053	1.39	.68	1377.93	828.02	.0	.0	.817	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.290	573.45	573.23	910.36	883.58	3110.2	3017.0	.044	1.000	1.000	-120.12 BTU/MIN
	HOT SIDE	.763	900.00	899.97	300.00	883.58	35.4	192.9	.956	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.227	445.705	.236	1472.863
2	.000	.000	.000	.000	42	574.044	705.080	.155	2393.827
3	.000	.000	.000	.000	43	574.023	705.080	.155	2393.826
4	.000	.000	.000	.000	44	574.023	705.080	.155	2393.826
5	900.000	300.000	16.648	35.434	45	574.001	705.080	.155	2393.826
6	899.967	883.582	3.091	192.936	46	573.677	705.080	.155	2393.819
7	897.091	883.582	3.081	192.943	47	573.614	1232.043	.087	4230.086
8	897.085	883.582	3.081	192.943	48	574.001	705.080	.155	2393.826
9	422.087	883.582	1.458	194.024	49	574.001	705.080	.000	.000
10	422.074	883.582	1.458	194.024	50	573.614	1232.043	.087	4230.086
11	63.082	883.582	.219	194.880	51	573.575	1232.043	.087	4230.085
12	200.000	744.016	.000	.000	52	573.557	1232.043	.087	4230.084
13	199.994	659.999	.000	.000	53	573.233	.000	.000	.000
14	199.994	659.999	.000	.000	54	573.476	910.364	.120	3110.164
15	199.994	659.999	.000	.000	55	573.484	1232.043	.087	4230.083
16	200.000	584.024	.000	.000	56	573.476	188.195	.570	475.037
17	200.000	584.024	.000	.000	57	573.448	910.364	.120	3110.164
18	200.000	584.024	.000	.000	58	573.226	883.582	.123	3017.043
19	199.535	563.034	.000	.000	59	573.199	883.582	.123	3017.043
20	.000	.000	.000	.000	60	62.877	883.582	.014	3005.437
21	.000	.000	.000	.000	61	57.797	1937.524	.006	6724.209
22	.000	.000	.000	.000	62	57.782	1937.524	.000	.000
23	.000	.000	.000	.000	63	12.859	1665.000	.000	.000
24	.000	.000	.000	.000	64	1.604	1377.935	.000	.000
25	.000	.000	.000	.000	65	1.385	1377.935	.000	.000
26	575.000	55.000	3.984	-45.499	66	.680	828.023	.000	.000
27	574.987	55.000	3.984	-45.500	67	.304	.000	.000	.000
28	574.945	322.972	.325	1000.198	68	.000	.000	.000	.000
29	574.935	322.972	.325	1000.198	69	.000	.000	.000	.000
30	574.935	322.972	.325	1000.198	70	.000	460.000	.000	.000
31	574.925	322.972	.325	1000.198	71	.000	537.276	.000	.000
32	574.778	438.649	.240	1446.649	72	.000	538.506	.000	.000
33	574.764	438.649	.240	1446.649	73	.000	.000	.000	.000
34	574.764	438.649	.240	1446.649	74	.000	.000	.000	.000
35	574.750	438.649	.240	1446.649	75	.000	.000	.000	.000
36	574.597	568.422	.188	1914.930	76	.000	.000	.000	.000
37	574.579	568.426	.188	1914.943	77	.000	.000	.000	.000
38	574.579	568.426	.188	1914.943	78	.000	.000	.000	.000
39	574.561	568.426	.188	1914.943	79	.000	.000	.000	.000
40	574.242	445.705	.236	1472.863	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 15 DEC 72 08:35:57

HYDRAULIC POWER	5.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	30.88	SPC	3.600	AMW	3.37
HYDRAULIC PUMP	30.29	LUBE PUMP	4.00	SECOND STAGE	32.41	O/F	.671		
TOTAL GEAR BOX	35.29			TOTAL TURBINE	63.29	PT OUT	.332		

TURBINE INFORMATION

FLOW	2.117	PRESSURE	58.27	1.68	EFFICIENCY 1ST	.436	A1	.1517	A3 .5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1941.5	1374.7	EFFICIENCY 2ND	.399	A2	.2335	A4 .6096
PRESSURE RATIO	34.77	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.480	HP	63.29	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1086.21	705.52	749.99	749.99	749.99
PRESSURE IN	573.86	574.04	896.93	479.21	573.53
PRESSURE OUT	573.76	573.91	479.22	63.81	63.59
EFFECTIVE AREA	.20084	.08903	.00077	.00145	.00724
FLOW	.819	.512	.850	.850	1.267

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.267	574.99	574.95	55.00	315.78	-45.5	971.5	.253	1.000	1.000	1288.86 BTU/MIN
	HOT SIDE	.449	573.77	573.76	1086.21	204.68	3721.6	533.8	.855	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.267	574.93	574.79	315.78	434.40	971.5	1430.9	.471	1.000	1.000	582.16 BTU/MIN
	HOT SIDE	1.267	574.58	574.27	567.80	441.71	1912.7	1458.0	.500	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.267	574.76	574.61	434.40	567.80	1430.9	1912.7	.895	1.000	1.000	610.70 BTU/MIN
	HOT SIDE	57.000	200.00	199.52	583.41	562.17	.0	.0	.142	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.267	574.26	574.08	441.71	705.52	1458.0	2395.4	.873	1.000	1.000	1187.92 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	743.98	660.00	.0	.0	.278	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.756	573.93	573.90	705.52	1344.77	2395.4	4627.3	.955	1.000	1.000	1686.31 BTU/MIN
	HOT SIDE	2.117	1.46	.74	1374.72	996.23	.0	.0	.566	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.267	573.74	573.55	774.15	749.99	2635.9	2551.2	.051	1.000	1.000	-107.33 BTU/MIN
	HOT SIDE	.850	900.00	899.97	300.00	749.99	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.261	441.712	.238	1458.025
2	.000	.000	.000	.000	42	574.084	705.520	.155	2395.369
3	.000	.000	.000	.000	43	574.064	705.520	.155	2395.369
4	.000	.000	.000	.000	44	574.064	705.520	.155	2395.369
5	900.000	300.000	16.648	35.434	45	574.043	705.520	.155	2395.368
6	899.965	749.986	3.673	160.868	46	573.932	705.520	.155	2395.366
7	896.932	749.986	3.661	160.879	47	573.905	1344.765	.082	4627.335
8	896.925	749.986	3.661	160.879	48	574.039	705.520	.155	2395.368
9	479.217	749.986	1.955	162.399	49	573.905	705.520	.000	.000
10	479.205	749.986	1.955	162.399	50	573.905	1086.215	.101	3721.567
11	63.810	749.986	.260	163.953	51	573.873	1086.215	.101	3721.566
12	200.000	743.980	.000	.000	52	573.860	1086.215	.101	3721.566
13	199.994	660.002	.000	.000	53	573.756	.000	.000	.000
14	199.994	660.002	.000	.000	54	573.764	774.151	.139	2635.877
15	199.994	660.002	.000	.000	55	573.773	1086.215	.101	3721.564
16	200.000	583.405	.000	.000	56	573.764	204.679	.520	533.780
17	200.000	583.405	.000	.000	57	573.741	774.151	.139	2635.877
18	200.000	583.405	.000	.000	58	573.555	749.987	.144	2551.189
19	199.521	562.174	.000	.000	59	573.533	749.987	.144	2551.189
20	.000	.000	.000	.000	60	63.589	749.987	.016	2540.348
21	.000	.000	.000	.000	61	58.281	1941.536	.006	6738.823
22	.000	.000	.000	.000	62	58.266	1941.536	.000	.000
23	.000	.000	.000	.000	63	12.998	1665.000	.000	.000
24	.000	.000	.000	.000	64	1.676	1374.723	.000	.000
25	.000	.000	.000	.000	65	1.464	1374.723	.000	.000
26	575.000	55.000	3.984	-45.499	66	.743	996.234	.000	.000
27	574.987	55.000	3.984	-45.500	67	.332	.000	.000	.000
28	574.948	315.784	.332	971.498	68	.000	.000	.000	.000
29	574.938	315.784	.332	971.498	69	.000	.000	.000	.000
30	574.938	315.784	.332	971.498	70	.000	460.000	.000	.000
31	574.929	315.784	.332	971.498	71	.000	536.631	.000	.000
32	574.789	434.404	.242	1430.858	72	.000	537.862	.000	.000
33	574.776	434.404	.242	1430.858	73	.000	.000	.000	.000
34	574.776	434.404	.242	1430.858	74	.000	.000	.000	.000
35	574.762	434.404	.242	1430.858	75	.000	.000	.000	.000
36	574.615	567.797	.188	1912.739	76	.000	.000	.000	.000
37	574.598	567.795	.188	1912.733	77	.000	.000	.000	.000
38	574.598	567.795	.188	1912.733	78	.000	.000	.000	.000
39	574.580	567.795	.188	1912.733	79	.000	.000	.000	.000
40	574.274	441.712	.238	1458.026	80	.000	.000	.000	1.000

Computer Case 31

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 15 DEC 72 08:36:12

HYDRAULIC POWER	10.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	33.40	SPC	3.321	AMW	3.28
HYDRAULIC PUMP	30.57	LUBE PUMP	4.00	SECOND STAGE	35.17	O/F	.625		
TOTAL GEAR BOX	40.57			TOTAL TURBINE	68.57	PT OUT	.329		

TURBINE INFORMATION

FLOW	2.246	PRESSURE	62.62	1.73	EFFICIENCY 1ST	.432	A1	.1517	A3	5538
SPECIFIC HEAT RATIO	1.359	TEMPERATURE	1940.0	1375.4	EFFICIENCY 2ND	.392	A2	.2335	A4	.6096
PRESSURE RATIO	36.24	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.475	HP	68.57	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1234.16	703.32	828.28	828.28	828.28
PRESSURE IN	573.32	573.83	896.50	445.77	572.87
PRESSURE OUT	572.70	573.83	445.78	68.58	68.34
EFFECTIVE AREA	.09091	.00000	.00083	.00166	.00831
FLOW	.852	.000	.863	.863	1.382

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.382	574.98	574.93	55.00	374.87	-45.5	1204.6	.271	1.000	1.000	1727.87 BTU/MIN
	HOT SIDE	.530	573.18	573.16	1234.16	243.14	4237.5	680.7	.840	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.382	574.90	574.72	374.87	456.09	1204.6	1511.3	.477	1.000	1.000	423.93 BTU/MIN
	HOT SIDE	1.382	574.47	574.10	545.21	460.65	1833.6	1528.1	.496	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.382	574.69	574.51	456.09	545.22	1511.3	1833.6	.887	1.000	1.000	445.52 BTU/MIN
	HOT SIDE	57.000	200.00	198.73	556.62	540.77	.0	.0	.158	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.382	574.09	573.88	460.65	703.32	1528.1	2387.7	.856	1.000	1.000	1188.12 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	744.12	659.99	.0	.0	.297	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.382	573.46	573.38	703.32	1234.19	2387.6	4237.6	.790	1.000	1.000	2557.07 BTU/MIN
	HOT SIDE	2.246	1.49	.73	1375.36	832.81	.0	.0	.807	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.382	573.13	572.90	854.16	828.28	2914.8	2824.8	.047	1.000	1.000	-124.42 BTU/MIN
	HOT SIDE	.863	900.00	899.96	300.00	828.28	35.4	179.6	.953	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.087	460.652	.228	1528.077
2	.000	.000	.000	.000	42	573.876	703.320	.156	2387.657
3	.000	.000	.000	.000	43	573.851	703.320	.156	2387.657
4	.000	.000	.000	.000	44	573.851	703.320	.156	2387.657
5	900.000	300.000	16.648	35.434	45	573.826	703.320	.156	2387.656
6	899.962	828.276	3.245	179.578	46	573.455	703.320	.156	2387.649
7	896.506	828.276	3.233	179.587	47	573.383	1234.187	.087	4237.638
8	896.498	828.276	3.233	179.587	48	573.826	703.320	.156	2387.656
9	445.784	828.276	1.616	180.770	49	573.826	703.320	.000	.000
10	445.769	828.276	1.616	180.770	50	573.383	1234.158	.087	4237.535
11	68.577	828.276	.250	181.803	51	573.339	1234.158	.087	4237.534
12	200.000	744.116	.000	.000	52	573.322	1234.158	.087	4237.534
13	199.994	659.993	.000	.000	53	572.697	.000	.000	.000
14	199.994	659.993	.000	.000	54	573.163	854.164	.126	2914.764
15	199.994	659.993	.000	.000	55	573.176	1234.158	.087	4237.530
16	200.000	556.617	.000	.000	56	573.163	243.137	.432	680.723
17	200.000	556.617	.000	.000	57	573.133	854.164	.126	2914.763
18	200.000	556.617	.000	.000	58	572.896	828.276	.129	2824.751
19	198.728	540.769	.000	.000	59	572.866	828.276	.129	2824.750
20	.000	.000	.000	.000	60	68.340	828.276	.016	2813.405
21	.000	.000	.000	.000	61	62.635	1940.033	.006	6734.924
22	.000	.000	.000	.000	62	62.619	1940.033	.000	.000
23	.000	.000	.000	.000	63	13.923	1664.999	.000	.000
24	.000	.000	.000	.000	64	1.728	1375.358	.000	.000
25	.000	.000	.000	.000	65	1.490	1375.358	.000	.000
26	575.000	55.000	3.984	-45.499	66	.735	832.814	.000	.000
27	574.985	55.000	3.984	-45.500	67	.329	.000	.000	.000
28	574.931	374.874	.280	1204.582	68	.000	.000	.000	.000
29	574.917	374.874	.280	1204.582	69	.000	.000	.000	.000
30	574.917	374.874	.280	1204.582	70	.000	460.000	.000	.000
31	574.903	374.874	.280	1204.582	71	.000	508.461	.000	.000
32	574.721	456.094	.230	1511.287	72	.000	509.729	.000	.000
33	574.704	456.094	.230	1511.287	73	.000	.000	.000	.000
34	574.704	456.094	.230	1511.287	74	.000	.000	.000	.000
35	574.688	456.094	.230	1511.286	75	.000	.000	.000	.000
36	574.513	545.219	.194	1833.615	76	.000	.000	.000	.000
37	574.493	545.215	.194	1833.598	77	.000	.000	.000	.000
38	574.493	545.215	.194	1833.598	78	.000	.000	.000	.000
39	574.474	545.215	.194	1833.598	79	.000	.000	.000	.000
40	574.104	460.652	.228	1528.077	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 15 DEC 72 08:36:21

HYDRAULIC POWER	10.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	33.43	SPC	3.382	AMW	3.37
HYDRAULIC PUMP	30.57	LUBE PUMP	4.00	SECOND STAGE	35.14	O/F	.671		
TOTAL GEAR BOX	40.57			TOTAL TURBINE	68.57	PT OUT	.347		

TURBINE INFORMATION

FLOW	2.287	PRESSURE	62.93	1.77	EFFICIENCY 1ST	.437	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1942.4	1373.5	EFFICIENCY 2ND	.398	A2	.2335	A4	.6096
PRESSURE RATIO	35.48	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.480	HP	68.57	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1149.34	703.59	749.95	749.95	749.95
PRESSURE IN	573.56	573.85	896.41	479.22	573.12
PRESSURE OUT	573.38	573.62	479.23	68.92	68.68
EFFECTIVE AREA	.15194	.04742	.00084	.00156	.00782
FLOW	.793	.362	.918	.918	1.368

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.368	574.98	574.93	55.00	371.10	-45.5	1189.9	.289	1.000	1.000	1690.21 BTU/MIN
	HOT SIDE	.575	573.40	573.38	1149.34	256.18	3941.0	732.3	.816	1.000	1.000	8 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.368	574.91	574.73	371.10	453.91	1189.9	1503.2	.477	1.000	1.000	428.69 BTU/MIN
	HOT SIDE	1.368	574.49	574.13	544.88	458.58	1832.4	1520.4	.497	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.368	574.70	574.53	453.91	544.89	1503.2	1832.5	.888	1.000	1.000	450.41 BTU/MIN
	HOT SIDE	57.000	200.00	198.71	556.37	540.34	.0	.0	.156	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.368	574.11	573.90	458.58	703.59	1520.4	2388.6	.858	1.000	1.000	1187.81 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	744.10	660.01	.0	.0	.295	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.006	573.66	573.62	703.59	1309.88	2388.6	4504.4	.905	1.000	1.000	2128.10 BTU/MIN
	HOT SIDE	2.287	1.54	.77	1373.51	930.87	.0	.0	.661	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.368	573.36	573.15	774.13	749.95	2635.8	2551.0	.051	1.000	1.000	-115.94 BTU/MIN
	HOT SIDE	.918	900.00	899.96	300.00	749.95	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.110	458.575	.229	1520.422
2	.000	.000	.000	.000	42	573.903	703.592	.156	2388.609
3	.000	.000	.000	.000	43	573.878	703.592	.156	2388.609
4	.000	.000	.000	.000	44	573.878	703.592	.156	2388.609
5	900.000	300.000	16.648	35.434	45	573.854	703.592	.156	2388.608
6	899.960	749.948	3.673	160.859	46	573.658	703.592	.156	2388.604
7	896.420	749.948	3.659	160.872	47	573.616	1309.877	.083	4504.380
8	896.412	749.948	3.659	160.872	48	573.853	703.592	.156	2388.608
9	479.229	749.948	1.955	162.390	49	573.616	703.592	.000	.000
10	479.215	749.948	1.955	162.390	50	573.616	1149.345	.094	3941.048
11	68.916	749.948	.281	163.921	51	573.576	1149.345	.094	3941.047
12	200.000	744.101	.000	.000	52	573.562	1149.345	.094	3941.047
13	199.994	660.013	.000	.000	53	573.382	.000	.000	.000
14	199.994	660.013	.000	.000	54	573.385	774.129	.139	2635.791
15	199.994	660.013	.000	.000	55	573.399	1149.345	.094	3941.043
16	200.000	556.366	.000	.000	56	573.385	256.182	.409	732.300
17	200.000	556.366	.000	.000	57	573.358	774.129	.139	2635.790
18	200.000	556.366	.000	.000	58	573.147	749.949	.144	2551.048
19	198.709	540.340	.000	.000	59	573.121	749.949	.144	2551.048
20	.000	.000	.000	.000	60	68.677	749.949	.018	2540.325
21	.000	.000	.000	.000	61	62.942	1942.353	.006	6741.784
22	.000	.000	.000	.000	62	62.926	1942.353	.000	.000
23	.000	.000	.000	.000	63	14.011	1664.999	.000	.000
24	.000	.000	.000	.000	64	1.774	1373.513	.000	.000
25	.000	.000	.000	.000	65	1.541	1373.513	.000	.000
26	575.000	55.000	3.984	-45.499	66	.775	930.870	.000	.000
27	574.985	55.000	3.984	-45.500	67	.347	.000	.000	.000
28	574.932	371.104	.283	1189.905	68	.000	.000	.000	.000
29	574.919	371.104	.283	1189.905	69	.000	.000	.000	.000
30	574.919	371.104	.283	1189.905	70	.000	460.000	.000	.000
31	574.906	371.104	.283	1189.905	71	.000	508.204	.000	.000
32	574.728	453.912	.232	1503.245	72	.000	509.472	.000	.000
33	574.712	453.912	.232	1503.244	73	.000	.000	.000	.000
34	574.712	453.912	.232	1503.244	74	.000	.000	.000	.000
35	574.696	453.912	.232	1503.244	75	.000	.000	.000	.000
36	574.525	544.888	.194	1832.456	76	.000	.000	.000	.000
37	574.506	544.880	.194	1832.424	77	.000	.000	.000	.000
38	574.506	544.880	.194	1832.424	78	.000	.000	.000	.000
39	574.487	544.880	.194	1832.424	79	.000	.000	.000	.000
40	574.126	458.575	.229	1520.422	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 15 DEC 72 08:36:47

HYDRAULIC POWER	90.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	74.78	SPC	2.396	AMW	3.40
HYDRAULIC PUMP	35.14	LUBE PUMP	4.00	SECOND STAGE	78.37	O/F	.688		
TOTAL GEAR BOX	125.14			TOTAL TURBINE	153.14	PT OUT	.680		

TURBINE INFORMATION

FLOW	4.998	PRESSURE	137.18	3.55	EFFICIENCY 1ST	.444	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1951.2	1365.0	EFFICIENCY 2ND	.399	A2	.2335	A4	.6096
PRESSURE RATIO	38.65	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.486	HP	153.14	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1190.38	576.10	729.75	729.75	729.79
PRESSURE IN	568.07	570.02	882.85	484.67	565.23
PRESSURE OUT	566.17	570.02	484.74	150.25	149.73
EFFECTIVE AREA	.07461	.00000	.00186	.00339	.01693
FLOW	1.233	.000	2.038	2.038	2.960

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	2.960	574.93	574.67	55.00	426.16	-45.5	1400.0	.327	1.000	1.000	4278.71 BTU/MIN
	HOT SIDE	1.727	566.41	566.18	1190.38	441.88	4083.6	1458.5	.659	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	2.960	574.53	573.69	426.16	460.04	1400.0	1525.8	.468	1.000	1.000	372.55 BTU/MIN
	HOT SIDE	2.960	572.65	571.13	498.52	464.02	1666.2	1540.4	.477	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	2.960	573.54	572.82	460.04	498.53	1525.8	1666.3	.685	1.000	1.000	415.76 BTU/MIN
	HOT SIDE	57.000	200.00	191.67	516.23	500.82	.0	.0	.274	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	2.960	571.05	570.21	464.02	576.10	1540.4	1941.7	.609	1.000	1.000	1187.88 BTU/MIN
	HOT SIDE	28.500	200.00	199.92	648.06	557.33	.0	.0	.493	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	2.960	568.58	568.30	576.10	1190.39	1941.7	4083.6	.779	1.000	1.000	6340.25 BTU/MIN
	HOT SIDE	4.998	3.00	1.52	1365.04	760.33	.0	.0	.766	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	2.960	566.05	565.35	753.59	729.79	2563.7	2480.2	.052	1.000	1.000	-246.97 BTU/MIN
	HOT SIDE	2.038	900.00	899.85	300.00	729.75	35.4	156.1	.947	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	571.051	464.020	.225	1540.448
2	.000	.000	.000	.000	42	570.206	576.096	.185	1941.747
3	.000	.000	.000	.000	43	570.111	576.096	.185	1941.745
4	.000	.000	.000	.000	44	570.111	576.096	.185	1941.745
5	900.000	300.000	16.648	35.434	45	570.015	576.096	.185	1941.743
6	899.851	729.755	3.814	156.063	46	568.585	576.096	.185	1941.718
7	882.888	729.755	3.742	156.130	47	568.298	1190.390	.089	4083.624
8	882.852	729.755	3.741	156.130	48	570.015	576.096	.185	1941.743
9	484.739	729.755	2.050	157.711	49	570.015	576.096	.000	.000
10	484.673	729.755	2.050	157.711	50	568.299	1190.383	.089	4083.599
11	150.248	729.755	.634	159.074	51	568.100	1190.383	.089	4083.594
12	200.000	648.059	.000	.000	52	568.066	1190.383	.089	4083.594
13	199.920	557.333	.000	.000	53	566.175	.000	.000	.000
14	199.920	557.333	.000	.000	54	566.179	753.591	.142	2563.664
15	199.920	557.333	.000	.000	55	566.412	1190.383	.089	4083.554
16	200.000	516.230	.000	.000	56	566.179	441.877	.234	1458.546
17	200.000	516.230	.000	.000	57	566.054	753.591	.142	2563.661
18	200.000	516.230	.000	.000	58	565.348	729.786	.147	2480.228
19	191.669	500.821	.000	.000	59	565.228	729.786	.147	2480.226
20	.000	.000	.000	.000	60	149.727	729.786	.040	2471.585
21	.000	.000	.000	.000	61	137.218	1951.211	.013	6776.135
22	.000	.000	.000	.000	62	137.182	1951.211	.000	.000
23	.000	.000	.000	.000	63	29.932	1664.999	.000	.000
24	.000	.000	.000	.000	64	3.550	1365.042	.000	.000
25	.000	.000	.000	.000	65	3.003	1365.042	.000	.000
26	575.000	55.000	3.984	-45.499	66	1.519	760.331	.000	.000
27	574.929	55.000	3.984	-45.500	67	.680	.000	.000	.000
28	574.669	426.159	.246	1399.961	68	.000	.000	.000	.000
29	574.597	426.159	.246	1399.961	69	.000	.000	.000	.000
30	574.597	426.159	.246	1399.961	70	.000	460.000	.000	.000
31	574.526	426.159	.246	1399.960	71	.000	465.832	.000	.000
32	573.694	460.040	.228	1525.816	72	.000	467.158	.000	.000
33	573.616	460.040	.228	1525.815	73	.000	.000	.000	.000
34	573.616	460.040	.228	1525.815	74	.000	.000	.000	.000
35	573.539	460.040	.228	1525.814	75	.000	.000	.000	.000
36	572.817	498.533	.210	1666.270	76	.000	.000	.000	.000
37	572.734	498.515	.210	1666.204	77	.000	.000	.000	.000
38	572.734	498.515	.210	1666.204	78	.000	.000	.000	.000
39	572.650	498.515	.210	1666.203	79	.000	.000	.000	.000
40	571.129	464.020	.225	1540.449	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 15 DEC 72 08:37:21

HYDRAULIC POWER	180.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	121.52	SPC	2.192	AMW	3.45
HYDRAULIC PUMP	40.29	LUBE PUMP	4.00	SECOND STAGE	126.76	O/F	.713		
TOTAL GEAR BOX	220.29			TOTAL TURBINE	248.28	PT OUT	1.075		

TURBINE INFORMATION

FLOW	8.047	PRESSURE	219.69	5.52	EFFICIENCY 1ST	.450	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.356	TEMPERATURE	1957.5	1359.9	EFFICIENCY 2ND	.403	A2	.2335	A4	.6096
PRESSURE RATIO	39.79	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.492	HP	248.28	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1165.09	534.03	694.57	694.57	694.75
PRESSURE IN	557.70	562.39	853.37	486.49	547.96
PRESSURE OUT	550.00	562.39	486.65	240.48	239.66
EFFECTIVE AREA	.03662	.00000	.00310	.00541	.02705
FLOW	1.224	.000	3.349	3.349	4.698

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	4.698	574.82	574.18	55.00	436.07	-45.5	1437.1	.343	1.000	1.000	6964.93 BTU/MIN
	HOT SIDE	3.474	550.99	549.99	1165.09	560.12	3995.2	1885.4	.545	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	4.698	573.81	571.79	436.07	459.94	1437.1	1525.4	.457	1.000	1.000	415.12 BTU/MIN
	HOT SIDE	4.698	569.24	565.59	488.35	464.16	1629.3	1540.9	.463	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	4.698	571.40	569.66	459.94	488.31	1525.4	1629.1	.532	1.000	1.000	487.31 BTU/MIN
	HOT SIDE	57.000	200.00	189.27	513.28	495.13	.0	.0	.340	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	4.698	565.39	562.85	464.16	534.03	1540.9	1793.8	.445	1.000	1.000	1187.93 BTU/MIN
	HOT SIDE	28.500	200.00	199.80	621.18	528.96	.0	.0	.587	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	4.698	558.93	558.23	534.03	1165.07	1793.7	3995.4	.764	1.000	1.000	10343.17 BTU/MIN
	HOT SIDE	8.047	4.63	2.40	1359.87	747.29	.0	.0	.742	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	4.698	549.69	548.26	717.68	694.75	2437.5	2357.1	.055	1.000	1.000	-377.50 BTU/MIN
	HOT SIDE	3.349	900.00	899.65	300.00	694.57	35.4	147.7	.945	1.000	1.000	1 PASS PARALL

Computer Case 33 (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	565.390	464.163	.223	1540.904
2	.000	.000	.000	.000	42	562.845	534.029	.193	1793.769
3	.000	.000	.000	.000	43	562.615	534.029	.193	1793.765
4	.000	.000	.000	.000	44	562.615	534.029	.193	1793.765
5	900.000	300.000	16.648	35.434	45	562.385	534.029	.193	1793.761
6	899.650	694.575	4.058	147.707	46	558.935	534.029	.192	1793.704
7	853.468	694.575	3.848	147.914	47	558.232	1165.075	.090	3995.368
8	853.374	694.575	3.848	147.914	48	562.385	534.029	.193	1793.761
9	486.652	694.575	2.184	149.585	49	562.385	534.029	.000	.000
10	486.487	694.575	2.184	149.586	50	558.231	1165.087	.090	3995.412
11	240.483	694.575	1.076	150.721	51	557.738	1165.087	.090	3995.401
12	200.000	621.180	.000	.000	52	557.704	1165.087	.090	3995.400
13	199.804	528.959	.000	.000	53	549.997	.000	.000	.000
14	199.804	528.959	.000	.000	54	549.992	717.677	.146	2437.478
15	199.804	528.959	.000	.000	55	550.988	1165.087	.089	3995.239
16	200.000	513.276	.000	.000	56	549.992	560.120	.182	1885.413
17	200.000	513.276	.000	.000	57	549.687	717.677	.146	2437.472
18	200.000	513.276	.000	.000	58	548.257	694.752	.151	2357.117
19	189.268	495.132	.000	.000	59	547.963	694.752	.151	2357.112
20	.000	.000	.000	.000	60	239.657	694.752	.067	2350.945
21	.000	.000	.000	.000	61	219.747	1957.513	.021	6801.715
22	.000	.000	.000	.000	62	219.690	1957.513	.000	.000
23	.000	.000	.000	.000	63	47.313	1665.001	.000	.000
24	.000	.000	.000	.000	64	5.521	1359.872	.000	.000
25	.000	.000	.000	.000	65	4.627	1359.872	.000	.000
26	575.000	55.000	3.984	-45.499	66	2.402	747.292	.000	.000
27	574.822	55.000	3.984	-45.502	67	1.075	.000	.000	.000
28	574.179	436.071	.241	1437.065	68	.000	.000	.000	.000
29	573.995	436.071	.241	1437.063	69	.000	.000	.000	.000
30	573.995	436.071	.241	1437.063	70	.000	460.000	.000	.000
31	573.810	436.071	.240	1437.061	71	.000	462.702	.000	.000
32	571.788	459.940	.227	1525.424	72	.000	464.033	.000	.000
33	571.593	459.940	.227	1525.421	73	.000	.000	.000	.000
34	571.593	459.940	.227	1525.421	74	.000	.000	.000	.000
35	571.397	459.940	.227	1525.419	75	.000	.000	.000	.000
36	569.662	488.313	.214	1629.148	76	.000	.000	.000	.000
37	569.453	488.350	.214	1629.279	77	.000	.000	.000	.000
38	569.453	488.350	.214	1629.279	78	.000	.000	.000	.000
39	569.245	488.350	.213	1629.276	79	.000	.000	.000	.000
40	565.590	464.163	.223	1540.906	80	.000	.000	.000	1.000

HX = 8.00000 PHO = -12.8284 PHO = .516204

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 15 DEC 72 08:37:38

HYDRAULIC POWER	270.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	168.41	SPC	2.107	AMW	3.49
HYDRAULIC PUMP	45.43	LUBE PUMP	4.00	SECOND STAGE	175.02	O/F	.729		
TOTAL GEAR BOX	315.43			TOTAL TURBINE	343.43	PT OUT	1.471		

TURBINE INFORMATION

FLOW	11.078	PRESSURE	301.40	7.45	EFFICIENCY 1ST	.454	A1	.1517	A3 .5538
SPECIFIC HEAT RATIO	1.356	TEMPERATURE	1961.9	1356.5	EFFICIENCY 2ND	.406	A2	.2335	A4 .6096
PRESSURE RATIO	40.44	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.497	HP	343.43	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1147.33	515.22	671.06	671.06	671.50
PRESSURE IN	544.30	552.81	806.97	486.22	519.65
PRESSURE OUT	522.58	552.81	486.53	329.78	328.66
EFFECTIVE AREA	.01164	.00000	.00453	.00782	.03911
FLOW	.650	.000	4.671	4.671	6.406

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	6.406	574.67	573.49	55.00	441.70	-45.5	1458.0	.354	1.000	1.000	9631.83 BTU/MIN
	HOT SIDE	5.756	525.71	522.89	1147.33	642.54	3932.9	2173.7	.462	1.000	1.000	4 PASS COUNT
3	COLD SIDE	6.406	572.80	569.12	441.70	459.98	1458.0	1525.5	.447	1.000	1.000	432.88 BTU/MIN
	HOT SIDE	6.406	564.49	557.86	482.61	464.14	1608.4	1540.7	.451	1.000	1.000	6 PASS PARALL
5	COLD SIDE	6.406	568.39	565.27	459.98	482.60	1525.5	1608.3	.432	1.000	1.000	530.41 BTU/MIN
	HOT SIDE	57.000	200.00	188.07	512.34	492.55	.0	.0	.378	1.000	1.000	4 PASS COUNT
6	COLD SIDE	6.406	557.48	553.65	464.14	515.22	1540.7	1726.2	.346	1.000	1.000	1188.00 BTU/MIN
	HOT SIDE	28.500	200.00	199.73	611.76	518.82	.0	.0	.630	1.000	1.000	4 PASS COUNT
8	COLD SIDE	6.406	546.51	545.22	515.22	1147.32	1726.0	3933.3	.751	1.000	1.000	14140.73 BTU/MIN
	HOT SIDE	11.078	6.21	3.29	1356.47	748.53	.0	.0	.723	1.000	1.000	2 PASS COUNT
9	COLD SIDE	6.406	522.31	520.21	693.75	671.50	2353.1	2275.1	.057	1.000	1.000	-499.77 BTU/MIN
	HOT SIDE	4.671	900.00	899.36	300.00	671.06	35.4	142.1	.942	1.000	1.000	1 PASS PARALL

Computer Case 34 (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	557.484	464.141	.220	1540.719
2	.000	.000	.000	.000	42	553.648	515.216	.197	1726.159
3	.000	.000	.000	.000	43	553.229	515.216	.197	1726.152
4	.000	.000	.000	.000	44	553.229	515.216	.197	1726.152
5	900.000	300.000	16.648	35.434	45	552.809	515.216	.197	1726.146
6	899.356	671.063	4.221	142.123	46	546.509	515.216	.195	1726.047
7	807.153	671.063	3.783	142.571	47	545.225	1147.321	.090	3933.335
8	806.967	671.063	3.783	142.572	48	552.809	515.216	.197	1726.146
9	486.529	671.063	2.268	144.159	49	552.809	515.216	.000	.000
10	486.219	671.063	2.267	144.161	50	545.225	1147.326	.090	3933.349
11	329.781	671.063	1.533	144.958	51	544.305	1147.326	.090	3933.327
12	200.000	611.763	.000	.000	52	544.296	1147.326	.090	3933.327
13	199.729	518.816	.000	.000	53	522.581	.000	.000	.000
14	199.729	518.816	.000	.000	54	522.888	693.754	.144	2353.109
15	199.729	518.816	.000	.000	55	525.715	1147.326	.087	3932.883
16	200.000	512.341	.000	.000	56	522.888	642.543	.155	2173.703
17	200.000	512.341	.000	.000	57	522.314	693.754	.144	2353.098
18	200.000	512.341	.000	.000	58	520.206	671.497	.148	2275.086
19	188.068	492.554	.000	.000	59	519.649	671.497	.148	2275.075
20	.000	.000	.000	.000	60	328.659	671.497	.095	2271.363
21	.000	.000	.000	.000	61	301.474	1961.878	.029	6819.527
22	.000	.000	.000	.000	62	301.397	1961.878	.000	.000
23	.000	.000	.000	.000	63	64.305	1665.001	.000	.000
24	.000	.000	.000	.000	64	7.453	1356.472	.000	.000
25	.000	.000	.000	.000	65	6.212	1356.472	.000	.000
26	575.000	55.000	3.984	-45.499	66	3.288	748.530	.000	.000
27	574.668	55.000	3.984	-45.504	67	1.471	.000	.000	.000
28	573.492	441.700	.237	1457.970	68	.000	.000	.000	.000
29	573.144	441.700	.237	1457.966	69	.000	.000	.000	.000
30	573.144	441.700	.237	1457.966	70	.000	460.000	.000	.000
31	572.795	441.700	.237	1457.962	71	.000	461.713	.000	.000
32	569.121	459.979	.226	1525.532	72	.000	463.046	.000	.000
33	568.756	459.979	.226	1525.527	73	.000	.000	.000	.000
34	568.756	459.979	.226	1525.527	74	.000	.000	.000	.000
35	568.390	459.979	.226	1525.523	75	.000	.000	.000	.000
36	565.266	482.600	.214	1608.317	76	.000	.000	.000	.000
37	564.880	482.614	.214	1608.363	77	.000	.000	.000	.000
38	564.880	482.614	.214	1608.363	78	.000	.000	.000	.000
39	564.494	482.614	.214	1608.358	79	.000	.000	.000	.000
40	557.860	464.141	.220	1540.724	80	.000	.000	.000	1.000

* CONDITION * BYPASS AMBIENT PRESSURE 14.70 PSIA. 19 DEC 72 15:20:58

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	43.24	SPC	6.006	AMW	3.36
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	14.76	O/F	.669		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	14.700		

TURBINE INFORMATION

FLOW	3.003	PRESSURE	82.60	14.97	EFFICIENCY 1ST	.443	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1937.8	1571.9	EFFICIENCY 2ND	.577	A2	.2335	A4	.6096
PRESSURE RATIO	5.52	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.521	HP	58.00	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1053.15	661.84	749.87	749.87	749.88
PRESSURE IN	572.78	573.00	893.85	476.49	572.19
PRESSURE OUT	572.61	572.86	476.52	90.44	90.12
EFFECTIVE AREA	.23116	.17253	.00110	.00206	.01031
FLOW	1.196	1.013	1.203	1.203	1.800

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.800	574.97	574.90	55.00	287.04	-45.5	856.0	.232	1.000	1.000	1622.38 BTU/MIN
	HOT SIDE	.604	572.63	572.61	1053.15	221.31	3606.6	596.1	.833	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.800	574.87	574.60	287.04	460.08	856.0	1526.0	.461	1.000	1.000	1205.73 BTU/MIN
	HOT SIDE	1.800	574.14	573.47	662.80	475.40	2245.7	1582.1	.499	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.800	574.54	574.22	460.08	662.76	1526.0	2245.5	.883	1.000	1.000	1294.95 BTU/MIN
	HOT SIDE	57.000	200.00	199.96	689.64	648.52	.0	.0	.179	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.800	573.44	573.09	475.40	661.84	1582.1	2242.3	.765	1.000	1.000	1188.00 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	713.03	626.76	.0	.0	.363	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.786	572.90	572.86	661.84	1557.47	2242.3	5376.9	.984	1.000	1.000	2464.96 BTU/MIN
	HOT SIDE	3.003	14.92	14.76	1571.85	1183.04	.0	.0	.427	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.800	572.57	572.24	773.95	749.88	2635.1	2550.8	.051	1.000	1.000	-151.84 BTU/MIN
	HOT SIDE	1.203	900.00	899.94	300.00	749.87	35.4	160.8	.949	1.000	1.000	1 PASS PARALL

Computer Case 36B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.436	475.398	.221	1582.143
2	.000	.000	.000	.000	42	573.088	661.837	.165	2242.267
3	.000	.000	.000	.000	43	573.049	661.837	.165	2242.266
4	.000	.000	.000	.000	44	573.049	661.837	.165	2242.266
5	900.000	300.000	14.648	35.434	45	573.009	661.837	.165	2242.265
6	899.939	749.872	3.674	160.841	46	572.896	661.837	.165	2242.263
7	893.863	749.872	3.649	160.863	47	572.865	1557.471	.071	5376.899
8	893.850	749.872	3.649	160.863	48	572.997	661.837	.165	2242.265
9	476.517	749.872	1.944	162.382	49	572.865	661.837	.000	.000
10	476.493	749.872	1.944	162.382	50	572.865	1053.148	.105	3606.578
11	90.436	749.872	.369	163.806	51	572.803	1053.148	.105	3606.577
12	200.000	713.035	.000	.000	52	572.775	1053.148	.105	3606.576
13	199.988	626.763	.000	.000	53	572.613	.000	.000	.000
14	199.988	626.763	.000	.000	54	572.613	773.950	.138	2635.145
15	199.988	626.763	.000	.000	55	572.627	1053.148	.105	3606.573
16	200.000	689.645	.000	.000	56	572.613	221.308	.477	596.144
17	200.000	689.645	.000	.000	57	572.565	773.950	.138	2635.144
18	200.000	689.645	.000	.000	58	572.239	749.875	.144	2550.770
19	199.961	648.524	.000	.000	59	572.194	749.875	.144	2550.769
20	.000	.000	.000	.000	60	90.125	749.875	.023	2540.525
21	.000	.000	.000	.000	61	82.625	1937.827	.008	6725.342
22	.000	.000	.000	.000	62	82.604	1937.827	.000	.000
23	.000	.000	.000	.000	63	19.390	1664.998	.000	.000
24	.000	.000	.000	.000	64	14.973	1571.854	.000	.000
25	.000	.000	.000	.000	65	14.919	1571.854	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.763	1183.040	.000	.000
27	574.974	55.000	3.984	-45.500	67	14.700	1183.040	.000	.000
28	574.904	287.038	.365	855.993	68	.000	.000	.000	.000
29	574.886	287.038	.365	855.993	69	.000	.000	.000	.000
30	574.886	287.038	.365	855.993	70	.000	830.000	.000	.000
31	574.869	287.038	.365	855.993	71	.000	648.524	.000	.000
32	574.598	460.079	.228	1525.970	72	.000	648.524	.000	.000
33	574.569	460.079	.228	1525.970	73	.000	.000	.000	.000
34	574.569	460.079	.228	1525.970	74	.000	.000	.000	.000
35	574.541	460.079	.228	1525.969	75	.000	.000	.000	.000
36	574.221	662.760	.166	2245.523	76	.000	.000	.000	.000
37	574.181	662.799	.166	2245.660	77	.000	.000	.000	.000
38	574.181	662.799	.166	2245.660	78	.000	.000	.000	.000
39	574.142	662.799	.165	2245.660	79	.000	.000	.000	.000
40	573.465	475.398	.221	1582.144	80	.000	.000	.000	1.000

* CONDITION * BYPASS AMBIENT PRESSURE 14.70 PSIA. 19 DEC 72 15:21:26

HYDRAULIC POWER	5.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	46.21	SPC	5.401	AMW	3.37
HYDRAULIC PUMP	30.29	LUBE PUMP	4.00	SECOND STAGE	17.08	O/F	.670		
TOTAL GEAR BOX	35.29			TOTAL TURBINE	63.29	PT OUT	14.700		

TURBINE INFORMATION

FLOW	3.176	PRESSURE	87.40	15.01	EFFICIENCY 1ST	.442	A1	.1517	A3 .5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1940.8	1563.0	EFFICIENCY 2ND	.580	A2	.2335	A4 .6096
PRESSURE RATIO	5.82	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.524	HP	63.29	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	958.16	664.69	749.94	749.94	749.94
PRESSURE IN	572.56	572.73	893.10	477.66	572.04
PRESSURE OUT	572.48	572.66	477.69	95.71	95.38
EFFECTIVE AREA	.40697	.29291	.00117	.00218	.01090
FLOW	1.468	1.278	1.275	1.275	1.902

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.902	574.97	574.91	55.00	207.46	-45.5	544.0	.169	1.000	1.000	1120.86 BTU/MIN
	HOT SIDE	.433	572.51	572.50	958.16	149.95	3276.3	345.7	.895	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.902	574.89	574.62	207.46	460.07	544.0	1525.9	.449	1.000	1.000	1867.26 BTU/MIN
	HOT SIDE	1.902	574.07	573.26	769.45	487.89	2619.4	1627.7	.501	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.902	574.55	574.17	460.07	769.46	1525.9	2619.4	.915	1.000	1.000	2079.36 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	798.12	737.75	.0	.0	.179	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.902	573.23	572.84	487.89	664.69	1627.7	2252.2	.771	1.000	1.000	1187.66 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	717.11	631.07	.0	.0	.375	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.624	572.68	572.66	664.69	1559.39	2252.2	5383.7	.996	1.000	1.000	1953.40 BTU/MIN
	HOT SIDE	3.176	14.95	14.78	1563.03	1271.75	.0	.0	.324	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.902	572.45	572.09	774.09	749.94	2635.6	2551.0	.051	1.000	1.000	-160.93 BTU/MIN
	HOT SIDE	1.275	900.00	899.93	300.00	749.94	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

Computer Case 37B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.229	487.891	.215	1627.667
2	.000	.000	.000	.000	42	572.838	664.685	.165	2252.243
3	.000	.000	.000	.000	43	572.793	664.685	.165	2252.242
4	.000	.000	.000	.000	44	572.793	664.685	.165	2252.242
5	900.000	300.000	16.648	35.434	45	572.749	664.685	.165	2252.241
6	899.933	749.937	3.673	160.857	46	572.678	664.685	.165	2252.240
7	893.112	749.937	3.645	160.881	47	572.657	1559.388	.071	5383.651
8	893.098	749.937	3.645	160.882	48	572.729	664.685	.165	2252.241
9	477.689	749.937	1.949	162.393	49	572.656	664.685	.000	.000
10	477.662	749.937	1.949	162.393	50	572.657	958.155	.115	3276.304
11	95.707	749.937	.390	163.802	51	572.593	958.155	.115	3276.303
12	200.000	717.114	.000	.000	52	572.555	958.155	.115	3276.302
13	199.989	631.072	.000	.000	53	572.483	.000	.000	.000
14	199.989	631.072	.000	.000	54	572.504	774.090	.138	2635.633
15	199.989	631.072	.000	.000	55	572.511	958.155	.115	3276.301
16	200.000	798.118	.000	.000	56	572.504	149.954	.736	345.688
17	200.000	798.118	.000	.000	57	572.451	774.090	.138	2635.632
18	200.000	798.118	.000	.000	58	572.095	749.941	.144	2550.999
19	199.992	737.747	.000	.000	59	572.044	749.941	.144	2550.998
20	.000	.000	.000	.000	60	95.376	749.941	.024	2540.869
21	.000	.000	.000	.000	61	87.421	1940.832	.009	6736.753
22	.000	.000	.000	.000	62	87.399	1940.832	.000	.000
23	.000	.000	.000	.000	63	20.092	1664.998	.000	.000
24	.000	.000	.000	.000	64	15.013	1563.034	.000	.000
25	.000	.000	.000	.000	65	14.953	1563.034	.000	.000
26	575.000	55.000	3.984	-45.499	66	14.776	1271.747	.000	.000
27	574.971	55.000	3.984	-45.500	67	14.700	1271.747	.000	.000
28	574.915	207.460	.513	543.951	68	.000	.000	.000	.000
29	574.901	207.460	.513	543.951	69	.000	.000	.000	.000
30	574.901	207.460	.513	543.951	70	.000	830.000	.000	.000
31	574.886	207.460	.513	543.952	71	.000	760.810	.000	.000
32	574.618	460.066	.228	1525.923	72	.000	761.165	.000	.000
33	574.586	460.066	.228	1525.922	73	.000	.000	.000	.000
34	574.586	460.066	.228	1525.922	74	.000	.000	.000	.000
35	574.554	460.066	.228	1525.922	75	.000	.000	.000	.000
36	574.173	769.458	.140	2619.436	76	.000	.000	.000	.000
37	574.121	769.448	.140	2619.402	77	.000	.000	.000	.000
38	574.121	769.448	.140	2619.402	78	.000	.000	.000	.000
39	574.069	769.448	.140	2619.401	79	.000	.000	.000	.000
40	573.263	487.891	.215	1627.667	80	.000	.000	.000	1.000

* CONDITION * BYPASS AMBIENT PRESSURE .00 PSIA. 15 DEC 72 12:41:20

HYDRAULIC POWER	10.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	33.58	SPC	3.396	AMW	3.37
HYDRAULIC PUMP	30.57	LUBE PUMP	4.00	SECOND STAGE	34.99	O/F	.671		
TOTAL GEAR BOX	40.57			TOTAL TURBINE	68.57	PT OUT	.398		

TURBINE INFORMATION

FLOW	2.296	PRESSURE	63.19	1.90	EFFICIENCY 1ST	.437	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1942.4	1375.9	EFFICIENCY 2ND	.404	A2	.2335	A4	.6096
PRESSURE RATIO	33.21	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.484	HP	68.57	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	894.03	732.25	750.03	750.03	750.03
PRESSURE IN	573.68	573.76	896.38	479.49	573.42
PRESSURE OUT	573.68	573.74	479.50	69.20	68.96
EFFECTIVE AREA	1.00000	.49969	.00084	.00157	.00785
FLOW	1.170	1.029	.922	.922	1.374

HX NO.	FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1 COLD SIDE	1.374	574.98	574.96	55.00	155.12	-45.5	362.7	.119	1.000	1.000	560.80 BTU/MIN
HOT SIDE	.204	573.69	573.69	894.03	86.97	3053.4	112.4	.962	1.000	1.000	4 PASS COUNT
HX NO.	FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3 COLD SIDE	1.374	574.95	574.82	155.12	459.93	362.7	1525.4	.450	1.000	1.000	1597.37 BTU/MIN
HOT SIDE	1.374	574.51	574.05	832.37	487.04	2839.0	1624.6	.510	1.000	1.000	6 PASS PARALL
HX NO.	FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5 COLD SIDE	1.374	574.79	574.57	459.93	832.37	1525.4	2839.0	.964	1.000	1.000	1804.65 BTU/MIN
HOT SIDE	57.000	200.00	200.00	846.42	796.34	.0	.0	.130	1.000	1.000	4 PASS COUNT
HX NO.	FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6 COLD SIDE	1.374	574.04	573.82	487.04	732.25	1624.6	2489.0	.865	1.000	1.000	1187.62 BTU/MIN
HOT SIDE	28.500	200.00	200.00	770.40	687.90	.0	.0	.291	1.000	1.000	4 PASS COUNT
HX NO.	FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8 COLD SIDE	.345	573.75	573.74	732.25	1375.73	2489.0	4736.5	****	1.000	1.000	775.90 BTU/MIN
HOT SIDE	2.296	1.68	.89	1375.91	1215.42	.0	.0	.249	1.000	1.000	2 PASS COUNT
HX NO.	FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9 COLD SIDE	1.374	573.66	573.45	774.22	750.03	2636.1	2551.3	.051	1.000	1.000	-116.47 BTU/MIN
HOT SIDE	.922	900.00	899.96	300.00	750.03	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.037	487.038	.216	1624.574
2	.000	.000	.000	.000	42	573.821	732.249	.149	2489.036
3	.000	.000	.000	.000	43	573.795	732.249	.149	2489.035
4	.000	.000	.000	.000	44	573.795	732.249	.149	2489.035
5	900.000	300.000	16.648	35.434	45	573.769	732.249	.149	2489.035
6	899.960	750.027	3.673	160.878	46	573.745	732.249	.149	2489.034
7	896.390	750.027	3.658	160.891	47	573.737	1375.732	.080	4736.458
8	896.382	750.027	3.658	160.891	48	573.755	732.249	.149	2489.034
9	479.500	750.027	1.956	162.408	49	573.737	732.249	.000	.000
10	479.486	750.027	1.956	162.408	50	573.737	894.026	.122	3053.368
11	69.204	750.027	.282	163.937	51	573.706	894.026	.122	3053.367
12	200.000	770.397	.000	.000	52	573.684	894.026	.122	3053.366
13	199.996	687.903	.000	.000	53	573.676	.000	.000	.000
14	199.996	687.903	.000	.000	54	573.687	774.219	.139	2636.113
15	199.996	687.903	.000	.000	55	573.689	894.026	.122	3053.367
16	200.000	846.424	.000	.000	56	573.687	86.972	1.808	112.419
17	200.000	846.424	.000	.000	57	573.660	774.219	.139	2636.112
18	200.000	846.424	.000	.000	58	573.448	750.028	.144	2551.332
19	199.996	796.336	.000	.000	59	573.422	750.028	.144	2551.332
20	.000	.000	.000	.000	60	68.964	750.028	.018	2540.608
21	.000	.000	.000	.000	61	63.204	1942.398	.006	6742.269
22	.000	.000	.000	.000	62	63.188	1942.398	.000	.000
23	.000	.000	.000	.000	63	14.068	1665.001	.000	.000
24	.000	.000	.000	.000	64	1.903	1375.915	.000	.000
25	.000	.000	.000	.000	65	1.684	1375.915	.000	.000
26	575.000	55.000	3.984	-45.499	66	.889	1215.417	.000	.000
27	574.985	55.000	3.984	-45.500	67	.398	.000	.000	.000
28	574.963	155.121	.711	362.705	68	.000	.000	.000	.000
29	574.958	155.121	.711	362.705	69	.000	.000	.000	.000
30	574.958	155.121	.711	362.705	70	.000	830.000	.000	.000
31	574.953	155.121	.711	362.705	71	.000	809.801	.000	.000
32	574.819	459.928	.229	1525.417	72	.000	810.765	.000	.000
33	574.803	459.928	.229	1525.417	73	.000	.000	.000	.000
34	574.803	459.928	.229	1525.417	74	.000	.000	.000	.000
35	574.786	459.928	.229	1525.417	75	.000	.000	.000	.000
36	574.573	832.367	.129	2839.012	76	.000	.000	.000	.000
37	574.543	832.366	.129	2839.009	77	.000	.000	.000	.000
38	574.543	832.366	.129	2839.009	78	.000	.000	.000	.000
39	574.514	832.366	.129	2839.008	79	.000	.000	.000	.000
40	574.055	487.038	.216	1624.574	80	.000	.000	.000	1.000

* CONDITION * BYPASS AMBIENT PRESSURE .00 PSIA. 15 DEC 72 12:41:41

HYDRAULIC POWER	90.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	75.08	SPC	2.395	AMW	3.38
HYDRAULIC PUMP	35.14	LUBE PUMP	4.00	SECOND STAGE	78.07	O/F	.676		
TOTAL GEAR BOX	125.14			TOTAL TURBINE	153.14	PT OUT	.797		

TURBINE INFORMATION

FLOW	4.995	PRESSURE	137.57	3.82	EFFICIENCY 1ST	.443	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1950.7	1368.0	EFFICIENCY 2ND	.404	A2	.2335	A4	.6096
PRESSURE RATIO	35.99	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.489	HP	153.14	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	953.68	616.36	749.94	749.94	749.96
PRESSURE IN	568.92	569.54	882.76	478.31	567.79
PRESSURE OUT	568.62	569.17	478.38	150.76	150.23
EFFECTIVE AREA	.31036	.15737	.00186	.00344	.01720
FLOW	2.284	1.602	2.015	2.015	2.980

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	2.980	574.93	574.80	55.00	202.90	-45.5	527.2	.165	1.000	1.000	1706.72 BTU/MIN
	HOT SIDE	.696	568.80	568.78	953.68	185.59	3260.7	466.3	.855	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	2.980	574.73	574.10	202.90	460.05	527.2	1525.9	.437	1.000	1.000	2975.91 BTU/MIN
	HOT SIDE	2.980	572.76	570.77	791.15	503.49	2695.4	1684.2	.489	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	2.980	573.94	573.02	460.05	791.19	1525.9	2695.6	.836	1.000	1.000	3485.64 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	856.06	758.09	.0	.0	.247	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	2.980	570.68	569.77	503.49	616.36	1684.2	2082.8	.618	1.000	1.000	1188.03 BTU/MIN
	HOT SIDE	28.500	200.00	199.98	686.23	597.91	.0	.0	.483	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.377	569.24	569.17	616.36	1346.11	2082.8	4632.0	.971	1.000	1.000	3511.43 BTU/MIN
	HOT SIDE	4.995	3.31	1.78	1367.96	1033.87	.0	.0	.445	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	2.980	568.65	567.92	774.32	749.96	2636.4	2551.0	.051	1.000	1.000	-254.43 BTU/MIN
	HOT SIDE	2.015	900.00	899.85	300.00	749.94	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

Computer Case 39B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	570.684	503.495	.208	1684.168
2	.000	.000	.000	.000	42	569.774	616.361	.175	2082.839
3	.000	.000	.000	.000	43	569.672	616.361	.175	2082.837
4	.000	.000	.000	.000	44	569.672	616.361	.175	2082.837
5	900.000	300.000	16.648	35.434	45	569.570	616.361	.175	2082.835
6	899.851	749.936	3.673	160.856	46	569.242	616.361	.175	2082.829
7	882.799	749.936	3.603	160.919	47	569.169	1346.114	.081	4631.973
8	882.763	749.936	3.603	160.919	48	569.540	616.361	.175	2082.834
9	478.380	749.936	1.952	162.390	49	569.169	616.361	.000	.000
10	478.313	749.936	1.951	162.391	50	569.169	953.678	.115	3260.659
11	150.757	749.936	.615	163.617	51	569.013	953.678	.115	3260.655
12	200.000	686.230	.000	.000	52	568.922	953.678	.115	3260.653
13	199.977	597.912	.000	.000	53	568.622	.000	.000	.000
14	199.977	597.912	.000	.000	54	568.783	774.325	.137	2636.376
15	199.977	597.912	.000	.000	55	568.801	953.678	.115	3260.650
16	200.000	856.057	.000	.000	56	568.783	185.586	.574	466.286
17	200.000	856.057	.000	.000	57	568.653	774.325	.137	2636.373
18	200.000	856.057	.000	.000	58	567.918	749.965	.143	2550.993
19	199.995	758.091	.000	.000	59	567.793	749.965	.143	2550.990
20	.000	.000	.000	.000	60	150.228	749.965	.038	2542.123
21	.000	.000	.000	.000	61	137.610	1950.652	.013	6774.113
22	.000	.000	.000	.000	62	137.575	1950.652	.000	.000
23	.000	.000	.000	.000	63	30.001	1664.999	.000	.000
24	.000	.000	.000	.000	64	3.822	1367.958	.000	.000
25	.000	.000	.000	.000	65	3.310	1367.958	.000	.000
26	575.000	55.000	3.984	-45.499	66	1.780	1033.871	.000	.000
27	574.928	55.000	3.984	-45.500	67	.797	.000	.000	.000
28	574.799	202.902	.526	527.230	68	.000	.000	.000	.000
29	574.765	202.902	.526	527.231	69	.000	.000	.000	.000
30	574.765	202.902	.526	527.231	70	.000	830.000	.000	.000
31	574.731	202.902	.526	527.232	71	.000	819.727	.000	.000
32	574.099	460.054	.228	1525.871	72	.000	820.683	.000	.000
33	574.021	460.054	.228	1525.870	73	.000	.000	.000	.000
34	574.021	460.054	.228	1525.870	74	.000	.000	.000	.000
35	573.942	460.054	.228	1525.869	75	.000	.000	.000	.000
36	573.024	791.186	.134	2695.557	76	.000	.000	.000	.000
37	572.891	791.155	.134	2695.444	77	.000	.000	.000	.000
38	572.891	791.155	.134	2695.444	78	.000	.000	.000	.000
39	572.758	791.155	.134	2695.441	79	.000	.000	.000	.000
40	570.771	503.495	.208	1684.169	80	.000	.000	.000	1.000

* CONDITION * BYPASS AMBIENT PRESSURE .00 PSIA. 15 DEC 72 12:42:14

HYDRAULIC POWER	180.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	121.85	SPC	2.171	AMW	3.39
HYDRAULIC PUMP	40.29	LUBE PUMP	4.00	SECOND STAGE	126.44	O/F	.679		
TOTAL GEAR BOX	220.29			TOTAL TURBINE	248.29	PT OUT	1.202		

TURBINE INFORMATION

FLOW	7.972	PRESSURE	219.67	5.81	EFFICIENCY 1ST	.447	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1955.9	1363.2	EFFICIENCY 2ND	.405	A2	.2335	A4	.6096
PRESSURE RATIO	37.84	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.492	HP	248.29	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1018.51	577.26	749.79	749.79	749.93
PRESSURE IN	558.85	561.12	853.29	469.98	555.33
PRESSURE OUT	557.56	559.46	470.16	240.79	239.94
EFFECTIVE AREA	.21160	.08364	.00309	.00560	.02802
FLOW	3.095	1.845	3.225	3.225	4.747

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	4.747	574.82	574.42	55.00	255.82	-45.5	730.8	.208	1.000	1.000	3685.15 BTU/MIN
	HOT SIDE	1.652	557.74	557.56	1018.51	317.22	3485.8	977.2	.728	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	4.747	574.20	572.55	255.82	460.08	730.8	1525.9	.430	1.000	1.000	3774.29 BTU/MIN
	HOT SIDE	4.747	569.38	564.71	731.38	506.63	2485.9	1695.4	.473	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	4.747	572.15	569.99	460.08	731.45	1525.9	2486.1	.681	1.000		4558.04 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	858.46	728.59	.0	.0	.326	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	4.747	564.49	561.65	506.63	577.26	1695.4	1945.7	.454	1.000	1.000	1188.00 BTU/MIN
	HOT SIDE	28.500	200.00	199.95	662.03	571.93	.0	.0	.580	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	2.902	559.76	559.46	577.26	1299.06	1945.6	4465.9	.918	1.000	1.000	7313.81 BTU/MIN
	HOT SIDE	7.972	4.95	2.69	1363.18	926.76	.0	.0	.555	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	4.747	557.23	555.66	774.40	749.93	2636.4	2550.6	.052	1.000	1.000	-407.18 BTU/MIN
	HOT SIDE	3.225	900.00	899.65	300.00	749.79	35.4	160.8	.948	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	564.486	506.630	.204	1695.402
2	.000	.000	.000	.000	42	561.653	577.259	.182	1945.671
3	.000	.000	.000	.000	43	561.404	577.259	.182	1945.666
4	.000	.000	.000	.000	44	561.404	577.259	.182	1945.666
5	900.000	300.000	16.648	35.434	45	561.155	577.259	.182	1945.662
6	899.651	749.789	3.673	160.822	46	559.756	577.259	.181	1945.637
7	853.388	749.789	3.484	160.988	47	559.462	1299.065	.082	4465.935
8	853.292	749.789	3.484	160.989	48	561.117	577.259	.182	1945.661
9	470.155	749.789	1.919	162.385	49	559.462	577.259	.000	.000
10	469.980	749.789	1.918	162.386	50	559.463	1018.507	.106	3485.826
11	240.795	749.789	.982	163.236	51	559.034	1018.507	.106	3485.816
12	200.000	662.035	.000	.000	52	558.852	1018.507	.106	3485.812
13	199.951	571.927	.000	.000	53	557.563	.000	.000	.000
14	199.951	571.927	.000	.000	54	557.563	774.402	.135	2636.402
15	199.951	571.927	.000	.000	55	557.736	1018.507	.106	3485.786
16	200.000	858.459	.000	.000	56	557.563	317.216	.321	977.246
17	200.000	858.459	.000	.000	57	557.226	774.402	.135	2636.394
18	200.000	858.459	.000	.000	58	555.656	749.932	.140	2550.617
19	199.994	728.589	.000	.000	59	555.332	749.932	.140	2550.610
20	.000	.000	.000	.000	60	239.944	749.932	.061	2543.924
21	.000	.000	.000	.000	61	219.724	1955.874	.021	6795.129
22	.000	.000	.000	.000	62	219.667	1955.874	.000	.000
23	.000	.000	.000	.000	63	47.245	1664.999	.000	.000
24	.000	.000	.000	.000	64	5.806	1363.179	.000	.000
25	.000	.000	.000	.000	65	4.952	1363.179	.000	.000
26	575.000	55.000	3.984	-45.499	66	2.686	926.763	.000	.000
27	574.818	55.000	3.984	-45.502	67	1.202	.000	.000	.000
28	574.421	255.816	.411	730.826	68	.000	.000	.000	.000
29	574.311	255.816	.411	730.827	69	.000	.000	.000	.000
30	574.311	255.816	.411	730.827	70	.000	830.000	.000	.000
31	574.200	255.816	.411	730.829	71	.000	822.199	.000	.000
32	572.550	460.076	.228	1525.934	72	.000	823.153	.000	.000
33	572.351	460.076	.228	1525.931	73	.000	.000	.000	.000
34	572.351	460.076	.228	1525.931	74	.000	.000	.000	.000
35	572.151	460.076	.228	1525.929	75	.000	.000	.000	.000
36	569.993	731.446	.148	2486.141	76	.000	.000	.000	.000
37	569.688	731.377	.148	2485.894	77	.000	.000	.000	.000
38	569.688	731.377	.148	2485.894	78	.000	.000	.000	.000
39	569.381	731.377	.148	2485.888	79	.000	.000	.000	.000
40	564.709	506.630	.204	1695.405	80	.000	.000	.000	1.000

* CONDITION * BYPASS AMBIENT PRESSURE .00 PSIA. 15 DEC 72 12:42:51

HYDRAULIC POWER	270.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	168.73	SPC	2.076	AMW	3.39
HYDRAULIC PUMP	45.43	LUBE PUMP	4.00	SECOND STAGE	174.70	O/F	.682		
TOTAL GEAR BOX	315.43			TOTAL TURBINE	343.43	PT OUT	1.581		

TURBINE INFORMATION

FLOW	10.913	PRESSURE	300.79	7.69	EFFICIENCY 1ST	.450	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1959.5	1360.1	EFFICIENCY 2ND	.405	A2	.2335	A4	.6096
PRESSURE RATIO	39.12	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.494	HP	343.43	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1065.13	556.71	749.65	749.65	749.99
PRESSURE IN	545.00	550.67	806.77	477.70	536.45
PRESSURE OUT	540.08	546.11	478.03	329.79	328.62
EFFECTIVE AREA	.12742	.04554	.00452	.00804	.04022
FLOW	3.516	1.682	4.424	4.424	6.489

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	6.489	574.66	573.83	55.00	295.17	-45.5	888.7	.238	1.000	1.000	6062.35 BTU/MIN
	HOT SIDE	2.973	540.73	540.08	1065.13	430.87	3647.5	1417.2	.628	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	6.489	573.35	570.20	295.17	460.02	888.7	1525.7	.424	1.000	1.000	4133.51 BTU/MIN
	HOT SIDE	6.489	564.57	556.27	684.25	505.29	2320.6	1690.4	.460	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	6.489	569.45	565.64	460.02	684.28	1525.7	2320.8	.561	1.000	1.000	5159.49 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	859.99	711.76	.0	.0	.371	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	6.489	555.85	551.63	505.29	556.71	1690.4	1873.5	.355	1.000	1.000	1187.96 BTU/MIN
	HOT SIDE	28.500	200.00	199.93	650.01	559.23	.0	.0	.627	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	4.807	546.89	546.11	556.71	1243.06	1873.4	4268.2	.854	1.000	1.000	11512.01 BTU/MIN
	HOT SIDE	10.913	6.49	3.53	1360.08	857.69	.0	.0	.625	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	6.489	539.43	537.07	774.53	749.99	2636.5	2550.4	.052	1.000	1.000	-558.38 BTU/MIN
	HOT SIDE	4.424	900.00	899.36	300.00	749.65	35.4	160.8	.948	1.000	1.000	1 PASS PARALL

Computer Case 41B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	555.849	505.287	.202	1690.418
2	.000	.000	.000	.000	42	551.626	556.707	.184	1873.482
3	.000	.000	.000	.000	43	551.165	556.707	.183	1873.474
4	.000	.000	.000	.000	44	551.165	556.707	.183	1873.474
5	900.000	300.000	16.648	35.434	45	550.702	556.707	.183	1873.466
6	899.362	749.655	3.673	160.791	46	546.895	556.707	.182	1873.401
7	806.957	749.655	3.296	161.122	47	546.110	1243.057	.083	4268.235
8	806.766	749.655	3.295	161.123	48	550.671	556.707	.183	1873.465
9	478.027	749.655	1.951	162.327	49	546.111	556.707	.000	.000
10	477.704	749.655	1.950	162.328	50	546.110	1065.126	.099	3647.591
11	329.791	749.655	1.346	162.899	51	545.250	1065.126	.098	3647.571
12	200.000	650.011	.000	.000	52	544.997	1065.126	.098	3647.565
13	199.926	559.234	.000	.000	53	540.078	.000	.000	.000
14	199.926	559.234	.000	.000	54	540.077	774.534	.131	2636.486
15	199.926	559.234	.000	.000	55	540.729	1065.126	.098	3647.465
16	200.000	859.992	.000	.000	56	540.077	430.868	.229	1417.232
17	200.000	859.992	.000	.000	57	539.427	774.534	.130	2636.472
18	200.000	859.992	.000	.000	58	537.073	749.990	.135	2550.425
19	199.994	711.757	.000	.000	59	536.446	749.990	.135	2550.412
20	.000	.000	.000	.000	60	328.621	749.990	.084	2546.020
21	.000	.000	.000	.000	61	300.866	1959.511	.029	6810.667
22	.000	.000	.000	.000	62	300.789	1959.511	.000	.000
23	.000	.000	.000	.000	63	64.052	1665.000	.000	.000
24	.000	.000	.000	.000	64	7.690	1360.076	.000	.000
25	.000	.000	.000	.000	65	6.486	1360.076	.000	.000
26	575.000	55.000	3.984	-45.499	66	3.534	857.687	.000	.000
27	574.659	55.000	3.984	-45.504	67	1.581	.000	.000	.000
28	573.832	295.165	.355	888.705	68	.000	.000	.000	.000
29	573.593	295.165	.355	888.706	69	.000	.000	.000	.000
30	573.593	295.165	.355	888.706	70	.000	830.000	.000	.000
31	573.354	295.165	.354	888.707	71	.000	823.777	.000	.000
32	570.196	460.016	.227	1525.682	72	.000	824.730	.000	.000
33	569.822	460.016	.227	1525.677	73	.000	.000	.000	.000
34	569.822	460.016	.227	1525.677	74	.000	.000	.000	.000
35	569.448	460.016	.226	1525.673	75	.000	.000	.000	.000
36	565.643	684.275	.158	2320.751	76	.000	.000	.000	.000
37	565.107	684.248	.158	2320.646	77	.000	.000	.000	.000
38	565.107	684.248	.158	2320.646	78	.000	.000	.000	.000
39	564.570	684.248	.158	2320.635	79	.000	.000	.000	.000
40	556.270	505.287	.202	1690.424	80	.000	.000	.000	1.000

* CONDITION * BYPASS AMBIENT PRESSURE 14.70 PSIA. 19 DEC 72 15:49:24

HYDRAULIC POWER	350.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	220.94	SPC	2.123	AMW	3.39
HYDRAULIC PUMP	50.00	LUBE PUMP	4.00	SECOND STAGE	207.06	O/F	.684		
TOTAL GEAR BOX	400.00			TOTAL TURBINE	428.00	PT OUT	14.700		

TURBINE INFORMATION

FLOW	14.153	PRESSURE	390.18	18.26	EFFICIENCY 1ST	.452	A1	.1517	A3 .5538
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1962.6	1386.1	EFFICIENCY 2ND	.468	A2	.2335	A4 .6096
PRESSURE RATIO	21.37	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.531	HP	428.00	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1102.15	541.69	749.45	749.45	750.07
PRESSURE IN	523.87	535.34	723.15	484.04	503.57
PRESSURE OUT	509.22	~~525.71~~	484.57	427.87	426.35
EFFECTIVE AREA	.07766	~~.02716~~	.00680	.01472	.07359
FLOW	3.564	1.457	5.747	5.747	8.406

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	8.406	574.43	572.93	55.00	327.25	-45.5	1017.3	.260	1.000	1.000	8934.01 BTU/MIN
	HOT SIDE	4.842	511.18	509.23	1102.15	533.64	3775.5	1791.5	.543	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	8.406	572.04	566.65	327.25	459.93	1017.3	1525.3	.418	1.000	1.000	4270.55 BTU/MIN
	HOT SIDE	8.406	557.55	544.19	644.63	502.25	2181.7	1679.3	.449	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	8.406	565.39	559.28	459.93	644.54	1525.3	2181.4	.461	1.000	1.000	5515.07 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	860.13	700.66	.0	.0	.398	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	8.406	543.47	536.93	502.25	541.69	1679.3	1820.6	.285	1.000	1.000	1188.09 BTU/MIN
	HOT SIDE	28.500	200.00	199.90	640.63	549.58	.0	.0	.658	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	6.949	527.33	525.71	541.69	1219.69	1820.5	4185.4	.803	1.000	1.000	16433.23 BTU/MIN
	HOT SIDE	14.153	17.39	15.63	1386.11	832.81	.0	.0	.655	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	8.406	508.07	504.68	774.67	750.07	2636.3	2550.0	.052	1.000	1.000	-725.05 BTU/MIN
	HOT SIDE	5.747	900.00	898.94	300.00	749.45	35.4	160.7	.947	1.000	1.000	1 PASS PARALL

Computer Case 42B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	543.471	502.255	.198	1679.276
2	.000	.000	.000	.000	42	536.925	541.689	.182	1820.612
3	.000	.000	.000	.000	43	536.144	541.689	.182	1820.599
4	.000	.000	.000	.000	44	536.144	541.689	.182	1820.599
5	900.000	300.000	16.648	35.434	45	535.362	541.689	.182	1820.586
6	898.939	749.448	3.673	160.744	46	527.335	541.689	.179	1820.451
7	723.508	749.448	2.956	161.383	47	525.713	1219.687	.081	4185.387
8	723.148	749.448	2.954	161.385	48	535.339	541.689	.182	1820.586
9	484.575	749.448	1.979	162.256	49	525.710	541.689	.000	.000
10	484.037	749.448	1.976	162.258	50	525.712	1102.147	.091	3775.818
11	427.872	749.448	1.747	162.461	51	524.152	1102.147	.091	3775.781
12	200.000	640.635	.000	.000	52	523.871	1102.147	.091	3775.775
13	199.899	549.579	.000	.000	53	509.223	.000	.000	.000
14	199.899	549.579	.000	.000	54	509.225	774.674	.123	2636.302
15	199.899	549.579	.000	.000	55	511.178	1102.147	.089	3775.474
16	200.000	860.127	.000	.000	56	509.225	533.637	.175	1791.481
17	200.000	860.127	.000	.000	57	508.071	774.674	.123	2636.277
18	200.000	860.127	.000	.000	58	504.683	750.072	.127	2550.024
19	199.993	700.657	.000	.000	59	503.566	750.072	.127	2550.000
20	.000	.000	.000	.000	60	426.349	750.072	.108	2548.391
21	.000	.000	.000	.000	61	390.276	1962.597	.038	6824.477
22	.000	.000	.000	.000	62	390.175	1962.597	.000	.000
23	.000	.000	.000	.000	63	82.370	1665.002	.000	.000
24	.000	.000	.000	.000	64	18.259	1386.106	.000	.000
25	.000	.000	.000	.000	65	17.392	1386.106	.000	.000
26	575.000	55.000	3.984	-45.499	66	15.629	832.809	.000	.000
27	574.429	55.000	3.984	-45.507	67	14.700	832.809	.000	.000
28	572.934	327.253	.319	1017.293	68	.000	.000	.000	.000
29	572.488	327.253	.319	1017.293	69	.000	.000	.000	.000
30	572.488	327.253	.319	1017.293	70	.000	830.000	.000	.000
31	572.042	327.253	.319	1017.293	71	.000	824.685	.000	.000
32	566.653	459.931	.225	1525.322	72	.000	848.314	.000	.000
33	566.022	459.931	.225	1525.314	73	.000	.000	.000	.000
34	566.022	459.931	.225	1525.314	74	.000	.000	.000	.000
35	565.390	459.931	.225	1525.306	75	.000	.000	.000	.000
36	559.275	644.539	.166	2181.385	76	.000	.000	.000	.000
37	558.413	644.631	.165	2181.691	77	.000	.000	.000	.000
38	558.413	644.631	.165	2181.691	78	.000	.000	.000	.000
39	557.552	644.631	.165	2181.675	79	.000	.000	.000	.000
40	544.187	502.255	.199	1679.286	80	.000	.000	.000	1.000

* CONDITION * H2 TAN AMBIENT PRESSURE 14.70 PSIA. 26 FEB 73 15:05:16

HYDRAULIC POWER	-.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	42.91	SPC	5.343	AMW	2.78
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	15.09	O/F	.381		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	14.700		

TURBINE INFORMATION

FLOW	2.672	PRESSURE	80.25	14.91	EFFICIENCY 1ST	.414	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.367	TEMPERATURE	1921.4	1574.8	EFFICIENCY 2ND	.568	A2	.2335	A4	.6096
PRESSURE RATIO	5.38	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.496	HP	58.00	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1263.04	494.03	1236.25	1236.25	1236.25
PRESSURE IN	572.21	573.04	896.19	308.64	571.53
PRESSURE OUT	572.21	573.04	308.67	85.45	85.30
EFFECTIVE AREA	.00000	.00000	.00086	.00251	.01424
FLOW	1.934	.000	.738	.738	1.934

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.934	574.71	574.59	250.00	254.48	707.8	725.5	.004	1.000	1.000	34.24 BTU/MIN
	HOT SIDE	-.000	572.30	572.30	1263.04	250.00	4339.3	707.8	****	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.934	574.56	574.32	254.48	321.65	725.5	994.9	.457	1.000	1.000	521.02 BTU/MIN
	HOT SIDE	1.934	573.94	573.44	401.61	331.86	1307.2	1035.7	.474	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.934	574.27	574.00	321.65	496.10	994.9	1657.5	.712	1.000	1.000	1281.36 BTU/MIN
	HOT SIDE	57.000	200.00	198.45	566.83	520.24	.0	.0	.190	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.934	573.41	573.12	331.86	494.03	1035.7	1650.0	.704	1.000	1.000	1188.08 BTU/MIN
	HOT SIDE	28.500	200.00	195.74	562.09	465.87	.0	.0	.418	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	1.934	572.51	572.39	494.03	1263.05	1650.0	4339.3	.712	1.000	1.000	5200.98 BTU/MIN
	HOT SIDE	2.672	14.86	14.73	1574.81	649.51	.0	.0	.856	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.934	572.21	571.61	1263.04	1236.25	4339.3	4244.9	.028	1.000	1.000	-182.60 BTU/MIN
	HOT SIDE	.738	900.00	899.96	300.00	1236.25	35.4	278.6	.972	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.412	331.865	.315	1035.654
2	.000	.000	.000	.000	42	573.116	494.033	.212	1649.990
3	.000	.000	.000	.000	43	573.080	494.033	.212	1649.989
4	.000	.000	.000	.000	44	573.080	494.033	.212	1649.989
5	900.000	300.000	16.648	35.434	45	573.045	494.033	.212	1649.989
6	899.958	1236.252	2.165	278.603	46	572.513	494.033	.212	1649.981
7	896.193	1236.252	2.156	278.604	47	572.390	1263.046	.085	4339.312
8	896.185	1236.252	2.156	278.604	48	573.045	494.033	.212	1649.989
9	308.665	1236.252	.752	278.716	49	573.045	494.033	.000	.000
10	308.642	1236.252	.751	278.716	50	572.390	1263.040	.085	4339.293
11	85.445	1236.252	.209	278.761	51	572.302	1263.040	.085	4339.291
12	200.000	562.088	.000	.000	52	572.214	1263.040	.085	4339.289
13	195.744	465.869	.000	.000	53	572.214	.000	.000	.000
14	195.744	465.869	.000	.000	54	572.302	1263.040	.085	4339.291
15	195.744	465.869	.000	.000	55	572.302	1263.040	.085	4339.291
16	200.000	566.835	.000	.000	56	572.302	250.000	.419	707.845
17	200.000	566.835	.000	.000	57	572.214	1263.040	.085	4339.289
18	200.000	566.835	.000	.000	58	571.612	1236.252	.087	4244.872
19	198.450	520.244	.000	.000	59	571.525	1236.252	.087	4244.870
20	.000	.000	.000	.000	60	85.297	1236.252	.013	4233.110
21	.000	.000	.000	.000	61	80.267	1921.425	.008	6665.562
22	.000	.000	.000	.000	62	80.247	1921.425	.000	.000
23	.000	.000	.000	.000	63	18.832	1665.000	.000	.000
24	.000	.000	.000	.000	64	14.909	1574.814	.000	.000
25	.000	.000	.000	.000	65	14.856	1574.814	.000	.000
26	575.000	250.000	.421	707.803	66	14.733	649.515	.000	.000
27	574.714	250.000	.421	707.808	67	14.700	649.515	.000	.000
28	574.593	254.482	.413	725.515	68	.000	.000	.000	.000
29	574.575	254.482	.413	725.515	69	.000	.000	.000	.000
30	574.575	254.482	.413	725.515	70	.000	750.000	.000	.000
31	574.556	254.482	.413	725.516	71	.000	520.244	.000	.000
32	574.317	321.651	.326	994.926	72	.000	520.244	.000	.000
33	574.294	321.651	.326	994.926	73	.000	.000	.000	.000
34	574.294	321.651	.326	994.926	74	.000	.000	.000	.000
35	574.271	321.651	.326	994.926	75	.000	.000	.000	.000
36	573.999	496.100	.212	1657.494	76	.000	.000	.000	.000
37	573.970	401.608	.261	1307.208	77	.000	.000	.000	.000
38	573.970	401.608	.261	1307.208	78	.000	.000	.000	.000
39	573.941	401.608	.261	1307.208	79	.000	.000	.000	.000
40	573.436	331.865	.315	1035.654	80	.000	.000	.000	1.000

* CONDITION * H2 TAN AMBIENT PRESSURE 14.70 PSIA. 26 FEB 73 15:05:32

HYDRAULIC POWER	5.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	45.89	SPC	4.789	AMW	2.77
HYDRAULIC PUMP	30.29	LUBE PUMP	4.00	SECOND STAGE	17.40	O/F	.374		
TOTAL GEAR BOX	35.29			TOTAL TURBINE	63.29	PT OUT	14.700		

TURBINE INFORMATION

FLOW	2.817	PRESSURE	84.87	14.94	EFFICIENCY 1ST	.412	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.367	TEMPERATURE	1923.8	1566.9	EFFICIENCY 2ND	.566	A2	.2335	A4	.6096
PRESSURE RATIO	5.68	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.498	HP	63.29	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1278.29	574.96	1251.59	1251.59	1251.59
PRESSURE IN	571.35	572.38	895.83	302.14	570.59
PRESSURE OUT	571.35	572.38	302.17	90.24	90.09
EFFECTIVE AREA	.00000	.00000	.00090	.00268	.01521
FLOW	2.050	.000	.767	.767	2.050

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	2.050	574.68	574.54	250.00	254.29	707.8	724.8	.004	1.000	1.000	34.75 BTU/MIN
	HOT SIDE	-.000	571.45	571.45	1278.29	250.00	4393.0	707.9	****	1.000	1.000	4 PASS COUNT
3	COLD SIDE	2.050	574.50	574.20	254.29	396.75	724.8	1288.7	.452	1.000	1.000	1155.86 BTU/MIN
	HOT SIDE	2.050	573.65	572.90	569.31	414.96	1918.0	1357.8	.490	1.000	1.000	6 PASS PARALL
5	COLD SIDE	2.050	574.14	573.74	396.75	669.38	1288.7	2268.7	.845	1.000	1.000	2008.82 BTU/MIN
	HOT SIDE	57.000	200.00	199.97	719.47	655.94	.0	.0	.197	1.000	1.000	4 PASS COUNT
6	COLD SIDE	2.050	572.87	572.47	414.96	574.96	1357.8	1937.8	.726	1.000	1.000	1188.87 BTU/MIN
	HOT SIDE	28.500	200.00	199.88	635.48	544.23	.0	.0	.414	1.000	1.000	4 PASS COUNT
8	COLD SIDE	2.050	571.70	571.55	574.96	1278.32	1937.8	4393.1	.709	1.000	1.000	5032.67 BTU/MIN
	HOT SIDE	2.817	14.88	14.74	1566.88	716.54	.0	.0	.857	1.000	1.000	2 PASS COUNT
9	COLD SIDE	2.050	571.35	570.69	1278.29	1251.59	4393.0	4298.9	.027	1.000	1.000	-192.90 BTU/MIN
	HOT SIDE	.767	900.00	899.95	300.00	1251.59	35.4	282.5	.973	1.000	1.000	1 PASS PARALL

Computer Case 44 (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	572.866	414.957	.252	1357.794
2	.000	.000	.000	.000	42	572.469	574.962	.186	1937.811
3	.000	.000	.000	.000	43	572.424	574.962	.186	1937.810
4	.000	.000	.000	.000	44	572.424	574.962	.186	1937.810
5	900.000	300.000	16.648	35.434	45	572.378	574.962	.186	1937.810
6	899.955	1251.593	2.146	282.514	46	571.696	574.962	.186	1937.798
7	895.836	1251.593	2.136	282.515	47	571.552	1278.317	.085	4393.110
8	895.827	1251.593	2.136	282.515	48	572.378	574.962	.186	1937.810
9	302.166	1251.593	.729	282.612	49	572.378	574.962	.000	.000
10	302.140	1251.593	.729	282.612	50	571.552	1278.294	.085	4393.027
11	90.242	1251.593	.219	282.645	51	571.452	1278.294	.085	4393.025
12	200.000	635.477	.000	.000	52	571.352	1278.294	.085	4393.023
13	199.881	544.235	.000	.000	53	571.352	.000	.000	.000
14	199.881	544.235	.000	.000	54	571.452	1278.294	.085	4393.025
15	199.881	544.235	.000	.000	55	571.452	1278.294	.085	4393.025
16	200.000	719.471	.000	.000	56	571.452	250.000	.419	707.859
17	200.000	719.471	.000	.000	57	571.352	1278.294	.085	4393.022
18	200.000	719.471	.000	.000	58	570.686	1251.593	.086	4298.911
19	199.974	655.939	.000	.000	59	570.587	1251.593	.086	4298.909
20	.000	.000	.000	.000	60	90.092	1251.593	.014	4287.287
21	.000	.000	.000	.000	61	84.897	1923.792	.008	6674.356
22	.000	.000	.000	.000	62	84.875	1923.792	.000	.000
23	.000	.000	.000	.000	63	19.468	1665.000	.000	.000
24	.000	.000	.000	.000	64	14.939	1566.877	.000	.000
25	.000	.000	.000	.000	65	14.881	1566.877	.000	.000
26	575.000	250.000	.421	707.803	66	14.741	716.540	.000	.000
27	574.679	250.000	.421	707.808	67	14.700	716.540	.000	.000
28	574.543	254.292	.413	724.764	68	.000	.000	.000	.000
29	574.523	254.292	.413	724.764	69	.000	.000	.000	.000
30	574.523	254.292	.413	724.764	70	.000	750.000	.000	.000
31	574.503	254.292	.413	724.764	71	.000	679.454	.000	.000
32	574.200	396.754	.264	1288.677	72	.000	679.835	.000	.000
33	574.168	396.754	.264	1288.677	73	.000	.000	.000	.000
34	574.168	396.754	.264	1288.677	74	.000	.000	.000	.000
35	574.136	396.754	.264	1288.677	75	.000	.000	.000	.000
36	573.741	669.385	.164	2268.730	76	.000	.000	.000	.000
37	573.696	569.307	.188	1918.013	77	.000	.000	.000	.000
38	573.696	569.307	.188	1918.013	78	.000	.000	.000	.000
39	573.651	569.307	.188	1918.013	79	.000	.000	.000	.000
40	572.900	414.957	.252	1357.794	80	.000	.000	.000	1.000

* CONDITION * H2 TAN AMBIENT PRESSURE 14.70 PSIA. 26 FEB 73 15:05:55

HYDRAULIC POWER	10.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	48.79	SPC	4.396	AMW	2.78
HYDRAULIC PUMP	30.57	LUBE PUMP	4.00	SECOND STAGE	19.78	O/F	.378		
TOTAL GEAR BOX	40.57			TOTAL TURBINE	68.57	PT OUT	14.700		

TURBINE INFORMATION

FLOW	2.973	PRESSURE	89.52	14.96	EFFICIENCY 1ST	.412	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.367	TEMPERATURE	1926.3	1559.0	EFFICIENCY 2ND	.563	A2	.2335	A4	.6096
PRESSURE RATIO	5.98	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.500	HP	68.57	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1273.94	579.81	1247.08	1247.08	1247.08
PRESSURE IN	570.90	572.04	895.30	305.11	570.07
PRESSURE OUT	570.90	572.04	305.13	95.26	95.09
EFFECTIVE AREA	.00000	.00000	.00096	.00281	.01599
FLOW	2.157	.000	.816	.816	2.157

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	2.157	574.64	574.50	250.00	254.06	707.8	723.9	.004	1.000	1.000	34.61 BTU/MIN
	HOT SIDE	-.000	571.01	571.01	1273.94	250.00	4377.7	707.9	****	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	2.157	574.45	574.11	254.06	407.36	723.9	1329.1	.451	1.000	1.000	1305.48 BTU/MIN
	HOT SIDE	2.157	573.49	572.63	594.13	427.28	2005.0	1404.1	.491	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	2.157	574.04	573.59	407.36	693.98	1329.1	2354.9	.849	1.000	1.000	2212.86 BTU/MIN
	HOT SIDE	57.000	200.00	199.98	745.11	676.71	.0	.0	.203	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	2.157	572.59	572.14	427.28	579.81	1404.1	1954.8	.712	1.000	1.000	1187.83 BTU/MIN
	HOT SIDE	28.500	200.00	199.90	641.59	550.74	.0	.0	.424	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	2.157	571.28	571.12	579.81	1273.94	1954.8	4377.7	.709	1.000	1.000	5226.29 BTU/MIN
	HOT SIDE	2.973	14.90	14.75	1559.03	722.32	.0	.0	.854	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	2.157	570.90	570.18	1273.94	1247.08	4377.7	4283.0	.028	1.000	1.000	-204.24 BTU/MIN
	HOT SIDE	.816	900.00	899.95	300.00	1247.08	35.4	281.4	.972	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	572.587	427.278	.245	1404.133
2	.000	.000	.000	.000	42	572.142	579.812	.185	1954.802
3	.000	.000	.000	.000	43	572.091	579.812	.185	1954.801
4	.000	.000	.000	.000	44	572.091	579.812	.185	1954.801
5	900.000	300.000	16.648	35.434	45	572.040	579.812	.185	1954.800
6	899.950	1247.076	2.151	281.362	46	571.280	579.812	.185	1954.786
7	895.307	1247.076	2.141	281.363	47	571.120	1273.936	.085	4377.658
8	895.297	1247.076	2.141	281.364	48	572.040	579.812	.185	1954.800
9	305.134	1247.076	.738	281.464	49	572.040	579.812	.000	.000
10	305.105	1247.076	.738	281.464	50	571.120	1273.939	.085	4377.671
11	95.256	1247.076	.232	281.500	51	571.010	1273.939	.085	4377.668
12	200.000	641.588	.000	.000	52	570.899	1273.939	.085	4377.665
13	199.902	550.745	.000	.000	53	570.899	.000	.000	.000
14	199.902	550.745	.000	.000	54	571.010	1273.939	.085	4377.668
15	199.902	550.745	.000	.000	55	571.010	1273.939	.085	4377.668
16	200.000	745.111	.000	.000	56	571.010	250.000	.418	707.865
17	200.000	745.111	.000	.000	57	570.899	1273.939	.085	4377.665
18	200.000	745.111	.000	.000	58	570.177	1247.076	.086	4282.981
19	199.982	676.707	.000	.000	59	570.068	1247.076	.086	4282.978
20	.000	.000	.000	.000	60	95.094	1247.076	.014	4271.491
21	.000	.000	.000	.000	61	89.540	1926.347	.009	6683.842
22	.000	.000	.000	.000	62	89.516	1926.347	.000	.000
23	.000	.000	.000	.000	63	20.165	1665.000	.000	.000
24	.000	.000	.000	.000	64	14.963	1559.028	.000	.000
25	.000	.000	.000	.000	65	14.899	1559.028	.000	.000
26	575.000	250.000	.421	707.803	66	14.746	722.323	.000	.000
27	574.644	250.000	.421	707.809	67	14.700	722.323	.000	.000
28	574.495	254.061	.414	723.853	68	.000	.000	.000	.000
29	574.472	254.061	.414	723.853	69	.000	.000	.000	.000
30	574.472	254.061	.414	723.853	70	.000	750.000	.000	.000
31	574.450	254.061	.414	723.853	71	.000	706.024	.000	.000
32	574.111	407.356	.257	1329.067	72	.000	706.769	.000	.000
33	574.074	407.356	.257	1329.067	73	.000	.000	.000	.000
34	574.074	407.356	.257	1329.067	74	.000	.000	.000	.000
35	574.038	407.356	.257	1329.066	75	.000	.000	.000	.000
36	573.590	693.984	.158	2354.935	76	.000	.000	.000	.000
37	573.539	594.132	.182	2005.008	77	.000	.000	.000	.000
38	573.539	594.132	.182	2005.008	78	.000	.000	.000	.000
39	573.487	594.132	.182	2005.007	79	.000	.000	.000	.000
40	572.625	427.278	.245	1404.134	80	.000	.000	.000	1.000

* CONDITION * H2 TAN AMBIENT PRESSURE 14.70 PSIA. 26 FEB 73 15:06:08

HYDRAULIC POWER	90.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	88.79	SPC	2.571	AMW	2.90
HYDRAULIC PUMP	35.14	LUBE PUMP	4.00	SECOND STAGE	64.35	O/F	.439		
TOTAL GEAR BOX	125.14			TOTAL TURBINE	153.14	PT OUT	14.700		

TURBINE INFORMATION

FLOW	5.362	PRESSURE	158.63	15.41	EFFICIENCY 1ST	.420	A1	.1517	A3	.5538
SPECIFIC HEAT RATIO	1.365	TEMPERATURE	1939.1	1466.3	EFFICIENCY 2ND	.527	A2	.2335	A4	.6096
PRESSURE RATIO	10.30	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.526	HP	153.14	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1181.05	495.42	1152.86	1152.86	1152.87
PRESSURE IN	563.66	566.73	882.56	348.95	561.74
PRESSURE OUT	563.66	566.73	349.04	170.50	170.12
EFFECTIVE AREA	.00000	.00000	.00188	.00474	.02696
FLOW	3.727	.000	1.635	1.635	3.727

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	3.727	573.94	573.52	250.00	252.14	707.8	716.3	.002	1.000	1.000	31.55 BTU/MIN
	HOT SIDE	-.000	563.98	563.98	1181.05	250.00	4051.0	708.0	****	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	3.727	573.38	572.46	252.14	380.51	716.3	1226.3	.434	1.000	1.000	1900.55 BTU/MIN
	HOT SIDE	3.727	570.76	568.40	548.12	409.21	1843.7	1336.0	.469	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	3.727	572.25	571.05	380.51	648.05	1226.3	2193.9	.677	1.000	1.000	3605.92 BTU/MIN
	HOT SIDE	57.000	200.00	199.98	775.87	664.78	.0	.0	.281	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	3.727	568.29	566.99	409.21	495.42	1336.0	1654.9	.507	1.000	1.000	1186.48 BTU/MIN
	HOT SIDE	28.500	200.00	198.57	579.29	484.07	.0	.0	.560	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	3.727	564.72	564.29	495.42	1181.06	1654.9	4051.1	.706	1.000	1.000	8929.63 BTU/MIN
	HOT SIDE	5.362	15.23	14.83	1466.34	673.93	.0	.0	.816	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	3.727	563.66	562.04	1181.05	1152.87	4051.0	3953.0	.032	1.000	1.000	-365.27 BTU/MIN
	HOT SIDE	1.635	900.00	899.86	300.00	1152.86	35.4	258.0	.968	1.000	1.000	1 PASS PARALL

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* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 18 DEC 72 16:01:52

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	27.97	SPC	3.540	AMW	3.51
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	30.03	O/F	.742		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	.313		

TURBINE INFORMATION

FLOW	1.770	PRESSURE	60.43	1.50	EFFICIENCY 1ST	.467	A1	.1235	A3	.4509
SPECIFIC HEAT RATIO	1.352	TEMPERATURE	2058.5	1418.8	EFFICIENCY 2ND	.417	A2	.1901	A4	.4963
PRESSURE RATIO	40.39	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.503	HP	58.00	N	70000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	842.74	755.33	750.00	750.00	750.00
PRESSURE IN	574.36	574.38	897.58	530.52	574.21
PRESSURE OUT	574.36	574.38	530.53	64.73	64.59
EFFECTIVE AREA	*******	-10.10000	.00069	.00116	.00580
FLOW	.931	.883	.754	.754	1.016

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.016	574.99	574.98	55.00	110.60	-45.5	212.8	.071	1.000	1.000	262.51 BTU/MIN
	HOT SIDE	.086	574.37	574.37	842.74	59.48	2875.1	-30.1	.994	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.016	574.98	574.92	110.60	400.00	212.8	1301.1	.446	1.000	1.000	1105.95 BTU/MIN
	HOT SIDE	1.016	574.76	574.55	759.36	426.46	2584.1	1401.1	.513	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.016	574.90	574.79	400.00	759.36	1301.1	2584.1	.971	1.000	1.000	1303.84 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	770.06	731.82	.0	.0	.103	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.016	574.54	574.42	426.46	755.33	1401.1	2569.9	.916	1.000	1.000	1187.86 BTU/MIN
	HOT SIDE	28.500	200.00	200.00	785.66	704.38	.0	.0	.226	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.134	574.39	574.39	755.33	1418.75	2569.9	4888.1	****	1.000	1.000	309.93 BTU/MIN
	HOT SIDE	1.770	1.33	.70	1418.82	1335.73	.0	.0	.125	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.016	574.35	574.23	776.72	750.00	2644.9	2551.3	.056	1.000	1.000	-95.17 BTU/MIN
	HOT SIDE	.754	900.00	899.97	300.00	750.00	35.4	160.9	.944	1.000	1.000	1 PASS PARALL

Computer Case 52 (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.542	426.459	.246	1401.082
2	.000	.000	.000	.000	42	574.424	755.333	.143	2569.942
3	.000	.000	.000	.000	43	574.410	755.333	.143	2569.942
4	.000	.000	.000	.000	44	574.410	755.333	.143	2569.942
5	900.000	300.000	16.648	35.434	45	574.395	755.333	.143	2569.941
6	899.971	750.001	3.673	160.872	46	574.392	755.333	.143	2569.941
7	897.585	750.001	3.663	160.880	47	574.389	1418.750	.078	4888.073
8	897.580	750.001	3.663	160.880	48	574.384	755.333	.143	2569.941
9	530.528	750.001	2.164	162.218	49	574.384	755.333	.000	.000
10	530.520	750.001	2.164	162.218	50	574.389	842.740	.128	2875.073
11	64.727	750.001	.264	163.952	51	574.373	842.740	.128	2875.073
12	200.000	785.659	.000	.000	52	574.360	842.740	.128	2875.072
13	199.997	704.382	.000	.000	53	574.359	.000	.000	.000
14	199.997	704.382	.000	.000	54	574.370	776.723	.138	2644.902
15	199.997	704.382	.000	.000	55	574.370	842.740	.128	2875.073
16	200.000	770.058	.000	.000	56	574.370	59.475	3.752	-30.109
17	200.000	770.058	.000	.000	57	574.355	776.723	.138	2644.902
18	200.000	770.058	.000	.000	58	574.227	750.001	.145	2551.255
19	199.990	731.824	.000	.000	59	574.213	750.001	.145	2551.255
20	.000	.000	.000	.000	60	64.593	750.001	.017	2540.419
21	.000	.000	.000	.000	61	60.441	2058.495	.006	7168.415
22	.000	.000	.000	.000	62	60.431	2058.495	.000	.000
23	.000	.000	.000	.000	63	13.662	1750.000	.000	.000
24	.000	.000	.000	.000	64	1.496	1418.825	.000	.000
25	.000	.000	.000	.000	65	1.333	1418.825	.000	.000
26	575.000	55.000	3.984	-45.499	66	.698	1335.733	.000	.000
27	574.992	55.000	3.984	-45.499	67	.313	787.016	.000	.000
28	574.984	110.603	1.119	212.807	68	.000	.000	.000	.000
29	574.983	110.603	1.119	212.808	69	.000	.000	.000	.000
30	574.983	110.603	1.119	212.808	70	.000	750.000	.000	.000
31	574.981	110.603	1.119	212.808	71	.000	731.824	.000	.000
32	574.919	399.998	.262	1301.068	72	.000	731.824	.000	.000
33	574.911	399.998	.262	1301.068	73	.000	.000	.000	.000
34	574.911	399.998	.262	1301.068	74	.000	.000	.000	.000
35	574.903	399.998	.262	1301.068	75	.000	.000	.000	.000
36	574.793	759.357	.142	2584.054	76	.000	.000	.000	.000
37	574.779	759.360	.142	2584.064	77	.000	.000	.000	.000
38	574.779	759.360	.142	2584.064	78	.000	.000	.000	.000
39	574.764	759.360	.142	2584.064	79	.000	.000	.000	.000
40	574.550	426.459	.246	1401.082	80	.000	.000	.000	1.000

* CONDITION * OMATCH AMBIENT PRESSURE .00 PSIA. 18 DEC 72 16:01:47

HYDRAULIC POWER	10.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	33.09	SPC	3.079	AMW	3.51
HYDRAULIC PUMP	30.57	LUBE PUMP	4.00	SECOND STAGE	35.48	D/F	.743		
TOTAL GEAR BOX	40.57			TOTAL TURBINE	68.57	PT OUT	.361		

TURBINE INFORMATION

FLOW	2.082	PRESSURE	71.09	1.73	EFFICIENCY 1ST	.469	A1	.1235	A3	.4509
SPECIFIC HEAT RATIO	1.352	TEMPERATURE	2060.4	1417.1	EFFICIENCY 2ND	.417	A2	.1901	A4	.4963
PRESSURE RATIO	41.04	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.504	HP	68.57	N	70000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	843.77	709.70	750.00	750.00	750.00
PRESSURE IN	574.11	574.15	896.65	531.08	573.91
PRESSURE OUT	574.11	574.15	531.09	76.15	75.99
EFFECTIVE AREA	*******	-10.10000	.00082	.00134	.00662
FLOW	1.092	.968	.887	.887	1.195

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.195	574.99	574.98	55.00	111.40	-45.5	215.6	.072	1.000	1.000	311.91 BTU/MIN
	HOT SIDE	.102	574.12	574.12	843.77	61.36	2878.6	-22.8	.992	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.195	574.97	574.89	111.40	399.98	215.6	1301.0	.443	1.000	1.000	1296.51 BTU/MIN
	HOT SIDE	1.195	574.68	574.37	762.49	430.37	2595.0	1415.7	.510	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.195	574.87	574.72	399.98	762.48	1301.0	2595.0	.961	1.000	1.000	1545.69 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	777.22	732.04	.0	.0	.120	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.195	574.36	574.20	430.37	709.70	1415.7	2410.0	.883	1.000	1.000	1187.71 BTU/MIN
	HOT SIDE	28.500	200.00	199.99	746.61	662.90	.0	.0	.265	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.226	574.15	574.15	709.70	1417.06	2410.0	4882.1	****	1.000	1.000	559.05 BTU/MIN
	HOT SIDE	2.082	1.54	.81	1417.14	1289.70	.0	.0	.180	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.195	574.10	573.93	776.76	750.00	2645.0	2551.2	.056	1.000	1.000	-112.04 BTU/MIN
	HOT SIDE	.887	900.00	899.96	300.00	750.00	35.4	160.9	.944	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.357	430.368	.244	1415.730
2	.000	.000	.000	.000	42	574.200	709.704	.154	2410.036
3	.000	.000	.000	.000	43	574.182	709.704	.154	2410.036
4	.000	.000	.000	.000	44	574.182	709.704	.154	2410.036
5	900.000	300.000	16.648	35.434	45	574.163	709.704	.154	2410.035
6	899.963	749.997	3.673	160.871	46	574.153	709.704	.154	2410.035
7	896.657	749.997	3.660	160.883	47	574.149	1417.061	.078	4882.117
8	896.650	749.997	3.660	160.883	48	574.151	709.704	.154	2410.035
9	531.090	749.997	2.167	162.215	49	574.151	709.704	.000	.000
10	531.079	749.997	2.167	162.215	50	574.149	843.766	.128	2878.635
11	76.150	749.997	.310	163.898	51	574.126	843.766	.128	2878.634
12	200.000	746.613	.000	.000	52	574.108	843.766	.128	2878.634
13	199.994	662.895	.000	.000	53	574.108	.000	.000	.000
14	199.994	662.895	.000	.000	54	574.122	776.762	.138	2645.032
15	199.994	662.895	.000	.000	55	574.122	843.766	.128	2878.634
16	200.000	777.217	.000	.000	56	574.122	61.357	3.640	-22.837
17	200.000	777.217	.000	.000	57	574.101	776.762	.138	2645.031
18	200.000	777.217	.000	.000	58	573.932	749.997	.144	2551.234
19	199.990	732.037	.000	.000	59	573.912	749.997	.144	2551.234
20	.000	.000	.000	.000	60	75.993	749.997	.019	2540.648
21	.000	.000	.000	.000	61	71.102	2060.413	.007	7175.695
22	.000	.000	.000	.000	62	71.090	2060.413	.000	.000
23	.000	.000	.000	.000	63	16.013	1750.000	.000	.000
24	.000	.000	.000	.000	64	1.732	1417.136	.000	.000
25	.000	.000	.000	.000	65	1.537	1417.136	.000	.000
26	575.000	55.000	3.984	-45.499	66	.807	1289.695	.000	.000
27	574.988	55.000	3.984	-45.500	67	.361	787.014	.000	.000
28	574.978	111.399	1.108	215.617	68	.000	.000	.000	.000
29	574.976	111.399	1.108	215.617	69	.000	.000	.000	.000
30	574.976	111.399	1.108	215.617	70	.000	750.000	.000	.000
31	574.973	111.399	1.108	215.617	71	.000	739.222	.000	.000
32	574.889	399.982	.262	1301.005	72	.000	739.946	.000	.000
33	574.878	399.982	.262	1301.005	73	.000	.000	.000	.000
34	574.878	399.982	.262	1301.005	74	.000	.000	.000	.000
35	574.867	399.982	.262	1301.005	75	.000	.000	.000	.000
36	574.717	762.478	.142	2594.989	76	.000	.000	.000	.000
37	574.697	762.493	.142	2595.040	77	.000	.000	.000	.000
38	574.697	762.493	.142	2595.040	78	.000	.000	.000	.000
39	574.677	762.493	.142	2595.040	79	.000	.000	.000	.000
40	574.369	430.368	.244	1415.730	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE 14.70 PSIA. 18 DEC 72 16:01:28

HYDRAULIC POWER	350.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	217.48	MPC	1.893	AMW	3.46
HYDRAULIC PUMP	50.00	LUBE PUMP	4.00	SECOND STAGE	210.52	O/F	.715		
TOTAL GEAR BOX	400.00			TOTAL TURBINE	428.00	PT OUT	14.700		

TURBINE INFORMATION

FLOW	12.621	PRESSURE	436.67	17.57	EFFICIENCY 1ST	.481	A1	.1235	A3	.4509
SPECIFIC HEAT RATIO	1.352	TEMPERATURE	2081.2	1429.4	EFFICIENCY 2ND	.483	A2	.1901	A4	.4963
PRESSURE RATIO	24.85	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.553	HP	428.00	N	70000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1199.34	536.76	819.45	819.45	819.94
PRESSURE IN	532.62	544.79	742.53	508.84	517.86
PRESSURE OUT	522.81	544.79	509.32	468.90	467.86
EFFECTIVE AREA	.09776	.00000	.00641	.01593	.07966
FLOW	3.550	.000	5.260	5.260	7.361

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	7.361	574.56	573.34	55.00	347.25	-45.5	1096.6	.255	1.000	1.000	8406.56 BTU/MIN
	HOT SIDE	3.811	524.08	522.83	1199.34	522.91	4113.7	1753.3	.591	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	7.361	572.61	568.32	347.25	460.00	1096.6	1525.6	.426	1.000	1.000	3158.02 BTU/MIN
	HOT SIDE	7.361	561.48	551.42	611.72	491.88	2066.4	1641.9	.453	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	7.361	567.35	562.73	460.00	611.72	1525.6	2066.4	.468	1.000	1.000	3981.16 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	784.20	663.31	.0	.0	.373	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	7.361	550.89	545.96	491.88	536.76	1641.9	1803.3	.317	1.000	1.000	1188.03 BTU/MIN
	HOT SIDE	28.500	200.00	199.87	633.48	542.03	.0	.0	.646	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	7.361	536.01	534.25	536.76	1199.34	1803.1	4113.9	.742	1.000	1.000	17009.60 BTU/MIN
	HOT SIDE	12.621	16.85	15.40	1429.40	787.02	.0	.0	.720	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	7.361	521.89	518.79	849.10	819.94	2896.0	2794.6	.053	1.000	1.000	-746.72 BTU/MIN
	HOT SIDE	5.260	900.00	899.05	300.00	819.45	35.4	177.4	.946	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	550.890	491.884	.205	1641.854
2	.000	.000	.000	.000	42	545.962	536.759	.187	1803.253
3	.000	.000	.000	.000	43	545.378	536.759	.187	1803.243
4	.000	.000	.000	.000	44	545.378	536.759	.187	1803.243
5	900.000	300.000	16.648	35.434	45	544.793	536.759	.186	1803.233
6	899.050	819.451	3.267	177.449	46	536.010	536.759	.183	1803.087
7	742.855	819.451	2.704	177.875	47	534.248	1199.337	.083	4113.910
8	742.525	819.451	2.703	177.876	48	544.793	536.759	.186	1803.233
9	509.321	819.451	1.858	178.505	49	544.793	536.759	.000	.000
10	508.841	819.451	1.857	178.506	50	534.248	1199.338	.083	4113.912
11	468.896	819.451	1.712	178.606	51	532.930	1199.338	.083	4113.880
12	200.000	633.479	.000	.000	52	532.623	1199.338	.083	4113.872
13	199.870	542.034	.000	.000	53	522.810	.000	.000	.000
14	199.870	542.034	.000	.000	54	522.829	849.099	.116	2896.021
15	199.870	542.034	.000	.000	55	524.077	1199.338	.081	4113.666
16	200.000	784.203	.000	.000	56	522.829	522.906	.184	1753.299
17	200.000	784.203	.000	.000	57	521.888	849.099	.116	2896.000
18	200.000	784.203	.000	.000	58	518.785	819.940	.118	2794.555
19	199.985	663.313	.000	.000	59	517.860	819.940	.118	2794.534
20	.000	.000	.000	.000	60	467.862	819.940	.107	2793.436
21	.000	.000	.000	.000	61	436.745	2081.208	.040	7260.847
22	.000	.000	.000	.000	62	436.671	2081.208	.000	.000
23	.000	.000	.000	.000	63	93.469	1750.000	.000	.000
24	.000	.000	.000	.000	64	17.572	1429.404	.000	.000
25	.000	.000	.000	.000	65	16.846	1429.404	.000	.000
26	575.000	55.000	3.984	-45.499	66	15.396	787.016	.000	.000
27	574.562	55.000	3.984	-45.505	67	14.700	787.016	.000	.000
28	573.336	347.250	.301	1096.560	68	.000	.000	.000	.000
29	572.973	347.250	.301	1096.559	69	.000	.000	.000	.000
30	572.973	347.250	.301	1096.559	70	.000	750.000	.000	.000
31	572.611	347.250	.301	1096.558	71	.000	746.438	.000	.000
32	568.318	459.997	.226	1525.587	72	.000	771.614	.000	.000
33	567.835	459.997	.226	1525.581	73	.000	.000	.000	.000
34	567.835	459.997	.226	1525.581	74	.000	.000	.000	.000
35	567.352	459.997	.226	1525.575	75	.000	.000	.000	.000
36	562.729	611.716	.174	2066.431	76	.000	.000	.000	.000
37	562.103	611.723	.174	2066.445	77	.000	.000	.000	.000
38	562.103	611.723	.174	2066.445	78	.000	.000	.000	.000
39	561.476	611.723	.174	2066.433	79	.000	.000	.000	.000
40	551.421	491.884	.205	1641.862	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 18 DEC 72 16:11:47

HYDRAULIC POWER	.00	GEAR BOX LOSS	32.92	FIRST STAGE POWER	38.63	SPC	3.538	AMW	3.51
HYDRAULIC PUMP	41.15	LUBE PUMP	5.49	SECOND STAGE	40.93	O/F	.743		
TOTAL GEAR BOX	41.15			TOTAL TURBINE	79.56	PT OUT	.429		

TURBINE INFORMATION

FLOW	2.427	PRESSURE	74.41	2.03	EFFICIENCY 1ST	.469	A1	.1375	A3	.5021
SPECIFIC HEAT RATIO	1.352	TEMPERATURE	2061.0	1420.6	EFFICIENCY 2ND	.428	A2	.2117	A4	.5527
PRESSURE RATIO	36.71	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.511	HP	79.56	N	70000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	847.76	763.94	750.02	750.02	750.02
PRESSURE IN	573.78	573.82	895.45	530.96	573.52
PRESSURE OUT	573.78	573.82	530.98	80.89	80.65
EFFECTIVE AREA	*******	-10.10000	.00095	.00159	.00796
FLOW	1.266	1.214	1.035	1.035	1.392

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.392	574.98	574.97	55.00	114.67	-45.5	227.2	.075	1.000	1.000	379.58 BTU/MIN
	HOT SIDE	.126	573.80	573.79	847.76	64.37	2892.5	-9.3	.988	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.392	574.96	574.85	114.67	399.99	227.2	1301.0	.441	1.000	1.000	1494.89 BTU/MIN
	HOT SIDE	1.392	574.56	574.13	762.14	433.94	2593.8	1429.1	.507	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.392	574.82	574.62	399.99	762.11	1301.0	2593.7	.948	1.000	1.000	1799.46 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	782.09	729.54	.0	.0	.138	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.392	574.11	573.90	433.94	763.94	1429.1	2600.1	.867	1.000	1.000	1630.10 BTU/MIN
	HOT SIDE	28.500	200.00	200.00	814.67	704.15	.0	.0	.290	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.178	573.83	573.83	763.94	1420.50	2600.1	4894.2	****	1.000	1.000	407.50 BTU/MIN
	HOT SIDE	2.427	1.80	.96	1420.57	1340.89	.0	.0	.121	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.392	573.77	573.55	776.79	750.02	2645.1	2551.3	.056	1.000	1.000	-130.63 BTU/MIN
	HOT SIDE	1.035	900.00	899.95	300.00	750.02	35.4	160.9	.944	1.000	1.000	1 PASS PARALL

Computer Case 55 (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.114	433.935	.242	1429.093
2	.000	.000	.000	.000	42	573.895	763.938	.141	2600.088
3	.000	.000	.000	.000	43	573.868	763.938	.141	2600.087
4	.000	.000	.000	.000	44	573.868	763.938	.141	2600.087
5	900.000	300.000	16.648	35.434	45	573.840	763.938	.141	2600.087
6	899.952	750.016	3.673	160.875	46	573.833	763.938	.141	2600.086
7	895.460	750.016	3.655	160.892	47	573.830	1420.497	.078	4894.217
8	895.451	750.016	3.654	160.892	48	573.819	763.938	.141	2600.086
9	530.978	750.016	2.166	162.220	49	573.819	763.938	.000	.000
10	530.962	750.016	2.166	162.220	50	573.833	847.761	.127	2892.516
11	80.889	750.016	.330	163.881	51	573.802	847.761	.127	2892.515
12	200.000	814.668	.000	.000	52	573.777	847.761	.127	2892.514
13	199.997	704.151	.000	.000	53	573.776	.000	.000	.000
14	199.997	704.151	.000	.000	54	573.795	776.794	.138	2645.139
15	199.997	704.151	.000	.000	55	573.796	847.761	.127	2892.515
16	200.000	782.089	.000	.000	56	573.795	64.366	3.431	-9.349
17	200.000	782.089	.000	.000	57	573.767	776.794	.138	2645.139
18	200.000	782.089	.000	.000	58	573.550	750.018	.144	2551.298
19	199.991	729.541	.000	.000	59	573.523	750.018	.144	2551.298
20	.000	.000	.000	.000	60	80.649	750.018	.021	2540.821
21	.000	.000	.000	.000	61	74.429	2060.962	.007	7177.878
22	.000	.000	.000	.000	62	74.414	2060.962	.000	.000
23	.000	.000	.000	.000	63	16.744	1750.009	.000	.000
24	.000	.000	.000	.000	64	2.027	1420.572	.000	.000
25	.000	.000	.000	.000	65	1.799	1420.572	.000	.000
26	575.000	55.000	3.984	-45.499	66	.959	1340.887	.000	.000
27	574.984	55.000	3.984	-45.500	67	.429	801.202	.000	.000
28	574.970	114.672	1.062	227.177	68	.000	.000	.000	.000
29	574.967	114.672	1.062	227.177	69	.000	.000	.000	.000
30	574.967	114.672	1.062	227.177	70	.000	750.000	.000	.000
31	574.963	114.672	1.062	227.178	71	.000	729.541	.000	.000
32	574.849	399.991	.262	1301.042	72	.000	729.541	.000	.000
33	574.834	399.991	.262	1301.042	73	.000	.000	.000	.000
34	574.834	399.991	.262	1301.042	74	.000	.000	.000	.000
35	574.819	399.991	.262	1301.042	75	.000	.000	.000	.000
36	574.619	762.109	.142	2593.694	76	.000	.000	.000	.000
37	574.592	762.137	.142	2593.790	77	.000	.000	.000	.000
38	574.592	762.137	.142	2593.790	78	.000	.000	.000	.000
39	574.564	762.137	.142	2593.790	79	.000	.000	.000	.000
40	574.131	433.935	.242	1429.093	80	.000	.000	.000	1.000

* CONDITION * DMATCH AMBIENT PRESSURE .00 PSIA. 18 DEC 72 16:11:32

HYDRAULIC POWER	10.00	GEAR BOX LOSS	32.92	FIRST STAGE POWER	43.88	SPC	3.170	AMW	3.52
HYDRAULIC PUMP	41.94	LUBE PUMP	5.49	SECOND STAGE	46.47	O/F	.744		
TOTAL GEAR BOX	51.94			TOTAL TURBINE	90.34	PT OUT	.479		

TURBINE INFORMATION

FLOW	2.744	PRESSURE	84.16	2.26	EFFICIENCY 1ST	.470	A1	.1375	A3 .5021
SPECIFIC HEAT RATIO	1.352	TEMPERATURE	2062.4	1419.1	EFFICIENCY 2ND	.428	A2	.2117	A4 .5527
PRESSURE RATIO	37.22	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.512	HP	90.34	N 7000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	848.32	729.15	750.00	750.00	750.00
PRESSURE IN	573.43	573.50	894.18	531.22	573.12
PRESSURE OUT	573.43	573.50	531.24	91.49,	91.22
EFFECTIVE AREA	*******	-10.10000	.00108	.00180	.00900
FLOW	1.430	1.302	1.171	1.171	1.573

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.573	574.98	574.96	55.00	115.10	-45.5	228.7	.076	1.000	1.000	431.40 BTU/MIN
	HOT SIDE	.144	573.46	573.46	848.32	66.36	2894.5	-.1	.986	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.573	574.95	574.81	115.10	399.96	228.7	1300.9	.438	1.000	1.000	1687.15 BTU/MIN
	HOT SIDE	1.573	574.45	573.89	765.54	437.68	2605.7	1443.0	.504	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.573	574.77	574.52	399.96	765.53	1300.9	2605.7	.935	1.000	1.000	2052.94 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	790.84	731.15	.0	.0	.153	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.573	573.87	573.59	437.68	729.15	1443.0	2478.2	.830	1.000	1.000	1628.70 BTU/MIN
	HOT SIDE	28.500	200.00	200.00	788.74	676.08	.0	.0	.321	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.272	573.51	573.51	729.15	1419.04	2478.2	4889.1	****	1.000	1.000	654.65 BTU/MIN
	HOT SIDE	2.744	2.00	1.07	1419.12	1305.91	.0	.0	.164	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.573	573.42	573.16	776.81	750.00	2645.2	2551.2	.056	1.000	1.000	-147.83 BTU/MIN
	HOT SIDE	1.171	900.00	899.94	300.00	750.00	35.4	160.9	.944	1.000	1.000	1 PASS PARALL

Computer Case 54 (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.866	437.682	.240	1443.046
2	.000	.000	.000	.000	42	573.593	729.146	.149	2478.155
3	.000	.000	.000	.000	43	573.560	729.146	.149	2478.155
4	.000	.000	.000	.000	44	573.560	729.146	.149	2478.155
5	900.000	300.000	16.648	35.434	45	573.526	729.146	.149	2478.154
6	899.942	750.000	3.673	160.871	46	573.512	729.146	.149	2478.154
7	894.188	750.000	3.649	160.892	47	573.506	1419.042	.078	4889.081
8	894.175	750.000	3.649	160.892	48	573.504	729.146	.149	2478.153
9	531.237	750.000	2.167	162.215	49	573.504	729.146	.000	.000
10	531.217	750.000	2.167	162.215	50	573.506	848.321	.127	2894.455
11	91.493	750.000	.373	163.831	51	573.467	848.321	.127	2894.454
12	200.000	788.735	.000	.000	52	573.434	848.321	.127	2894.453
13	199.996	676.077	.000	.000	53	573.434	.000	.000	.000
14	199.996	676.077	.000	.000	54	573.458	776.810	.138	2645.188
15	199.996	676.077	.000	.000	55	573.458	848.321	.127	2894.454
16	200.000	790.835	.000	.000	56	573.458	66.356	3.287	-.086
17	200.000	790.835	.000	.000	57	573.421	776.810	.138	2645.187
18	200.000	790.835	.000	.000	58	573.158	750.002	.144	2551.236
19	199.991	731.149	.000	.000	59	573.123	750.002	.144	2551.235
20	.000	.000	.000	.000	60	91.222	750.002	.023	2540.993
21	.000	.000	.000	.000	61	84.181	2062.410	.008	7183.361
22	.000	.000	.000	.000	62	84.163	2062.410	.000	.000
23	.000	.000	.000	.000	63	18.883	1750.000	.000	.000
24	.000	.000	.000	.000	64	2.261	1419.116	.000	.000
25	.000	.000	.000	.000	65	2.001	1419.116	.000	.000
26	575.000	55.000	3.984	-45.499	66	1.070	1305.910	.000	.000
27	574.980	55.000	3.984	-45.500	67	.479	801.202	.000	.000
28	574.962	115.096	1.056	228.676	68	.000	.000	.000	.000
29	574.957	115.096	1.056	228.677	69	.000	.000	.000	.000
30	574.957	115.096	1.056	228.677	70	.000	750.000	.000	.000
31	574.953	115.096	1.056	228.677	71	.000	738.689	.000	.000
32	574.809	399.963	.262	1300.935	72	.000	739.683	.000	.000
33	574.790	399.963	.262	1300.935	73	.000	.000	.000	.000
34	574.790	399.963	.262	1300.935	74	.000	.000	.000	.000
35	574.771	399.963	.262	1300.935	75	.000	.000	.000	.000
36	574.517	765.526	.141	2605.666	76	.000	.000	.000	.000
37	574.481	765.535	.141	2605.698	77	.000	.000	.000	.000
38	574.481	765.535	.141	2605.698	78	.000	.000	.000	.000
39	574.446	765.535	.141	2605.697	79	.000	.000	.000	.000
40	573.887	437.682	.240	1443.046	80	.000	.000	.000	1.000

* CONDITION # DMATCH AMBIENT PRESSURE 14.70 PSIA. 18 DEC 72 16:11:12

HYDRAULIC POWER	350.00	GEAR BOX LOSS	32.92	FIRST STAGE POWER	233.50	SPC	1.944	AMW	3.45
HYDRAULIC PUMP	68.59	LUBE PUMP	5.49	SECOND STAGE	223.50	O/F	.713		
TOTAL GEAR BOX	418.59			TOTAL TURBINE	456.99	PT OUT	14.700		

TURBINE INFORMATION

FLOW	13.560	PRESSURE	421.48	17.97	EFFICIENCY 1ST	.481	A1	.1375	A3 .5021
SPECIFIC HEAT RATIO	1.352	TEMPERATURE	2080.6	1433.5	EFFICIENCY 2ND	.489	A2	.2117	A4 .5527
PRESSURE RATIO	23.45	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.555	HP	456.99	N 70000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	OXYGEN TRIM	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1202.45	550.91	822.14	822.14	822.72
PRESSURE IN	525.58	540.00	708.91	499.09	507.96
PRESSURE OUT	513.60	540.00	499.66	459.41	457.96
EFFECTIVE AREA	.09399	.00000	.00733	.01735	.08676
FLOW	3.742	.000	5.643	5.643	7.917

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	7.917	574.49	573.08	55.00	347.62	-45.5	1098.0	.255	1.000	1.000	9053.94 BTU/MIN
	HOT SIDE	4.176	515.14	513.62	1202.45	537.86	4124.4	1806.6	.579	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	7.917	572.24	567.31	347.62	459.91	1098.0	1525.3	.424	1.000	1.000	3382.55 BTU/MIN
	HOT SIDE	7.917	559.40	547.80	612.71	493.35	2069.9	1447.2	.450	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	7.917	566.19	560.86	459.91	612.62	1525.2	2069.6	.451	1.000	1.000	4309.71 BTU/MIN
	HOT SIDE	57.000	200.00	199.99	798.45	668.70	.0	.0	.383	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	7.917	547.18	541.39	493.35	550.91	1647.1	1853.0	.291	1.000	1.000	1629.84 BTU/MIN
	HOT SIDE	28.500	200.00	199.97	690.99	569.00	.0	.0	.617	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	7.917	529.54	527.48	550.91	1202.43	1852.8	4124.6	.738	1.000	1.000	17987.16 BTU/MIN
	HOT SIDE	13.560	17.15	15.51	1433.52	801.20	.0	.0	.716	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	7.917	512.51	509.06	851.96	822.72	2905.7	2804.0	.053	1.000	1.000	-805.27 BTU/MIN
	HOT SIDE	5.643	900.00	898.91	300.00	822.14	35.4	178.1	.946	1.000	1.000	1 PASS PARALL

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	547.183	493.355	.203	1647.145
2	.000	.000	.000	.000	42	541.388	550.911	.182	1852.999
3	.000	.000	.000	.000	43	540.693	550.911	.181	1852.988
4	.000	.000	.000	.000	44	540.693	550.911	.181	1852.988
5	900.000	300.000	16.648	35.434	45	539.997	550.911	.181	1852.976
6	898.909	822.144	3.259	178.100	46	529.544	550.911	.178	1852.798
7	709.310	822.144	2.577	178.604	47	527.479	1202.435	.082	4124.630
8	708.912	822.144	2.576	178.605	48	539.997	550.911	.181	1852.976
9	499.656	822.144	1.819	179.172	49	539.997	550.911	.000	.000
10	499.092	822.144	1.817	179.174	50	527.477	1202.448	.082	4124.679
11	459.409	822.144	1.674	179.273	51	525.930	1202.448	.081	4124.641
12	200.000	690.993	.000	.000	52	525.583	1202.448	.081	4124.633
13	199.968	569.000	.000	.000	53	513.595	.000	.000	.000
14	199.968	569.000	.000	.000	54	513.615	851.956	.114	2905.743
15	199.968	569.000	.000	.000	55	515.141	1202.448	.080	4124.381
16	200.000	798.453	.000	.000	56	513.615	537.856	.176	1806.636
17	200.000	798.453	.000	.000	57	512.505	851.956	.113	2905.718
18	200.000	798.453	.000	.000	58	509.056	822.722	.116	2804.010
19	199.987	668.701	.000	.000	59	507.963	822.722	.115	2803.985
20	.000	.000	.000	.000	60	457.964	822.722	.104	2802.896
21	.000	.000	.000	.000	61	421.566	2080.646	.039	7258.792
22	.000	.000	.000	.000	62	421.477	2080.646	.000	.000
23	.000	.000	.000	.000	63	90.312	1750.001	.000	.000
24	.000	.000	.000	.000	64	17.973	1433.518	.000	.000
25	.000	.000	.000	.000	65	17.150	1433.518	.000	.000
26	575.000	55.000	3.984	-45.499	66	15.513	801.202	.000	.000
27	574.493	55.000	3.984	-45.506	67	14.700	801.202	.000	.000
28	573.082	347.625	.301	1098.033	68	.000	.000	.000	.000
29	572.662	347.625	.300	1098.032	69	.000	.000	.000	.000
30	572.662	347.625	.300	1098.032	70	.000	750.000	.000	.000
31	572.242	347.625	.300	1098.031	71	.000	746.659	.000	.000
32	567.308	459.910	.226	1525.256	72	.000	781.188	.000	.000
33	566.749	459.910	.225	1525.249	73	.000	.000	.000	.000
34	566.749	459.910	.225	1525.249	74	.000	.000	.000	.000
35	566.189	459.910	.225	1525.242	75	.000	.000	.000	.000
36	560.862	612.622	.174	2069.572	76	.000	.000	.000	.000
37	560.131	612.712	.173	2069.875	77	.000	.000	.000	.000
38	560.131	612.712	.173	2069.875	78	.000	.000	.000	.000
39	559.402	612.712	.173	2069.861	79	.000	.000	.000	.000
40	547.803	493.355	.204	1647.154	80	.000	.000	.000	1.000

* CONDITION * BYPASS AMBIENT PRESSURE .00 PSIA. 02 MAR 73 17:06:50

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	30.11	SPC	3.871	AMW	3.37
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	27.89	O/F	.670		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	.493		

TURBINE INFORMATION

FLOW	1.935	PRESSURE	53.25	1.86	EFFICIENCY 1ST	.430	A1	.1517	A3	.6300
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1939.9	1371.9	EFFICIENCY 2ND	.430	A2	.2335	A4	.6930
PRESSURE RATIO	28.70	ENTHALPY	.0	.0	EFFICIENCT TOTAL	.499	NDOT	0.	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	853.21	703.52	749.98	749.98	750.00
PRESSURE IN	574.19	574.23	899.48	569.83	574.00
PRESSURE OUT	574.07	574.22	569.84	58.31	58.11
EFFECTIVE AREA	.21151	.57500	.00072	.00111	.00662
FLOW	1.044	.899	.776	.776	1.159

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.159	574.99	574.97	55.00	120.05	-45.5	246.2	.081	1.000	1.000	338.07 BTU/MIN
	HOT SIDE	.115	574.20	574.20	853.21	56.06	2911.5	-41.9	.999	1.000	1.000	6 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.159	574.97	574.89	120.05	400.16	246.2	1301.7	.473	1.000	1.000	1223.47 BTU/MIN
	HOT SIDE	1.159	574.70	574.43	712.07	416.34	2418.3	1363.0	.500	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.159	574.87	574.73	400.16	712.05	1301.7	2418.3	.935	1.000	1.000	1294.19 BTU/MIN
	HOT SIDE	57.000	200.00	198.21	733.56	694.08	.0	.0	.118	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.159	574.42	574.28	416.34	703.52	1363.0	2388.4	.839	1.000	1.000	1188.47 BTU/MIN
	HOT SIDE	28.500	200.00	199.47	758.71	675.36	.0	.0	.243	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.260	574.15	574.14	703.52	1371.43	2388.4	4721.3	.999	1.000	1.000	606.94 BTU/MIN
	HOT SIDE	1.935	1.78	1.10	1371.86	1205.75	2936.1	2621.4	.249	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.159	574.18	574.02	773.97	750.00	2635.3	2551.2	.051	1.000	1.000	-97.39 BTU/MIN
	HOT SIDE	.776	900.00	899.48	300.00	749.98	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	1.102	1.048	.271
EXIT	.493	.261	1.000

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.415	416.335	.252	1363.021
2	.000	.000	.000	.000	42	574.279	703.520	.156	2388.366
3	.000	.000	.000	.000	43	574.262	703.520	.156	2388.366
4	.000	.000	.000	.000	44	574.262	703.520	.156	2388.366
5	900.000	300.000	16.648	35.434	45	574.245	703.520	.156	2388.366
6	899.480	749.983	3.671	160.869	46	574.147	703.520	.156	2388.364
7	569.838	749.983	2.325	162.066	47	574.142	1371.431	.080	4721.311
8	569.838	749.983	.000	.000	48	574.234	703.520	.156	2388.366
9	569.838	749.983	2.325	162.066	49	574.224	703.520	.000	.000
10	569.829	749.983	2.325	162.066	50	574.224	853.214	.127	2911.485
11	58.312	749.983	.238	163.977	51	574.203	853.214	.127	2911.485
12	200.000	758.711	.000	.000	52	574.186	853.214	.127	2911.484
13	199.470	675.358	.000	.000	53	574.066	.000	.000	.000
14	199.470	675.358	.000	.000	54	574.201	773.972	.139	2635.259
15	199.470	675.358	.000	.000	55	574.203	853.214	.127	2911.485
16	200.000	733.564	.000	.000	56	574.201	56.060	3.929	-41.875
17	200.000	733.564	.000	.000	57	574.181	773.972	.139	2635.258
18	200.000	733.564	.000	.000	58	574.015	749.997	.145	2551.237
19	198.214	694.083	.000	.000	59	573.997	749.997	.145	2551.236
20	.000	.000	.000	.000	60	58.110	749.997	.015	2540.269
21	.000	.000	.000	.000	61	53.266	1939.940	.005	6732.884
22	.000	.000	.000	.000	62	53.252	1939.940	.000	.000
23	.000	.000	.000	.000	63	10.167	1645.000	.000	.000
24	.000	.000	.000	.000	64	1.856	1371.857	.000	.000
25	.000	.000	.000	.000	65	1.779	1371.857	.000	2936.137
26	575.000	55.000	3.984	-45.499	66	1.102	1205.747	.000	2621.388
27	574.989	55.000	3.984	-45.500	67	.493	.000	.000	.000
28	574.973	120.052	.988	246.165	68	.000	.000	.000	.000
29	574.970	120.052	.988	246.165	69	.000	.000	.000	.000
30	574.970	120.052	.988	246.165	70	.000	650.000	.000	.000
31	574.967	120.052	.988	246.165	71	.000	694.083	.000	.000
32	574.890	400.165	.262	1301.705	72	.000	694.083	.000	.000
33	574.879	400.165	.262	1301.705	73	.000	.000	.000	.000
34	574.879	400.165	.262	1301.705	74	.000	.000	.000	.000
35	574.869	400.165	.262	1301.705	75	.000	.000	.000	.000
36	574.733	712.048	.154	2418.260	76	.000	.000	.000	.000
37	574.716	712.070	.154	2418.337	77	.000	.000	.000	.000
38	574.716	712.070	.154	2418.337	78	.000	.000	.000	.000
39	574.698	712.070	.154	2418.337	79	1.048	.271	.000	.000
40	574.426	416.335	.252	1363.021	80	.261	1.000	.000	1.000

* CONDITION * BYPASS AMBIENT PRESSURE .00 PSIA. 05 MAR 73 09:04:57

HYDRAULIC POWER	90.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	79.04	SPC	2.359	AMW	3.38
HYDRAULIC PUMP	35.14	LUBE PUMP	4.00	SECOND STAGE	74.10	O/F	.676		
TOTAL GEAR BOX	125.14			TOTAL TURBINE	153.14	PT OUT	1.039		

TURBINE INFORMATION

FLOW	4.920	PRESSURE	135.50	4.02	EFFICIENCY 1ST	.437	A1	.1517	A3	.6300
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1950.3	1358.8	EFFICIENCY 2ND	.424	A2	.2335	A4	.6930
PRESSURE RATIO	33.70	ENTHALPY	.0	.0	EFFICIENCT TOTAL	.502	NDOT	-0.	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1065.79	591.25	748.79	748.79	750.00
PRESSURE IN	569.44	569.90	897.51	561.78	568.17
PRESSURE OUT	568.88	569.69	561.83	148.45	147.93
EFFECTIVE AREA	.20749	.09545	.00184	.00288	.01693
FLOW	1.978	.751	1.985	1.985	2.935

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	2.935	574.93	574.62	55.00	325.09	-45.5	1008.6	.267	1.000	1.000	3094.29 BTU/MIN
	HOT SIDE	.957	569.49	569.28	1065.79	171.51	3650.4	418.0	.885	1.000	1.000	6 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	2.935	574.51	573.80	325.09	460.00	1008.6	1525.7	.452	1.000	1.000	1517.64 BTU/MIN
	HOT SIDE	2.935	572.66	570.96	623.30	477.60	2107.2	1590.2	.489	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	2.935	573.65	572.86	460.00	623.30	1525.7	2107.2	.713	1.000	1.000	1707.05 BTU/MIN
	HOT SIDE	57.000	200.00	198.18	688.94	634.42	.0	.0	.238	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	2.935	570.88	570.10	477.60	591.25	1590.2	1994.9	.515	1.000	1.000	1187.92 BTU/MIN
	HOT SIDE	28.500	200.00	199.40	698.18	611.20	.0	.0	.394	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	2.184	569.85	569.69	591.25	1228.98	1994.8	4219.2	.831	1.000	1.000	4858.40 BTU/MIN
	HOT SIDE	4.920	3.80	2.32	1358.76	833.41	2919.6	1932.1	.684	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	2.935	569.15	568.29	774.15	750.00	2635.8	2551.1	.051	1.000	1.000	-248.44 BTU/MIN
	HOT SIDE	1.985	900.09	897.51	300.00	748.79	35.4	160.6	.947	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	2.325	2.210	.271
EXIT	1.039	.552	1.000

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	570.883	477.598	.219	1590.157
2	.000	.000	.000	.000	42	570.097	591.251	.181	1994.852
3	.000	.000	.000	.000	43	570.002	591.251	.181	1994.850
4	.000	.000	.000	.000	44	570.002	591.251	.181	1994.850
5	900.000	300.000	16.648	35.434	45	569.906	591.251	.181	1994.849
6	897.508	748.788	3.671	160.592	46	569.848	591.251	.181	1994.848
7	561.831	748.788	2.297	161.819	47	569.687	1228.976	.087	4219.181
8	561.831	748.788	.000	.000	48	569.900	591.251	.181	1994.849
9	561.831	748.788	2.297	161.819	49	569.687	591.251	.000	.000
10	561.776	748.788	2.297	161.819	50	569.687	1065.785	.103	3650.438
11	148.453	748.788	.606	163.368	51	569.518	1065.785	.103	3650.434
12	200.000	698.182	.000	.000	52	569.442	1065.785	.103	3650.433
13	199.397	611.197	.000	.000	53	568.879	.000	.000	.000
14	199.397	611.197	.000	.000	54	569.280	774.147	.138	2635.765
15	199.397	611.197	.000	.000	55	569.486	1065.785	.103	3650.434
16	200.000	688.939	.000	.000	56	569.280	171.505	.626	418.001
17	200.000	688.939	.000	.000	57	569.154	774.147	.138	2635.762
18	200.000	688.939	.000	.000	58	568.288	750.000	.143	2551.124
19	198.183	634.420	.000	.000	59	568.166	750.000	.143	2551.122
20	.000	.000	.000	.000	60	147.934	750.000	.038	2542.197
21	.000	.000	.000	.000	61	135.531	1950.337	.013	6773.046
22	.000	.000	.000	.000	62	135.496	1950.337	.000	.000
23	.000	.000	.000	.000	63	25.147	1645.000	.000	.000
24	.000	.000	.000	.000	64	4.021	1358.764	.000	.000
25	.000	.000	.000	.000	65	3.795	1358.764	.000	2919.583
26	575.000	55.000	3.984	-45.499	66	2.325	833.411	.000	1932.138
27	574.930	55.000	3.984	-45.500	67	1.039	750.139	.000	.000
28	574.620	325.087	.322	1008.646	68	.000	.000	.000	.000
29	574.566	325.087	.322	1008.646	69	.000	.000	.000	.000
30	574.566	325.087	.322	1008.646	70	.000	650.000	.000	.000
31	574.512	325.087	.322	1008.646	71	.000	647.774	.000	.000
32	573.798	460.000	.228	1525.669	72	.000	654.831	.000	.000
33	573.722	460.000	.228	1525.668	73	.000	.000	.000	.000
34	573.722	460.000	.228	1525.668	74	.000	.000	.000	.000
35	573.646	460.000	.228	1525.667	75	.000	.000	.000	.000
36	572.860	623.301	.175	2107.216	76	.000	.000	.000	.000
37	572.760	623.301	.175	2107.215	77	.000	.000	.000	.000
38	572.760	623.301	.175	2107.215	78	.000	.000	.000	.000
39	572.661	623.301	.175	2107.213	79	2.210	.271	.000	.000
40	570.962	477.598	.219	1590.158	80	.552	1.000	.000	1.000

* CONDITION * BYPASS AMBIENT PRESSURE .00 PSIA. 05 MAR 73 09:05:27

HYDRAULIC POWER	180.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	128.08	SPC	2.136	AMW	3.39
HYDRAULIC PUMP	40.29	LUBE PUMP	4.00	SECOND STAGE	120.20	O/F	.680		
TOTAL GEAR BOX	220.29			TOTAL TURBINE	248.29	PT OUT	1.559		

TURBINE INFORMATION

FLOW	7.842	PRESSURE	216.07	6.04	EFFICIENCY 1ST	.441	A1	.1517	A3	.6300
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1955.8	1353.3	EFFICIENCY 2ND	.423	A2	.2335	A4	.6930
PRESSURE RATIO	35.75	ENTHALPY	.0	.0	EFFICIENCT TOTAL	.505	NDOT	0.	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1106.46	550.17	744.58	744.58	750.00
PRESSURE IN	561.04	562.60	894.22	553.85	557.44
PRESSURE OUT	559.99	562.04	553.99	236.69	235.86
EFFECTIVE AREA	.22514	.01468	.00294	.00466	.02745
FLOW	2.851	.192	3.173	3.173	4.669

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	4.669	574.82	574.00	55.00	361.07	-45.5	1150.8	.291	1.000	1.000	5585.81 BTU/MIN
	HOT SIDE	1.818	561.07	560.28	1106.46	252.80	3791.6	719.1	.812	1.000	1.000	6 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	4.669	573.69	571.88	361.07	460.00	1150.8	1525.6	.443	1.000	1.000	1750.08 BTU/MIN
	HOT SIDE	4.669	569.16	565.12	584.52	479.31	1971.2	1596.3	.471	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	4.669	571.50	569.64	460.00	584.52	1525.6	1971.3	.544	1.000	1.000	2080.69 BTU/MIN
	HOT SIDE	57.000	200.00	198.29	689.02	622.20	.0	.0	.292	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	4.669	564.92	563.07	479.31	550.17	1596.3	1850.8	.356	1.000	1.000	1187.96 BTU/MIN
	HOT SIDE	28.500	200.00	199.37	678.43	590.15	.0	.0	.443	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	4.477	562.43	561.80	550.17	1130.29	1850.8	3874.5	.722	1.000	1.000	9059.70 BTU/MIN
	HOT SIDE	7.842	5.66	3.49	1353.28	739.86	2913.6	1758.3	.764	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	4.669	559.95	557.75	774.08	750.00	2635.3	2550.9	.051	1.000	1.000	-394.17 BTU/MIN
	HOT SIDE	3.173	900.00	894.22	300.00	744.58	35.4	159.6	.938	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	3.488	3.316	.271
EXIT	1.559	.827	1.000

Computer Case 58B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	564.918	479.311	.216	1596.343
2	.000	.000	.000	.000	42	563.065	550.171	.189	1850.772
3	.000	.000	.000	.000	43	562.833	550.171	.189	1850.768
4	.000	.000	.000	.000	44	562.833	550.171	.189	1850.768
5	900.000	300.000	16.648	35.434	45	562.600	550.171	.189	1850.765
6	894.218	744.584	3.687	159.606	46	562.428	550.171	.189	1850.762
7	553.987	744.584	2.282	160.874	47	561.798	1130.286	.094	3874.504
8	553.987	744.584	.000	.000	48	562.600	550.171	.189	1850.765
9	553.987	744.584	2.282	160.874	49	562.044	550.171	.000	.000
10	553.845	744.584	2.282	160.874	50	561.661	1106.456	.097	3791.650
11	236.687	744.584	.974	162.069	51	561.208	1106.456	.097	3791.639
12	200.000	678.427	.000	.000	52	561.039	1106.456	.097	3791.635
13	199.370	590.154	.000	.000	53	559.993	.000	.000	.000
14	199.370	590.154	.000	.000	54	560.277	774.077	.135	2635.322
15	199.370	590.154	.000	.000	55	561.075	1106.456	.097	3791.636
16	200.000	689.024	.000	.000	56	560.277	252.798	.406	719.076
17	200.000	689.024	.000	.000	57	559.953	774.077	.135	2635.315
18	200.000	689.024	.000	.000	58	557.749	749.999	.140	2550.895
19	198.288	622.203	.000	.000	59	557.437	749.999	.140	2550.888
20	.000	.000	.000	.000	60	235.863	749.999	.060	2544.069
21	.000	.000	.000	.000	61	216.127	1955.844	.021	6795.200
22	.000	.000	.000	.000	62	216.071	1955.844	.000	.000
23	.000	.000	.000	.000	63	39.470	1645.000	.000	.000
24	.000	.000	.000	.000	64	6.043	1353.280	.000	.000
25	.000	.000	.000	.000	65	5.664	1353.280	.000	2913.602
26	575.000	55.000	3.984	-45.499	66	3.488	739.864	.000	1758.310
27	574.824	55.000	3.984	-45.502	67	1.559	811.591	.000	.000
28	573.996	361.068	.290	1150.827	68	.000	.000	.000	.000
29	573.844	361.068	.290	1150.826	69	.000	.000	.000	.000
30	573.844	361.068	.290	1150.826	70	.000	650.000	.000	.000
31	573.693	361.068	.290	1150.826	71	.000	647.862	.000	.000
32	571.884	460.000	.227	1525.645	72	.000	661.974	.000	.000
33	571.691	460.000	.227	1525.642	73	.000	.000	.000	.000
34	571.691	460.000	.227	1525.642	74	.000	.000	.000	.000
35	571.498	460.000	.227	1525.640	75	.000	.000	.000	.000
36	569.643	584.523	.183	1971.267	76	.000	.000	.000	.000
37	569.403	584.519	.183	1971.249	77	.000	.000	.000	.000
38	569.403	584.519	.183	1971.249	78	.000	.000	.000	.000
39	569.163	584.519	.183	1971.245	79	3.316	.271	.000	.000
40	565.121	479.311	.216	1596.346	80	.827	1.000	.000	1.000

* CONDITION * NO BYP AMBIENT PRESSURE .00 PSIA. 05 MAR 73 10:54:28

HYDRAULIC POWER	270.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	177.38	SPC	2.055	AMW	3.43
HYDRAULIC PUMP	45.43	LUBE PUMP	4.00	SECOND STAGE	166.05	O/F	.700		
TOTAL GEAR BOX	315.43			TOTAL TURBINE	343.43	PT OUT	2.126		

TURBINE INFORMATION

FLOW	10.805	PRESSURE	296.32	8.11	EFFICIENCY 1ST	.445	A1	.1517	A3	.6300
SPECIFIC HEAT RATIO	1.356	TEMPERATURE	1960.8	1349.4	EFFICIENCY 2ND	.426	A2	.2335	A4	.6930
PRESSURE RATIO	36.52	ENTHALPY	.0	.0	EFFICIENCT TOTAL	.510	NDOT	-0.	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1103.33	530.80	707.32	707.32	720.07
PRESSURE IN	549.90	552.56	889.37	545.92	542.32
PRESSURE OUT	547.65	552.56	546.18	324.10	323.01
EFFECTIVE AREA	.18586	.00000	.00403	.00653	.03796
FLOW	3.419	.000	4.450	4.450	6.355

HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	6.355	574.67	573.11	55.00	383.48	-45.5	1237.7	.313	1.000	1.000	8154.76 BTU/MIN
	HOT SIDE	2.936	549.85	547.66	1103.33	323.62	3780.5	1002.8	.744	1.000	1.000	6 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	6.355	572.51	569.16	383.48	460.00	1237.7	1525.6	.435	1.000	1.000	1629.34 BTU/MIN
	HOT SIDE	6.355	564.27	557.10	559.39	479.00	1883.1	1595.1	.457	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	6.355	568.44	565.13	460.00	559.40	1525.6	1883.1	.433	1.000	1.000	2272.20 BTU/MIN
	HOT SIDE	57.000	200.00	198.36	689.37	616.20	.0	.0	.319	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	6.355	556.71	553.41	479.00	530.80	1595.1	1782.1	.273	1.000	1.000	1188.22 BTU/MIN
	HOT SIDE	28.500	200.00	199.34	668.99	580.07	.0	.0	.468	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	6.355	552.23	551.00	530.80	1103.33	1782.1	3780.5	.699	1.000	1.000	12700.06 BTU/MIN
	HOT SIDE	10.805	7.58	4.75	1349.38	733.13	2932.1	1757.1	.753	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	6.355	547.08	542.89	743.11	720.07	2526.5	2445.7	.052	1.000	1.000	-513.68 BTU/MIN
	HOT SIDE	4.450	900.00	889.37	300.00	707.32	35.4	150.8	.919	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	4.753	4.519	.271
EXIT	2.126	1.128	1.000

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	556.714	479.001	.213	1595.094
2	.000	.000	.000	.000	42	553.408	530.803	.191	1782.072
3	.000	.000	.000	.000	43	552.983	530.803	.191	1782.066
4	.000	.000	.000	.000	44	552.983	530.803	.191	1782.066
5	900.000	300.000	16.648	35.434	45	552.558	530.803	.191	1782.059
6	889.368	707.322	3.924	150.779	46	552.233	530.803	.191	1782.053
7	546.183	707.322	2.402	152.267	47	550.996	1103.334	.095	3780.543
8	546.183	707.322	.000	.000	48	552.558	530.803	.191	1782.059
9	546.183	707.322	2.402	152.267	49	552.558	530.803	.000	.000
10	545.918	707.322	2.401	152.268	50	550.996	1103.330	.095	3780.529
11	324.103	707.322	1.422	153.262	51	550.144	1103.330	.095	3780.509
12	200.000	668.990	.000	.000	52	549.897	1103.330	.095	3780.503
13	199.337	580.065	.000	.000	53	547.652	.000	.000	.000
14	199.337	580.065	.000	.000	54	547.660	743.114	.140	2526.557
15	199.337	580.065	.000	.000	55	549.851	1103.330	.095	3780.502
16	200.000	689.370	.000	.000	56	547.660	323.615	.309	1002.791
17	200.000	689.370	.000	.000	57	547.077	743.114	.139	2526.545
18	200.000	689.370	.000	.000	58	542.890	720.069	.144	2445.713
19	198.357	616.205	.000	.000	59	542.324	720.069	.143	2445.701
20	.000	.000	.000	.000	60	323.009	720.069	.086	2441.204
21	.000	.000	.000	.000	61	296.395	1960.778	.029	6815.305
22	.000	.000	.000	.000	62	296.319	1960.778	.000	.000
23	.000	.000	.000	.000	63	53.550	1645.000	.000	.000
24	.000	.000	.000	.000	64	8.114	1349.382	.000	.000
25	.000	.000	.000	.000	65	7.585	1349.382	.000	2932.072
26	575.000	55.000	3.984	-45.499	66	4.753	733.126	.000	1757.056
27	574.673	55.000	3.984	-45.504	67	2.126	739.990	.000	.000
28	573.109	383.476	.273	1237.735	68	.000	.000	.000	.000
29	572.811	383.476	.273	1237.734	69	.000	.000	.000	.000
30	572.811	383.476	.273	1237.734	70	.000	650.000	.000	.000
31	572.513	383.476	.272	1237.732	71	.000	648.221	.000	.000
32	569.161	459.997	.226	1525.598	72	.000	669.383	.000	.000
33	568.802	459.997	.226	1525.593	73	.000	.000	.000	.000
34	568.802	459.997	.226	1525.593	74	.000	.000	.000	.000
35	568.442	459.997	.226	1525.589	75	.000	.000	.000	.000
36	565.135	559.398	.187	1883.144	76	.000	.000	.000	.000
37	564.701	559.392	.187	1883.115	77	.000	.000	.000	.000
38	564.701	559.392	.187	1883.115	78	.000	.000	.000	.000
39	564.266	559.392	.187	1883.108	79	4.519	.271	.000	.000
40	557.096	479.001	.213	1595.099	80	1.128	1.000	.000	1.000

* CONDITION * NO BYP AMBIENT PRESSURE .00 PSIA. 05 MAR 73 10:54:13

HYDRAULIC POWER	350.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	221.29	SPC	2.017	AMW	3.46
HYDRAULIC PUMP	50.00	LUBE PUMP	4.00	SECOND STAGE	206.71	O/F	.717		
TOTAL GEAR BOX	400.00			TOTAL TURBINE	428.00	PT OUT	2.645		

TURBINE INFORMATION

FLOW	13.447	PRESSURE	367.35	9.96	EFFICIENCY 1ST	.448	A1	.1517	A3	.6300
SPECIFIC HEAT RATIO	1.356	TEMPERATURE	1964.3	1346.8	EFFICIENCY 2ND	.429	A2	.2335	A4	.6930
PRESSURE RATIO	36.87	ENTHALPY	.0	.0	EFFICIENCT TOTAL	.514	NDOT	-0.	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	02 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1094.72	520.24	674.66	674.66	695.34
PRESSURE IN	537.34	541.31	883.81	538.91	524.49
PRESSURE OUT	532.76	541.31	539.31	401.22	399.91
EFFECTIVE AREA	.14278	.00000	.00500	.00907	.05398
FLOW	3.726	.000	5.616	5.616	7.831

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	7.831	574.50	572.12	55.00	396.87	-45.5	1289.1	.329	1.000	1.000	10451.38 BTU/MIN
	HOT SIDE	4.105	537.16	532.76	1094.72	374.82	3750.3	1204.1	.692	1.000	1.000	6 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	7.831	571.18	566.11	396.87	460.01	1289.1	1525.6	.429	1.000	1.000	1852.12 BTU/MIN
	HOT SIDE	7.831	558.76	548.14	543.99	478.27	1829.0	1592.3	.447	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	7.831	565.01	560.06	460.01	544.00	1525.6	1829.1	.366	1.000	1.000	2376.82 BTU/MIN
	HOT SIDE	57.000	200.00	198.40	689.62	612.97	.0	.0	.334	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	7.831	547.55	542.60	478.27	520.24	1592.3	1744.0	.225	1.000	1.000	1188.13 BTU/MIN
	HOT SIDE	28.500	200.00	199.33	665.04	575.84	.0	.0	.478	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	7.831	540.82	538.95	520.24	1094.72	1744.0	3750.3	.695	1.000	1.000	15711.60 BTU/MIN
	HOT SIDE	13.447	9.30	5.92	1346.76	740.24	2947.6	1779.3	.734	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	7.831	531.89	525.35	717.35	695.34	2436.0	2358.7	.053	1.000	1.000	-605.07 BTU/MIN
	HOT SIDE	5.616	900.00	883.81	300.00	674.66	35.4	143.1	.898	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	5.916	5.625	.271
EXIT	2.645	1.404	1.000

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	547.550	478.274	.210	1592.306
2	.000	.000	.000	.000	42	542.604	520.237	.191	1744.027
3	.000	.000	.000	.000	43	541.959	520.237	.191	1744.016
4	.000	.000	.000	.000	44	541.959	520.237	.191	1744.016
5	900.000	300.000	16.648	35.434	45	541.313	520.237	.191	1744.006
6	883.807	674.656	4.122	143.052	46	540.819	520.237	.191	1743.998
7	539.313	674.656	2.502	144.730	47	538.952	1094.724	.094	3750.325
8	539.313	674.656	.000	.000	48	541.313	520.237	.191	1744.006
9	539.313	674.656	2.502	144.730	49	541.313	520.237	.000	.000
10	538.907	674.656	2.501	144.732	50	538.952	1094.719	.094	3750.308
11	401.222	674.656	1.857	145.410	51	537.642	1094.719	.094	3750.277
12	200.000	665.045	.000	.000	52	537.345	1094.719	.094	3750.270
13	199.332	575.839	.000	.000	53	532.758	.000	.000	.000
14	199.332	575.839	.000	.000	54	532.758	717.354	.142	2435.992
15	199.332	575.839	.000	.000	55	537.160	1094.719	.094	3750.265
16	200.000	689.617	.000	.000	56	532.758	374.820	.260	1204.128
17	200.000	689.617	.000	.000	57	531.885	717.354	.141	2435.974
18	200.000	689.617	.000	.000	58	525.349	695.338	.145	2358.709
19	198.399	612.972	.000	.000	59	524.494	695.338	.144	2358.692
20	.000	.000	.000	.000	60	399.906	695.338	.111	2356.217
21	.000	.000	.000	.000	61	367.442	1964.294	.036	6829.876
22	.000	.000	.000	.000	62	367.348	1964.294	.000	.000
23	.000	.000	.000	.000	63	65.897	1645.000	.000	.000
24	.000	.000	.000	.000	64	9.962	1346.757	.000	.000
25	.000	.000	.000	.000	65	9.302	1346.757	.000	2947.606
26	575.000	55.000	3.984	-45.499	66	5.916	740.238	.000	1779.307
27	574.504	55.000	3.984	-45.506	67	2.645	739.990	.000	.000
28	572.122	396.870	.263	1289.105	68	.000	.000	.000	.000
29	571.653	396.870	.263	1289.102	69	.000	.000	.000	.000
30	571.653	396.870	.263	1289.102	70	.000	650.000	.000	.000
31	571.183	396.870	.263	1289.098	71	.000	648.478	.000	.000
32	566.109	460.010	.225	1525.608	72	.000	675.904	.000	.000
33	565.560	460.010	.225	1525.601	73	.000	.000	.000	.000
34	565.560	460.010	.225	1525.601	74	.000	.000	.000	.000
35	565.011	460.010	.225	1525.594	75	.000	.000	.000	.000
36	560.064	544.002	.189	1829.107	76	.000	.000	.000	.000
37	559.412	543.988	.189	1829.045	77	.000	.000	.000	.000
38	559.412	543.988	.189	1829.045	78	.000	.000	.000	.000
39	558.759	543.988	.189	1829.034	79	5.625	.271	.000	.000
40	548.138	478.274	.210	1592.314	80	1.404	1.000	.000	1.000

* CONDITION * BYPASS AMBIENT PRESSURE 14.70 PSIA. 05 MAR 73 09:19:43

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	46.13	SPC	6.091	AMW	3.36
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	11.87	O/F	.665		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	14.713		

TURBINE INFORMATION

FLOW	3.046	PRESSURE	83.73	14.96	EFFICIENCY 1ST	.441	A1	.1517	A3	.6300
SPECIFIC HEAT RATIO	1.359	TEMPERATURE	1931.5	1571.3	EFFICIENCY 2ND	.565	A2	.2335	A4	.6930
PRESSURE RATIO	5.60	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.511	NDOT	-0.	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	02 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1027.09	656.95	749.84	749.84	750.00
PRESSURE IN	572.78	572.91	898.94	566.90	572.27
PRESSURE OUT	572.72	572.87	566.92	91.63	91.32
EFFECTIVE AREA	.42010	.53001	.00113	.00175	.01048
FLOW	1.321	1.056	1.216	1.216	1.829

HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.829	574.97	574.86	55.00	289.90	-45.5	867.5	.242	1.000	1.000	1670.29 BTU/MIN
	HOT SIDE	.508	572.78	572.73	1027.09	115.54	3516.0	230.5	.938	1.000	1.000	6 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.829	574.82	574.55	289.90	460.00	867.5	1525.7	.460	1.000	1.000	1204.13 BTU/MIN
	HOT SIDE	1.829	574.08	573.37	659.57	473.76	2234.4	1576.2	.503	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.829	574.49	574.16	460.00	659.57	1525.7	2234.4	.853	1.000	1.000	1296.49 BTU/MIN
	HOT SIDE	57.000	200.00	198.14	694.02	653.05	.0	.0	.175	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.829	573.34	573.01	473.76	656.95	1576.2	2225.1	.700	1.000	1.000	1187.28 BTU/MIN
	HOT SIDE	28.500	200.00	199.46	735.32	650.75	.0	.0	.323	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.773	572.90	572.87	656.95	1532.83	2225.1	5290.1	.958	1.000	1.000	2369.17 BTU/MIN
	HOT SIDE	3.046	14.94	14.78	1571.26	1157.37	3304.9	2528.8	.453	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.829	572.68	572.31	773.79	750.00	2634.6	2551.2	.050	1.000	1.000	-152.52 BTU/MIN
	HOT SIDE	1.216	900.00	898.94	900.00	749.84	35.4	160.8	.949	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	14.777	14.768	.030
EXIT	14.713	14.700	.036

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.338	473.762	.221	1576.156
2	.000	.000	.000	.000	42	573.008	656.948	.167	2225.133
3	.000	.000	.000	.000	43	572.967	656.948	.167	2225.133
4	.000	.000	.000	.000	44	572.967	656.948	.167	2225.133
5	900.000	300.000	16.648	35.434	45	572.927	656.948	.167	2225.132
6	898.942	749.843	3.670	160.838	46	572.901	656.948	.167	2225.131
7	566.921	749.843	2.314	162.044	47	572.871	1532.835	.072	5290.080
8	566.921	749.843	.000	.000	48	572.913	656.948	.167	2225.132
9	566.921	749.843	2.314	162.044	49	572.874	656.948	.000	.000
10	566.900	749.843	2.313	162.045	50	572.877	1027.091	.107	3515.984
11	91.628	749.843	.373	163.795	51	572.814	1027.091	.107	3515.982
12	200.000	735.323	.000	.000	52	572.781	1027.091	.107	3515.982
13	199.460	650.747	.000	.000	53	572.723	.000	.000	.000
14	199.460	650.747	.000	.000	54	572.726	773.790	.138	2634.587
15	199.460	650.747	.000	.000	55	572.778	1027.091	.107	3515.982
16	200.000	694.015	.000	.000	56	572.726	115.543	1.046	230.454
17	200.000	694.015	.000	.000	57	572.677	773.790	.138	2634.586
18	200.000	694.015	.000	.000	58	572.313	750.002	.144	2551.217
19	198.137	653.046	.000	.000	59	572.266	750.002	.144	2551.216
20	.000	.000	.000	.000	60	91.316	750.002	.023	2540.995
21	.000	.000	.000	.000	61	83.752	1931.537	.008	6702.776
22	.000	.000	.000	.000	62	83.731	1931.537	.000	.000
23	.000	.000	.000	.000	63	17.711	1645.000	.000	.000
24	.000	.000	.000	.000	64	14.963	1571.263	.000	.000
25	.000	.000	.000	.000	65	14.936	1571.263	.000	3304.870
26	575.000	55.000	3.984	-45.499	66	14.777	1157.366	.000	2528.832
27	574.973	55.000	3.984	-45.500	67	14.713	1157.366	.000	.000
28	574.860	289.895	.362	867.493	68	.000	.000	.000	.000
29	574.841	289.895	.362	867.493	69	.000	.000	.000	.000
30	574.841	289.895	.362	867.493	70	.000	650.000	.000	.000
31	574.823	289.895	.362	867.493	71	.000	653.046	.000	.000
32	574.547	460.000	.228	1525.677	72	.000	653.046	.000	.000
33	574.518	460.000	.228	1525.677	73	.000	.000	.000	.000
34	574.518	460.000	.228	1525.677	74	.000	.000	.000	.000
35	574.488	460.000	.228	1525.677	75	.000	.000	.000	.000
36	574.158	659.572	.166	2234.351	76	.000	.000	.000	.000
37	574.117	659.575	.166	2234.358	77	.000	.000	.000	.000
38	574.117	659.575	.166	2234.358	78	.000	.000	.000	.000
39	574.077	659.575	.166	2234.357	79	14.768	.030	.000	.000
40	573.368	473.762	.221	1576.156	80	14.700	.036	.000	1.000

* CONDITION * BYPASS AMBIENT PRESSURE 14.70 PSIA. 05 MAR 73 09:08:50

HYDRAULIC POWER	90.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	95.20	SPC	2.823	AMW	3.38
HYDRAULIC PUMP	35.14	LUBE PUMP	4.00	SECOND STAGE	57.94	O/F	.677		
TOTAL GEAR BOX	125.14			TOTAL TURBINE	153.14	PT OUT	14.727		

TURBINE INFORMATION

FLOW	5.888	PRESSURE	162.19	15.44	EFFICIENCY 1ST	.438	A1	.1517	A3	.6300
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1952.4	1457.9	EFFICIENCY 2ND	.572	A2	.2335	A4	.6930
PRESSURE RATIO	10.50	ENTHALPY	.0	.0	EFFICIENCT TOTAL	.549	NDOT	0.	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1081.23	573.32	747.75	747.75	750.00
PRESSURE IN	567.20	567.80	896.58	559.15	565.29
PRESSURE OUT	566.39	567.55	559.23	177.70	177.08
EFFECTIVE AREA	.20264	.13311	.00221	.00347	.02035
FLOW	2.287	1.162	2.378	2.378	3.510

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	3.510	574.90	574.45	55.00	339.31	-45.5	1065.2	.277	1.000	1.000	3898.80 BTU/MIN
	HOT SIDE	1.224	567.25	566.88	1081.23	200.24	3704.1	517.7	.858	1.000	1.000	6 PASS COUNT
3	COLD SIDE	3.510	574.28	573.26	339.31	460.00	1065.2	1525.7	.449	1.000	1.000	1616.52 BTU/MIN
	HOT SIDE	3.510	571.67	569.29	608.15	478.54	2054.1	1593.6	.482	1.000	1.000	6 PASS PARALL
5	COLD SIDE	3.510	573.04	571.95	460.00	608.15	1525.7	2054.1	.649	1.000	1.000	1855.07 BTU/MIN
	HOT SIDE	57.000	200.00	198.22	688.16	628.74	.0	.0	.260	1.000	1.000	4 PASS COUNT
6	COLD SIDE	3.510	569.18	568.08	478.54	573.32	1593.6	1932.0	.449	1.000	1.000	1187.92 BTU/MIN
	HOT SIDE	28.500	200.00	199.39	689.52	601.98	.0	.0	.415	1.000	1.000	4 PASS COUNT
8	COLD SIDE	2.348	567.74	567.55	573.32	1332.52	1932.0	4584.0	.858	1.000	1.000	6228.21 BTU/MIN
	HOT SIDE	5.888	15.35	14.91	1457.88	896.68	3109.4	2051.7	.634	1.000	1.000	2 PASS COUNT
9	COLD SIDE	3.510	566.70	565.46	774.15	750.00	2635.7	2551.1	.051	1.000	1.000	-297.12 BTU/MIN
	HOT SIDE	2.378	900.00	896.58	300.00	747.75	35.4	160.4	.944	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	14.909	14.883	.050
EXIT	14.727	14.700	.051

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	569.176	478.535	.218	1593.563
2	.000	.000	.000	.000	42	568.085	573.317	.185	1931.969
3	.000	.000	.000	.000	43	567.950	573.317	.185	1931.967
4	.000	.000	.000	.000	44	567.950	573.317	.185	1931.967
5	900.000	300.000	16.648	35.434	45	567.816	573.317	.185	1931.965
6	896.583	747.755	3.675	160.350	46	567.741	573.317	.185	1931.963
7	559.232	747.755	2.291	161.589	47	567.547	1332.524	.081	4584.040
8	559.232	747.755	.000	.000	48	567.802	573.317	.185	1931.964
9	559.232	747.755	2.291	161.589	49	567.547	573.317	.000	.000
10	559.152	747.755	2.291	161.589	50	567.547	1081.229	.101	3704.082
11	177.703	747.755	.727	163.014	51	567.301	1081.229	.101	3704.076
12	200.000	689.521	.000	.000	52	567.196	1081.229	.101	3704.073
13	199.387	601.978	.000	.000	53	566.394	.000	.000	.000
14	199.387	601.978	.000	.000	54	566.883	774.146	.137	2635.710
15	199.387	601.978	.000	.000	55	567.249	1081.229	.101	3704.075
16	200.000	688.158	.000	.000	56	566.883	200.242	.526	517.715
17	200.000	688.158	.000	.000	57	566.702	774.146	.137	2635.706
18	200.000	688.158	.000	.000	58	565.462	750.000	.142	2551.063
19	198.217	628.738	.000	.000	59	565.288	750.000	.142	2551.059
20	.000	.000	.000	.000	60	177.081	750.000	.045	2542.819
21	.000	.000	.000	.000	61	162.234	1952.430	.016	6781.372
22	.000	.000	.000	.000	62	162.192	1952.430	.000	.000
23	.000	.000	.000	.000	63	29.923	1645.000	.000	.000
24	.000	.000	.000	.000	64	15.441	1457.879	.000	.000
25	.000	.000	.000	.000	65	15.351	1457.879	.000	3109.392
26	575.000	55.000	3.984	-45.499	66	14.909	896.683	.000	2051.680
27	574.900	55.000	3.984	-45.501	67	14.727	896.683	.000	.000
28	574.445	339.309	.309	1065.160	68	.000	.000	.000	.000
29	574.365	339.309	.309	1065.160	69	.000	.000	.000	.000
30	574.365	339.309	.309	1065.160	70	.000	650.000	.000	.000
31	574.285	339.309	.309	1065.160	71	.000	646.963	.000	.000
32	573.262	460.000	.228	1525.663	72	.000	654.025	.000	.000
33	573.154	460.000	.228	1525.661	73	.000	.000	.000	.000
34	573.154	460.000	.228	1525.661	74	.000	.000	.000	.000
35	573.045	460.000	.228	1525.660	75	.000	.000	.000	.000
36	571.952	608.154	.178	2054.119	76	.000	.000	.000	.000
37	571.813	608.154	.178	2054.116	77	.000	.000	.000	.000
38	571.813	608.154	.178	2054.116	78	.000	.000	.000	.000
39	571.674	608.154	.178	2054.113	79	14.883	.050	.000	.000
40	569.290	478.535	.218	1593.565	80	14.700	.051	.000	1.000

* CONDITION * BYPASS AMBIENT PRESSURE 14.70 PSIA. 05 MAR 73 09:08:29

HYDRAULIC POWER	180.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	142.19	SPC	2.363	AMW	3.39
HYDRAULIC PUMP	40.29	LUBE PUMP	4.00	SECOND STAGE	106.10	O/F	.680		
TOTAL GEAR BOX	220.29			TOTAL TURBINE	248.29	PT OUT	14.750		

TURBINE INFORMATION

FLOW	8.675	PRESSURE	239.03	16.08	EFFICIENCY 1ST	.441	A1	.1517	A3	.6300
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1957.1	1412.1	EFFICIENCY 2ND	.527	A2	.2335	A4	.6930
PRESSURE RATIO	14.86	ENTHALPY	.0	.0	EFFICIENCT TOTAL	.548	NDOT	0.	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1115.78	543.21	742.85	742.85	750.00
PRESSURE IN	558.37	559.96	893.04	551.58	553.77
PRESSURE OUT	557.19	559.13	551.75	261.79	260.88
EFFECTIVE AREA	.23042	.04139	.00325	.00517	.03056
FLOW	3.069	.669	3.512	3.512	5.162

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	5.162	574.78	573.76	55.00	368.79	-45.5	1180.9	.296	1.000	1.000	6330.96 BTU/MIN
	HOT SIDE	2.093	558.38	557.30	1115.78	272.79	3824.0	798.9	.795	1.000	1.000	6 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	5.162	573.39	571.17	368.79	460.00	1180.9	1525.6	.440	1.000	1.000	1779.69 BTU/MIN
	HOT SIDE	5.162	567.88	563.02	575.92	479.29	1941.1	1596.2	.467	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	5.162	570.70	568.46	460.00	575.92	1525.6	1941.1	.507	1.000	1.000	2144.70 BTU/MIN
	HOT SIDE	57.000	200.00	198.31	688.85	619.90	.0	.0	.301	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	5.162	562.77	560.54	479.29	543.21	1596.2	1826.4	.327	1.000	1.000	1166.00 BTU/MIN
	HOT SIDE	28.500	200.00	199.36	674.97	586.47	.0	.0	.452	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	4.493	559.78	559.13	543.21	1201.09	1826.3	4120.7	.757	1.000	1.000	10308.02 BTU/MIN
	HOT SIDE	8.675	15.90	15.09	1412.15	781.97	3026.6	1838.3	.725	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	5.162	556.90	554.16	774.03	750.00	2635.1	2550.8	.051	1.000	1.000	-434.92 BTU/MIN
	HOT SIDE	3.512	900.00	893.04	300.00	742.85	35.4	159.2	.934	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	15.090	15.041	.068
EXIT	14.750	14.700	.070

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	562.769	479.286	.215	1596.223
2	.000	.000	.000	.000	42	560.536	543.214	.190	1826.354
3	.000	.000	.000	.000	43	560.253	543.214	.190	1826.349
4	.000	.000	.000	.000	44	560.253	543.214	.190	1826.349
5	900.000	300.000	16.648	35.434	45	559.970	543.214	.190	1826.344
6	893.043	742.853	3.694	159.200	46	559.781	543.214	.189	1826.341
7	551.754	742.853	2.260	160.481	47	559.126	1201.095	.086	4120.673
8	551.754	742.853	.000	.000	48	559.965	543.214	.190	1826.344
9	551.754	742.853	2.280	160.481	49	559.126	543.214	.000	.000
10	551.579	742.853	2.280	160.481	50	559.126	1115.779	.096	3824.004
11	261.792	742.853	1.081	161.598	51	558.564	1115.779	.095	3823.991
12	200.000	674.974	.000	.000	52	558.365	1115.779	.095	3823.986
13	199.359	586.468	.000	.000	53	557.193	.000	.000	.000
14	199.359	586.468	.000	.000	54	557.299	774.027	.135	2635.081
15	199.359	586.468	.000	.000	55	558.381	1115.779	.095	3823.986
16	200.000	688.853	.000	.000	56	557.299	272.786	.374	798.871
17	200.000	688.853	.000	.000	57	556.901	774.027	.135	2635.073
18	200.000	688.853	.000	.000	58	554.156	750.000	.140	2550.822
19	198.310	619.897	.000	.000	59	553.772	750.000	.140	2550.814
20	.000	.000	.000	.000	60	260.883	750.000	.067	2544.607
21	.000	.000	.000	.000	61	239.089	1957.071	.023	6800.259
22	.000	.000	.000	.000	62	239.027	1957.071	.000	.000
23	.000	.000	.000	.000	63	43.505	1645.000	.000	.000
24	.000	.000	.000	.000	64	16.080	1412.148	.000	.000
25	.000	.000	.000	.000	65	15.898	1412.148	.000	3026.593
26	575.000	55.000	3.984	-45.499	66	15.090	781.968	.000	1838.327
27	574.784	55.000	3.984	-45.502	67	14.750	781.968	.000	.000
28	573.763	368.790	.284	1180.889	68	.000	.000	.000	.000
29	573.574	368.790	.284	1180.888	69	.000	.000	.000	.000
30	573.574	368.790	.284	1180.888	70	.000	650.000	.000	.000
31	573.385	368.790	.284	1180.887	71	.000	647.684	.000	.000
32	571.173	460.000	.227	1525.638	72	.000	661.799	.000	.000
33	570.937	460.000	.227	1525.634	73	.000	.000	.000	.000
34	570.937	460.000	.227	1525.634	74	.000	.000	.000	.000
35	570.701	460.000	.227	1525.631	75	.000	.000	.000	.000
36	568.465	575.918	.185	1941.090	76	.000	.000	.000	.000
37	568.174	575.916	.184	1941.077	77	.000	.000	.000	.000
38	568.174	575.916	.184	1941.077	78	.000	.000	.000	.000
39	567.883	575.916	.184	1941.072	79	15.041	.068	.000	.000
40	563.019	479.286	.215	1596.226	80	14.700	.070	.000	1.000

* CONDITION * NO BYP AMBIENT PRESSURE 14.70 PSIA. 05 MAR 73 10:53:47

HYDRAULIC POWER	270.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	189.77	SPC	2.187	AMW	3.41
HYDRAULIC PUMP	45.43	LUBE PUMP	4.00	SECOND STAGE	153.66	O/F	.692		
TOTAL GEAR BOX	315.43			TOTAL TURBINE	343.43	PT OUT	14.780		

TURBINE INFORMATION

FLOW	11.497	PRESSURE	316.10	16.89	EFFICIENCY 1ST	.444	A1	.1517	A3 .6300
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1961.1	1389.1	EFFICIENCY 2ND	.500	A2	.2335	A4 .6930
PRESSURE RATIO	18.72	ENTHALPY	.0	.0	EFFICIENCT TOTAL	.543	NDOT	0.	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1124.41	527.20	720.38	720.38	735.08
PRESSURE IN	546.35	549.44	888.02	543.94	537.36
PRESSURE OUT	543.32	549.44	544.25	345.79	344.62
EFFECTIVE AREA	.17270	.00000	.00431	.00710	.04216
FLOW	3.647	.000	4.701	4.701	6.796

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	6.796	574.63	572.83	55.00	388.00	-45.5	1255.2	.311	1.000	1.000	8839.48 BTU/MIN
	HOT SIDE	3.149	546.31	543.73	1124.41	334.61	3853.7	1046.5	.739	1.000	1.000	6 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	6.796	572.14	568.31	388.00	460.00	1255.2	1525.6	.433	1.000	1.000	1837.76 BTU/MIN
	HOT SIDE	6.796	562.74	554.61	554.21	478.80	1864.9	1594.3	.454	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	6.796	567.49	563.73	460.00	554.21	1525.6	1864.9	.411	1.000	1.000	2306.13 BTU/MIN
	HOT SIDE	57.000	200.00	198.37	689.31	615.01	.0	.0	.324	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	6.796	554.17	550.41	478.80	527.20	1594.3	1769.1	.256	1.000	1.000	1187.95 BTU/MIN
	HOT SIDE	28.500	200.00	199.33	667.59	578.58	.0	.0	.471	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	6.796	549.07	547.64	527.20	1124.41	1769.1	3853.7	.693	1.000	1.000	14167.06 BTU/MIN
	HOT SIDE	11.497	16.59	15.33	1389.08	739.99	2997.5	1765.3	.753	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	6.796	543.04	538.03	758.45	735.08	2580.2	2498.2	.051	1.000	1.000	-557.33 BTU/MIN
	HOT SIDE	4.701	900.00	888.02	300.00	720.38	35.4	153.9	.917	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	15.333	15.253	.087
EXIT	14.780	14.700	.089

Computer Case 64 (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	554.169	478.800	.212	1594.322
2	.000	.000	.000	.000	42	550.410	527.197	.192	1769.124
3	.000	.000	.000	.000	43	549.924	527.197	.191	1769.117
4	.000	.000	.000	.000	44	549.924	527.197	.191	1769.117
5	900.000	300.000	16.648	35.434	45	549.438	527.197	.191	1769.109
6	888.020	720.378	3.828	153.884	46	549.067	527.197	.191	1769.103
7	544.248	720.378	2.340	155.301	47	547.643	1124.406	.093	3853.724
8	544.248	720.378	.000	.000	48	549.438	527.197	.191	1769.109
9	544.248	720.378	2.340	155.301	49	549.438	527.197	.000	.000
10	543.944	720.378	2.339	155.303	50	547.643	1124.406	.093	3853.724
11	345.788	720.378	1.484	156.143	51	546.639	1124.406	.093	3853.700
12	200.000	667.587	.000	.000	52	546.349	1124.406	.092	3853.693
13	199.334	578.575	.000	.000	53	543.316	.000	.000	.000
14	199.334	578.575	.000	.000	54	543.725	758.455	.135	2580.225
15	199.334	578.575	.000	.000	55	546.314	1124.406	.092	3853.692
16	200.000	689.309	.000	.000	56	543.725	334.613	.297	1046.524
17	200.000	689.309	.000	.000	57	543.037	758.455	.135	2580.210
18	200.000	689.309	.000	.000	58	538.028	735.079	.139	2498.202
19	198.370	615.007	.000	.000	59	537.359	735.079	.139	2498.188
20	.000	.000	.000	.000	60	344.616	735.079	.090	2494.178
21	.000	.000	.000	.000	61	316.176	1961.062	.031	6816.767
22	.000	.000	.000	.000	62	316.095	1961.062	.000	.000
23	.000	.000	.000	.000	63	56.963	1645.000	.000	.000
24	.000	.000	.000	.000	64	16.889	1389.084	.000	.000
25	.000	.000	.000	.000	65	16.591	1389.084	.000	2997.540
26	575.000	55.000	3.984	-45.499	66	15.333	739.990	.000	1765.290
27	574.626	55.000	3.984	-45.505	67	14.780	739.990	.000	.000
28	572.835	388.003	.269	1255.186	68	.000	.000	.000	.000
29	572.490	388.003	.269	1255.184	69	.000	.000	.000	.000
30	572.490	388.003	.269	1255.184	70	.000	650.000	.000	.000
31	572.144	388.003	.269	1255.181	71	.000	648.158	.000	.000
32	568.313	460.000	.226	1525.600	72	.000	669.322	.000	.000
33	567.901	460.000	.226	1525.594	73	.000	.000	.000	.000
34	567.901	460.000	.226	1525.594	74	.000	.000	.000	.000
35	567.490	460.000	.226	1525.589	75	.000	.000	.000	.000
36	563.729	554.206	.188	1864.926	76	.000	.000	.000	.000
37	563.235	554.206	.188	1864.916	77	.000	.000	.000	.000
38	563.235	554.206	.188	1864.916	78	.000	.000	.000	.000
39	562.740	554.206	.188	1864.908	79	15.253	.087	.000	.000
40	554.607	478.800	.212	1594.328	80	14.700	.089	.000	1.000

Computer Case 65

* CONDITION * NO BYP AMBIENT PRESSURE 14.70 PSIA. 05 MAR 73 10:49:37

HYDRAULIC POWER	350.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	232.34	SPC	2.109	AMW	3.45
HYDRAULIC PUMP	50.00	LUBE PUMP	4.00	SECOND STAGE	195.66	O/F	.711		
TOTAL GEAR BOX	400.00			TOTAL TURBINE	428.00	PT OUT	14.827		

TURBINE INFORMATION

FLOW	14.063	PRESSURE	384.90	17.78	EFFICIENCY 1ST	.448	A1	.1517	A3	.6300
SPECIFIC HEAT RATIO	1.356	TEMPERATURE	1964.4	1376.0	EFFICIENCY 2ND	.486	A2	.2335	A4	.6930
PRESSURE RATIO	21.65	ENTHALPY	.0	.0	EFFICIENCT TOTAL	.541	NDOT	-0.	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1110.19	518.02	684.16	684.16	706.86
PRESSURE IN	533.54	537.97	882.35	537.12	518.95
PRESSURE OUT	528.26	537.97	537.57	420.40	419.03
EFFECTIVE AREA	.14133	.00000	.00524	.01006	.06212
FLOW	3.914	.000	5.842	5.842	8.221

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	8.221	574.45	571.83	55.00	399.79	-45.5	1300.2	.327	1.000	1.000	11063.60 BTU/MIN
	HOT SIDE	4.307	533.34	528.38	1110.19	382.92	3804.0	1235.3	.689	1.000	1.000	6 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	8.221	570.79	565.20	399.79	460.01	1300.2	1525.6	.428	1.000	1.000	1852.68 BTU/MIN
	HOT SIDE	8.221	557.11	545.48	540.56	478.03	1817.0	1591.4	.444	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	8.221	563.99	558.55	460.01	540.61	1525.6	1817.2	.351	1.000	1.000	2397.45 BTU/MIN
	HOT SIDE	57.000	200.00	198.41	689.59	612.25	.0	.0	.337	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	8.221	544.83	539.39	478.03	518.02	1591.4	1736.0	.215	1.000	1.000	1188.83 BTU/MIN
	HOT SIDE	28.500	200.00	199.33	664.34	575.04	.0	.0	.479	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	8.221	537.42	535.35	518.02	1110.21	1736.0	3804.1	.690	1.000	1.000	17002.13 BTU/MIN
	HOT SIDE	14.063	17.36	15.64	1376.00	746.22	2996.3	1787.6	.734	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	8.221	527.39	519.92	729.14	706.86	2477.2	2399.0	.052	1.000	1.000	-642.86 BTU/MIN
	HOT SIDE	5.842	900.00	882.35	300.00	684.16	35.4	145.3	.895	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	15.636	15.520	.104
EXIT	14.827	14.700	.112

Computer Case 65 (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	544.834	478.034	.209	1591.393
2	.000	.000	.000	.000	42	539.394	518.018	.191	1736.000
3	.000	.000	.000	.000	43	538.682	518.018	.191	1735.988
4	.000	.000	.000	.000	44	538.682	518.018	.191	1735.988
5	900.000	300.000	16.648	35.434	45	537.969	518.018	.191	1735.977
6	882.348	684.161	4.051	145.314	46	537.423	518.018	.190	1735.968
7	537.571	684.161	2.456	146.940	47	535.351	1110.205	.092	3804.061
8	537.571	684.161	.000	.000	48	537.969	518.018	.191	1735.977
9	537.571	684.161	2.456	146.940	49	537.969	518.018	.000	.000
10	537.123	684.161	2.454	146.943	50	535.352	1110.194	.092	3804.021
11	420.405	684.161	1.918	147.495	51	533.874	1110.194	.092	3803.985
12	200.000	664.341	.000	.000	52	533.538	1110.194	.092	3803.977
13	199.334	575.044	.000	.000	53	528.263	.000	.000	.000
14	199.334	575.044	.000	.000	54	528.376	729.138	.138	2477.187
15	199.334	575.044	.000	.000	55	533.335	1110.194	.092	3803.973
16	200.000	689.590	.000	.000	56	528.376	382.921	.252	1235.305
17	200.000	689.590	.000	.000	57	527.388	729.138	.138	2477.167
18	200.000	689.590	.000	.000	58	519.921	706.861	.141	2398.970
19	198.407	612.251	.000	.000	59	518.953	706.861	.140	2398.951
20	.000	.000	.000	.000	60	419.026	706.861	.114	2396.948
21	.000	.000	.000	.000	61	385.003	1964.446	.037	6831.055
22	.000	.000	.000	.000	62	384.904	1964.446	.000	.000
23	.000	.000	.000	.000	63	68.907	1645.001	.000	.000
24	.000	.000	.000	.000	64	17.779	1375.997	.000	.000
25	.000	.000	.000	.000	65	17.365	1375.997	.000	2996.331
26	575.000	55.000	3.984	-45.499	66	15.636	746.223	.000	1787.555
27	574.453	55.000	3.984	-45.507	67	14.827	746.223	.000	.000
28	571.830	399.788	.261	1300.239	68	.000	.000	.000	.000
29	571.308	399.788	.261	1300.235	69	.000	.000	.000	.000
30	571.308	399.788	.261	1300.235	70	.000	650.000	.000	.000
31	570.787	399.788	.261	1300.231	71	.000	648.449	.000	.000
32	565.199	460.007	.225	1525.586	72	.000	675.875	.000	.000
33	564.594	460.007	.225	1525.578	73	.000	.000	.000	.000
34	564.594	460.007	.225	1525.578	74	.000	.000	.000	.000
35	563.988	460.007	.224	1525.571	75	.000	.000	.000	.000
36	558.548	540.609	.190	1817.190	76	.000	.000	.000	.000
37	557.830	540.557	.189	1816.995	77	.000	.000	.000	.000
38	557.830	540.557	.189	1816.995	78	.000	.000	.000	.000
39	557.112	540.557	.189	1816.983	79	15.520	.104	.000	.000
40	545.485	478.034	.209	1591.402	80	14.700	.112	.000	1.000

Computer Case 668

* CONDITION * BYPASS AMBIENT PRESSURE .00 PSIA. 12 JUL 73 15:53:56

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	30.16	SPC	3.869	AMW	3.39
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	27.84	O/F	.682		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	.508		

TURBINE INFORMATION

FLOW	1.935	PRESSURE	53.32	1.89	EFFICIENCY 1ST	.429	A1	.1517	A3	.6300
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1960.0	1388.9	EFFICIENCY 2ND	.431	A2	.2335	A4	.6930
PRESSURE RATIO	28.17	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.499	NDOT	0.	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	807.77	706.89	749.96	749.96	749.98
PRESSURE IN	574.30	574.37	899.47	559.41	574.08
PRESSURE OUT	574.28	574.34	559.41	58.47	58.04
EFFECTIVE AREA	.45892	.41739	.00073	.00114	.00057
FLOW	1.099	.980	.784	.784	1.150

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.150	574.99	574.98	55.00	80.72	-45.5	78.7	.034	1.000	1.000	142.89 BTU/MIN
	HOT SIDE	.051	574.29	574.29	807.77	55.07	2753.5	-45.3	****	1.000	1.000	6 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.150	574.97	574.87	80.72	400.08	78.7	1301.4	.469	1.000	1.000	1406.33 BTU/MIN
	HOT SIDE	1.150	574.68	574.56	761.05	417.48	2590.0	1367.3	.505	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.150	574.85	574.72	400.08	761.05	1301.4	2590.0	.950	1.000	1.000	1482.15 BTU/MIN
	HOT SIDE	57.000	200.00	198.13	780.00	736.45	.0	.0	.115	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.150	574.55	574.41	417.48	706.89	1367.3	2400.2	.864	1.000	1.000	1187.99 BTU/MIN
	HOT SIDE	28.500	200.00	199.36	752.61	668.96	.0	.0	.250	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.170	574.35	574.34	706.89	1388.80	2400.2	4782.5	****	1.000	1.000	405.72 BTU/MIN
	HOT SIDE	1.935	1.82	1.14	1388.88	1291.86	3269.7	3061.1	.142	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.150	574.27	574.10	774.39	749.98	2636.7	2551.2	.051	1.000	1.000	-98.39 BTU/MIN
	HOT SIDE	.784	900.00	899.47	300.00	749.96	35.4	160.9	.949	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	1.136	1.080	.271
EXIT	.508	.271	.994

Computer Case 66B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	574.547	417.476	.251	1367.334
2	.000	.000	.000	.000	42	574.413	706.890	.155	2400.179
3	.000	.000	.000	.000	43	574.396	706.890	.155	2400.179
4	.000	.000	.000	.000	44	574.396	706.890	.155	2400.179
5	900.000	300.000	16.648	35.434	45	574.379	706.890	.155	2400.179
6	899.471	749.962	3.671	160.864	46	574.345	706.890	.155	2400.178
7	559.414	749.962	.000	.000	47	574.343	1388.801	.080	4782.531
8	.000	749.962	.000	.000	48	574.366	706.890	.155	2400.178
9	.000	.000	.000	.000	49	574.344	706.890	.000	.000
10	559.414	749.962	.000	.000	50	574.344	807.766	.132	2753.474
11	58.475	749.962	.238	163.972	51	574.323	807.766	.132	2753.474
12	200.000	752.612	.000	.000	52	574.305	807.766	.132	2753.474
13	199.359	668.955	.000	.000	53	574.278	.000	.000	.000
14	199.359	668.955	.000	.000	54	574.286	774.386	.139	2636.709
15	199.359	668.955	.000	.000	55	574.286	807.766	.132	2753.473
16	200.000	780.000	.000	.000	56	574.286	55.071	3.980	-45.265
17	200.000	780.000	.000	.000	57	574.267	774.386	.139	2636.709
18	200.000	780.000	.000	.000	58	574.103	749.978	.145	2551.170
19	198.132	736.453	.000	.000	59	574.085	749.978	.145	2551.169
20	.000	.000	.000	.000	60	58.044	749.978	.015	2540.204
21	.000	.000	.000	.000	61	53.339	1960.000	.005	6806.470
22	.000	.000	.000	.000	62	53.325	1960.000	.000	.000
23	.000	.000	.000	.000	63	10.183	1663.060	.000	.000
24	.000	.000	.000	.000	64	1.893	1388.877	.000	.000
25	.000	.000	.000	.000	65	1.817	1388.877	.000	3269.691
26	575.000	55.000	3.984	-45.499	66	1.136	1291.863	.000	3061.114
27	574.989	55.000	3.984	-45.500	67	.508	.000	.000	.000
28	574.976	80.721	2.163	78.727	68	.000	.000	.000	.000
29	574.975	80.721	2.163	78.727	69	.000	.000	.000	.000
30	574.975	80.721	2.163	78.727	70	.000	780.000	.000	.000
31	574.974	80.721	2.163	78.727	71	.000	736.453	.000	.000
32	574.872	400.084	.262	1301.396	72	.000	736.453	.000	.000
33	574.861	400.084	.262	1301.396	73	.000	.000	.000	.000
34	574.861	400.084	.262	1301.396	74	.000	.000	.000	.000
35	574.851	400.084	.262	1301.396	75	.000	.000	.000	.000
36	574.716	761.051	.142	2589.987	76	.000	.000	.000	.000
37	574.698	761.050	.142	2589.983	77	.000	.000	.000	.000
38	574.698	761.050	.142	2589.983	78	.000	.000	.000	.000
39	574.679	761.050	.142	2589.983	79	1.080	.271	.000	.000
40	574.558	417.476	.251	1367.334	80	.271	.994	.000	1.000

* CONDITION * NO BYP AMBIENT PRESSURE .00 PSIA. 14 JUL 73 10145121

HYDRAULIC POWER	350.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	221.53	SPC	1.988	AMW	3.37
HYDRAULIC PUMP	50.00	LUBE PUMP	4.00	SECOND STAGE	206.47	O/F	.670		
TOTAL GEAR BOX	400.00			TOTAL TURBINE	428.00	PT OUT	2.721		

TURBINE INFORMATION

FLOW	13.255	PRESSURE	366.60	10.13	EFFICIENCY 1ST	.443	A1	.1517	A3 .6300
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1960.0	1348.7	EFFICIENCY 2ND	.426	A2	.2335	A4 .6930
PRESSURE RATIO	36.20	ENTHALPY	.0	.0	EFFICIENCT TOTAL	.510	NDOT	0.	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1117.97	535.79	750.97	750.97	771.05
PRESSURE IN	538.46	543.16	884.32	555.95	526.59
PRESSURE OUT	536.19	543.16	555.95	401.14	401.24
EFFECTIVE AREA	.25762	.00000	.00503	.00856	.05733
FLOW	4.685	.000	5.319	5.319	7.936

Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	7.936	574.49	571.36	55.00	348.90	-45.5	1103.0	.276	1.000	1.000	9114.63 BTU/MIN
	HOT SIDE	3.251	537.43	536.19	1117.97	329.82	3831.1	1027.5	.741	1.000	1.000	6 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	7.936	570.51	563.41	348.90	460.00	1103.0	1525.5	.420	1.000	1.000	3352.99 BTU/MIN
	HOT SIDE	7.936	555.57	550.36	613.55	494.15	2072.7	1650.1	.451	1.000	1.000	6 PASS PARALL
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	7.936	562.28	557.05	460.00	613.55	1525.5	2072.8	.480	1.000	1.000	4342.88 BTU/MIN
	HOT SIDE	57.000	200.00	197.95	780.00	647.49	.0	.0	.414	1.000	1.000	4 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	7.936	549.74	544.52	494.15	535.79	1650.1	1799.8	.278	1.000	1.000	1187.96 BTU/MIN
	HOT SIDE	28.500	200.00	198.72	644.05	553.41	.0	.0	.605	1.000	1.000	4 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	7.936	542.26	540.32	535.79	1117.97	1799.7	3831.2	.716	1.000	1.000	16121.41 BTU/MIN
	HOT SIDE	13.255	9.48	6.09	1348.74	784.56	3197.9	1981.6	.694	1.000	1.000	2 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	7.936	535.17	527.58	795.09	771.05	2708.4	2624.0	.049	1.000	1.000	-669.71 BTU/MIN
	HOT SIDE	5.319	900.00	884.32	300.00	750.97	35.4	161.2	.911	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	6.087	5.787	.271
EXIT	2.721	1.444	1.000

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	549.738	494.145	.204	1650.056
2	.000	.000	.000	.000	42	544.519	535.786	.187	1799.750
3	.000	.000	.000	.000	43	543.839	535.786	.186	1799.739
4	.000	.000	.000	.000	44	543.839	535.786	.186	1799.739
5	900.000	300.000	16.648	35.434	45	543.159	535.786	.186	1799.727
6	884.321	750.973	3.602	161.159	46	542.256	535.786	.186	1799.712
7	555.945	750.973	.000	.000	47	540.315	1117.970	.092	3831.174
8	.000	750.973	.000	.000	48	543.159	535.786	.186	1799.727
9	.000	.000	.000	.000	49	543.159	535.786	.000	.000
10	555.945	750.973	.000	.000	50	540.315	1117.970	.092	3831.174
11	401.142	750.973	1.633	162.915	51	538.938	1117.970	.092	3831.141
12	200.000	644.046	.000	.000	52	538.457	1117.970	.092	3831.130
13	198.722	553.414	.000	.000	53	536.188	.000	.000	.000
14	198.722	553.414	.000	.000	54	536.188	795.087	.125	2708.408
15	198.722	553.414	.000	.000	55	537.432	1117.970	.092	3831.105
16	200.000	780.000	.000	.000	56	536.188	329.820	.297	1027.540
17	200.000	780.000	.000	.000	57	535.173	795.087	.125	2708.386
18	200.000	780.000	.000	.000	58	527.581	771.047	.128	2623.995
19	197.950	647.494	.000	.000	59	526.593	771.047	.128	2623.973
20	.000	.000	.000	.000	60	401.235	771.047	.098	2621.250
21	.000	.000	.000	.000	61	366.692	1960.000	.036	6814.087
22	.000	.000	.000	.000	62	366.598	1960.000	.000	.000
23	.000	.000	.000	.000	63	65.640	1643.622	.000	.000
24	.000	.000	.000	.000	64	10.126	1348.744	.000	.000
25	.000	.000	.000	.000	65	9.477	1348.744	.000	3197.910
26	575.000	55.000	3.984	-45.499	66	6.087	784.564	.000	1981.644
27	574.491	55.000	3.984	-45.506	67	2.721	.000	.000	.000
28	571.358	348.897	.299	1103.029	68	.000	.000	.000	.000
29	570.933	348.897	.298	1103.028	69	.000	.000	.000	.000
30	570.933	348.897	.298	1103.028	70	.000	780.000	.000	.000
31	570.508	348.897	.298	1103.027	71	.000	774.555	.000	.000
32	563.409	460.000	.224	1525.537	72	.000	799.152	.000	.000
33	562.843	460.000	.224	1525.530	73	.000	.000	.000	.000
34	562.843	460.000	.224	1525.530	74	.000	.000	.000	.000
35	562.277	460.000	.224	1525.522	75	.000	.000	.000	.000
36	557.046	613.554	.172	2072.769	76	.000	.000	.000	.000
37	556.309	613.554	.172	2072.756	77	.000	.000	.000	.000
38	556.309	613.554	.172	2072.756	78	.000	.000	.000	.000
39	555.571	613.554	.172	2072.742	79	5.787	.271	.000	.000
40	550.359	494.145	.204	1650.065	80	1.444	1.000	.000	1.000

* CONDITION * BYPASS AMBIENT PRESSURE 14.70 PSIA. 01 AUG 73 22104125

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	46.12	SPC	6.075	AMW	3.39
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	11.88	O/F	.682		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	14.715		

TURBINE INFORMATION

FLOW	3.038	PRESSURE	83.72	14.98	EFFICIENCY 1ST	.440	A1	.1517	A3 .6300
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1960.0	1596.2	EFFICIENCY 2ND	.564	A2	.2335	A4 .6940
PRESSURE RATIO	5.59	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.510	NDOT	0.	N 63000

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	946.46	665.46	749.83	749.83	750.00
PRESSURE IN	573.09	573.24	898.92	573.77	572.57
PRESSURE OUT	573.02	573.19	573.77	91.81	91.16
EFFECTIVE AREA	.39157	.33508	.00115	.00175	.01034
FLOW	1.444	1.255	1.232	1.232	1.806

HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.806	574.97	574.86	55.00	216.94	-45.5	579.6	.182	1.000	1.000	1128.80 BTU/MIN
	HOT SIDE	.362	573.03	573.02	946.46	87.44	3235.7	115.0	.964	1.000	1.000	6 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.806	574.83	574.48	216.94	460.00	579.6	1525.7	.458	1.000	1.000	1708.63 BTU/MIN
	HOT SIDE	1.806	574.00	573.69	747.79	479.55	2543.5	1597.4	.505	1.000	1.000	6 PASS PARALL
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.806	574.42	574.10	460.00	747.79	1525.7	2543.5	.899	1.000	1.000	1838.09 BTU/MIN
	HOT SIDE	57.000	200.00	198.11	780.00	725.75	.0	.0	.170	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.806	573.66	573.34	479.55	665.46	1597.4	2255.0	.744	1.000	1.000	1187.61 BTU/MIN
	HOT SIDE	28.500	200.00	199.32	729.57	644.56	.0	.0	.340	1.000	1.000	4 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.550	573.20	573.18	665.46	1587.17	2255.0	5481.6	.990	1.000	1.000	1776.22 BTU/MIN
	HOT SIDE	3.038	14.95	14.79	1596.25	1325.74	3718.1	3133.4	.291	1.000	1.000	2 PASS COUNT
HX NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.806	572.97	572.62	774.40	750.00	2634.7	2551.2	.051	1.000	1.000	-154.45 BTU/MIN
	HOT SIDE	1.232	900.00	898.92	300.00	749.83	35.4	160.8	.948	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	14.787	14.776	.032
EXIT	14.715	14.700	.038

Computer Case 68B (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.663	479.554	.219	1597.353
2	.000	.000	.000	.000	42	573.338	665.461	.165	2254.972
3	.000	.000	.000	.000	43	573.299	665.461	.165	2254.971
4	.000	.000	.000	.000	44	573.299	665.461	.165	2254.971
5	900.000	300.000	16.648	35.434	45	573.259	665.461	.165	2254.971
6	898.918	749.828	3.670	160.834	46	573.201	665.461	.165	2254.970
7	573.773	749.828	.000	.000	47	573.183	1587.171	.070	5481.974
8	.000	749.828	.000	.000	48	573.239	665.461	.165	2254.970
9	.000	.000	.000	.000	49	573.185	665.461	.000	.000
10	573.773	749.828	.000	.000	50	573.186	946.460	.116	3235.655
11	91.807	749.828	.374	163.791	51	573.129	946.460	.116	3235.654
12	200.000	729.569	.000	.000	52	873.093	946.460	.116	3235.653
13	199.322	644.562	.000	.000	53	573.019	.000	.000	.000
14	199.322	644.562	.000	.000	54	573.021	774.402	.138	2636.738
15	199.322	644.562	.000	.000	55	573.031	946.460	.116	3235.652
16	200.000	780.000	.000	.000	56	573.021	87.440	1.779	115.029
17	200.000	780.000	.000	.000	57	572.974	774.402	.138	2636.737
18	200.000	780.000	.000	.000	58	572.618	749.999	.144	2551.213
19	198.113	725.755	.000	.000	59	572.573	749.999	.144	2551.212
20	.000	.000	.000	.000	60	91.158	749.999	.023	2540.988
21	.000	.000	.000	.000	61	83.746	1960.000	.008	6807.282
22	.000	.000	.000	.000	62	83.725	1960.000	.000	.000
23	.000	.000	.000	.000	63	17.722	1670.748	.000	.000
24	.000	.000	.000	.000	64	14.981	1596.247	.000	.000
25	.000	.000	.000	.000	65	14.954	1596.247	.000	3718.122
26	575.000	55.000	3.984	*45.499	66	14.787	1325.737	.000	3133.368
27	574.974	55.000	3.984	*45.500	67	14.715	1325.737	.000	.000
28	574.855	216.940	.489	579.552	68	.000	.000	.000	.000
29	574.842	216.940	.489	579.552	69	.000	.000	.000	.000
30	574.842	216.940	.489	579.552	70	.000	780.000	.000	.000
31	574.828	216.940	.489	579.552	71	.000	725.755	.000	.000
32	574.479	459.999	.228	1525.674	72	.000	725.755	.000	.000
33	574.450	459.999	.228	1525.674	73	.000	.000	.000	.000
34	574.450	459.999	.228	1525.674	74	.000	.000	.000	.000
35	574.421	459.999	.228	1525.674	75	.000	.000	.000	.000
36	574.095	747.785	.145	2543.485	76	.000	.000	.000	.000
37	574.050	747.785	.145	2543.485	77	.000	.000	.000	.000
38	574.050	747.785	.145	2543.485	78	.000	.000	.000	.000
39	574.005	747.785	.145	2543.484	79	14.776	.032	.000	.000
40	573.693	479.554	.219	1597.354	80	14.700	.038	.000	1.000

* CONDITION * NO BYP AMBIENT PRESSURE 14.70 PSIA 20 JUL 73 14:15:19

HYDRAULIC POWER	350.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	232.45	SPC	2.078	AMW 3.35
HYDRAULIC PUMP	50.00	LUBE PUMP	4.00	SECOND STAGE	195.55	O/F	.663	
TOTAL GEAR BOX	400.00			TOTAL TURBINE	428.00	PT OUT	14.834	

TURBINE INFORMATION

FLOW	13.852	PRESSURE	383.89	17.86	EFFICIENCY 1ST	.443	A1	.1517	A3 .6300
SPECIFIC HEAT RATIO	1.357	TEMPERATURE	1960.0	1377.3	EFFICIENCY 2ND	.482	A2	.2335	A4 .6930
PRESSURE RATIO	21.49	ENTHALPY	.0	.0	EFFICIENCY TOTAL	.537	NDOT	=0.	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	1135.28	533.62	760.76	760.76	782.79
PRESSURE IN	534.72	539.96	882.97	570.42	521.20
PRESSURE OUT	532.14	539.96	570.42	420.12	421.18
EFFECTIVE AREA	.25556	.00000	.00531	.00887	.06602
FLOW	4.892	.000	5.525	5.525	8.328

Hx NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	8.328	574.44	570.97	55.00	353.14	-45.5	1119.7	.276	1.000	1.000	9703.50 BTU/MIN
	HOT SIDE	3.435	533.57	532.14	1135.28	339.69	3891.2	1066.6	.736	1.000	1.000	6 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	8.328	570.03	562.20	353.14	460.00	1119.7	1525.5	.418	1.000	1.000	3379.51 BTU/MIN
	HOT SIDE	8.328	553.59	547.88	608.59	493.95	2055.3	1649.3	.449	1.000	1.000	6 PASS PARALL
Hx NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	8.328	560.95	555.21	460.00	608.59	1525.5	2055.3	.464	1.000	1.000	4412.26 BTU/MIN
	HOT SIDE	57.000	200.00	197.94	780.00	645.24	.0	.0	.421	1.000	1.000	4 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	8.328	547.19	541.46	493.95	533.62	1649.3	1792.0	.267	1.000	1.000	1188.00 BTU/MIN
	HOT SIDE	28.500	200.00	198.70	642.62	551.88	.0	.0	.610	1.000	1.000	4 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	8.328	538.97	536.81	533.62	1135.28	1791.9	3891.3	.713	1.000	1.000	17482.78 BTU/MIN
	HOT SIDE	13.852	17.45	15.69	1377.27	794.30	3269.0	2006.9	.691	1.000	1.000	2 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT PRESSURE	IN TEMP	OUT TEMP	IN H	OUT H	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	8.328	531.00	522.32	807.08	782.79	2750.1	2665.0	.048	1.000	1.000	-708.71 BTU/MIN
	HOT SIDE	5.525	900.00	882.97	300.00	760.76	35.4	163.5	.909	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	15.690	15.567	.107
EXIT	14.834	14.700	.115

Computer Case 69 (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	547.194	493.947	.203	1649.297
2	.000	.000	.000	.000	42	541.461	533.621	.186	1791.954
3	.000	.000	.000	.000	43	540.711	533.621	.186	1791.942
4	.000	.000	.000	.000	44	540.711	533.621	.186	1791.942
5	900.000	300.000	16.648	35.434	45	539.961	533.621	.186	1791.930
6	882.969	760.756	3.530	163.485	46	538.965	533.621	.185	1791.913
7	570.417	760.756	.000	.000	47	536.810	1135.282	.090	3891.278
8	.000	760.756	.000	.000	48	539.961	533.621	.186	1791.930
9	.000	.000	.000	.000	49	539.961	533.621	.000	.000
10	570.417	760.756	.000	.000	50	536.810	1135.282	.090	3891.276
11	420.116	760.756	1.681	165.088	51	535.254	1135.282	.089	3891.239
12	200.000	642.621	.000	.000	52	534.716	1135.282	.089	3891.226
13	198.698	551.877	.000	.000	53	532.144	.000	.000	.000
14	198.698	551.877	.000	.000	54	532.144	807.077	.122	2750.135
15	198.698	551.877	.000	.000	55	533.567	1135.282	.089	3891.199
16	200.000	780.000	.000	.000	56	532.144	339.690	.286	1066.611
17	200.000	780.000	.000	.000	57	531.002	807.077	.122	2750.110
18	200.000	780.000	.000	.000	58	522.318	782.786	.125	2665.007
19	197.945	645.244	.000	.000	59	521.196	782.786	.124	2664.982
20	.000	.000	.000	.000	60	421.180	782.786	.100	2662.762
21	.000	.000	.000	.000	61	383.991	1960.000	.037	6814.503
22	.000	.000	.000	.000	62	383.893	1960.000	.000	.000
23	.000	.000	.000	.000	63	68.597	1643.519	.000	.000
24	.000	.000	.000	.000	64	17.865	1377.272	.000	.000
25	.000	.000	.000	.000	65	17.453	1377.272	.000	3269.050
26	575.000	55.000	3.984	-45.499	66	15.690	794.304	.000	2006.940
27	574.439	55.000	3.984	-45.567	67	14.834	794.304	.000	.000
28	570.975	353.142	.295	1119.707	68	.000	.000	.000	.000
29	570.501	353.142	.295	1119.705	69	.000	.000	.000	.000
30	570.501	353.142	.295	1119.705	70	.000	780.000	.000	.000
31	570.027	353.142	.294	1119.704	71	.000	774.462	.000	.000
32	562.201	460.000	.224	1525.521	72	.000	799.062	.000	.000
33	561.577	460.000	.223	1525.513	73	.000	.000	.000	.000
34	561.577	460.000	.223	1525.513	74	.000	.000	.000	.000
35	560.952	460.000	.223	1525.505	75	.000	.000	.000	.000
36	555.205	608.589	.173	2055.338	76	.000	.000	.000	.000
37	554.397	608.589	.172	2055.323	77	.000	.000	.000	.000
38	554.397	608.589	.172	2055.323	78	.000	.000	.000	.000
39	553.587	608.589	.172	2055.309	79	15.567	.107	.000	.000
40	547.881	493.947	.203	1649.308	80	14.700	.115	.000	1.000

Computer Case 70FB

* CONDITION * FULL BYPASS AMBIENT PRESSURE .00 PSIA. 12 JUL 73 15:54:27

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	30.22	SPC	3.736	AMW	3.19
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	27.78	O/F	.583		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	.526		

TURBINE INFORMATION

FLOW	1.868	PRESSURE	53.04	1.94	EFFICIENCY 1ST	.419	A1	.1517	A3	.6300
SPECIFIC HEAT RATIO	1.360	TEMPERATURE	1960.0	1400.3	EFFICIENCY 2ND	.423	A2	.2335	A4	.6930
PRESSURE RATIO	27.36	ENTHALPY	.0	.0	EFFICIENCT TOTAL	.490	NDOT	0.	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	938.19	938.17	922.04	922.04	922.05
PRESSURE IN	573.50	573.53	899.43	559.43	573.28
PRESSURE OUT	573.47	573.49	559.43	57.90	59.34
EFFECTIVE AREA	.47700	.47700	.00071	.00111	.00748
FLOW	1.180	1.180	.688	.688	1.180

Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.180	574.78	574.54	519.00	522.46	1740.1	1752.5	.008	1.000	1.000	14.66 BTU/MIN
	HOT SIDE	.000	573.53	573.53	938.19	519.00	3206.9	1740.1	****	1.000	1.000	6 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	1.180	574.51	574.25	522.46	645.85	1752.5	2186.3	.491	1.000	1.000	511.97 BTU/MIN
	HOT SIDE	1.180	573.97	573.82	773.68	649.91	2634.2	2200.5	.493	1.000	1.000	6 PASS PARALL
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	1.180	574.21	574.01	645.85	773.68	2186.5	2634.2	.953	1.000	1.000	528.77 BTU/MIN
	HOT SIDE	57.000	200.00	198.18	780.00	764.64	.0	.0	.114	1.000	1.000	4 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	1.180	573.80	573.60	649.91	938.17	2200.5	3206.9	.914	1.000	1.000	1187.88 BTU/MIN
	HOT SIDE	28.500	200.00	199.55	965.37	892.57	.0	.0	.231	1.000	1.000	4 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.000	573.55	573.55	938.17	1400.21	3206.9	4822.7	****	1.000	1.000	.00 BTU/MIN
	HOT SIDE	1.868	1.86	1.18	1400.27	1396.49	3433.9	3422.4	.008	1.000	1.000	2 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	1.180	573.50	573.30	938.19	922.05	3206.9	3150.8	.039	1.000	1.000	-66.27 BTU/MIN
	HOT SIDE	.688	900.00	899.43	519.00	922.04	105.8	202.2	.961	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	1.176	1.118	.271
EXIT	.526	.279	1.000

Computer Case 70FB (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	573.804	649.909	.168	2200.481
2	.000	.000	.000	.000	42	573.600	938.175	.117	3206.859
3	.000	.000	.000	.000	43	573.576	938.175	.117	3206.859
4	.000	.000	.000	.000	44	573.576	938.175	.117	3206.859
5	900.000	519.000	5.392	105.849	45	573.552	938.175	.117	3206.858
6	899.434	922.044	2.982	202.228	46	573.552	938.175	.117	3206.858
7	559.431	922.044	.000	.000	47	573.552	1400.208	.079	4822.711
8	.000	922.044	.000	.000	48	573.528	938.175	.117	3206.858
9	.000	.000	.000	.000	49	573.495	938.175	.000	.000
10	559.431	922.044	.000	.000	50	573.552	938.193	.117	3206.921
11	57.901	922.044	.194	203.974	51	573.528	938.193	.117	3206.921
12	200.000	965.367	.000	.000	52	573.504	938.193	.117	3206.920
13	199.545	892.571	.000	.000	53	573.471	.000	.000	.000
14	199.545	892.571	.000	.000	54	573.528	938.193	.117	3206.921
15	199.545	892.571	.000	.000	55	573.528	938.193	.117	3206.921
16	200.000	780.000	.000	.000	56	573.528	519.000	.203	1740.071
17	200.000	780.000	.000	.000	57	573.504	938.193	.117	3206.920
18	200.000	780.000	.000	.000	58	573.299	922.045	.119	3150.773
19	198.184	764.644	.000	.000	59	573.275	922.045	.119	3150.773
20	.000	.000	.000	.000	60	59.336	922.045	.012	3138.956
21	.000	.000	.000	.000	61	53.056	1960.000	.005	6806.532
22	.000	.000	.000	.000	62	53.042	1960.000	.000	.000
23	.000	.000	.000	.000	63	10.097	1668.407	.000	.000
24	.000	.000	.000	.000	64	1.937	1400.267	.000	.000
25	.000	.000	.000	.000	65	1.863	1400.267	.000	3433.868
26	575.000	519.000	.203	1740.095	66	1.176	1396.485	.000	3422.432
27	574.779	519.000	.203	1740.091	67	.526	1547.106	.000	.000
28	574.542	522.457	.202	1752.515	68	.000	.000	.000	.000
29	574.529	522.457	.202	1752.514	69	.000	.000	.000	.000
30	574.529	522.457	.202	1752.514	70	.000	780.000	.000	.000
31	574.515	522.457	.202	1752.514	71	.000	764.644	.000	.000
32	574.247	645.848	.170	2186.256	72	.000	764.644	.000	.000
33	574.230	645.848	.170	2186.255	73	.000	.000	.000	.000
34	574.230	645.848	.170	2186.255	74	.000	.000	.000	.000
35	574.214	645.848	.170	2186.255	75	.000	.000	.000	.000
36	574.011	773.680	.139	2634.232	76	.000	.000	.000	.000
37	573.991	773.680	.139	2634.232	77	.000	.000	.000	.000
38	573.991	773.680	.139	2634.232	78	.000	.000	.000	.000
39	573.971	773.680	.139	2634.231	79	1.118	.271	.000	.000
40	573.820	649.909	.168	2200.482	80	.279	1.000	.000	1.000

* CONDITION * FULL BYP AMBIENT PRESSURE .00 PSIA. 14 JUL 73 10144124

HYDRAULIC POWER	350.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	224.33	BPC	2.064	AMW	3.51
HYDRAULIC PUMP	50.00	LUBE PUMP	4.00	SECOND STAGE	203.67	O/F	.742		
TOTAL GEAR BOX	400.00			TOTAL TURBINE	428.00	PT OUT	3.627		

TURBINE INFORMATION

FLOW	13.761	PRESSURE	372.92	12.15	EFFICIENCY 1ST	.451	A1	.1517	A3 .6300
SPECIFIC HEAT RATIO	1.355	TEMPERATURE	1960.0	1348.6	EFFICIENCY 2ND	.450	A2	.2335	A4 .6930
PRESSURE RATIO	30.70	ENTHALPY	.0	.0	EFFICIENCT TOTAL	.526	NDOT	-0.	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	655.07	655.07	644.53	644.53	648.73
PRESSURE IN	518.61	519.44	879.52	555.83	511.47
PRESSURE OUT	517.46	518.29	555.83	407.57	400.34
EFFECTIVE AREA	.47700	.47700	.00517	.00885	.05559
FLOW	7.902	7.902	5.860	5.860	7.902

Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	7.902	565.09	556.19	519.00	519.17	1739.9	1740.4	.001	1.000	1.000	3.66 BTU/MIN
	HOT SIDE	.000	519.44	519.44	655.07	519.00	2217.5	1739.2	****	1.000	1.000	6 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	7.902	554.91	544.87	519.17	592.79	1740.4	1999.8	.441	1.000	1.000	2049.65 BTU/MIN
	HOT SIDE	7.902	535.29	529.13	686.21	612.12	2326.9	2067.2	.444	1.000	1.000	6 PASS PARALL
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	7.902	543.42	536.97	592.79	686.21	1999.7	2327.0	.499	1.000	1.000	2585.50 BTU/MIN
	HOT SIDE	57.000	200.00	198.07	780.00	702.94	.0	.0	.412	1.000	1.000	4 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	7.902	528.36	521.91	612.12	655.07	2067.2	2217.6	.302	1.000	1.000	1187.94 BTU/MIN
	HOT SIDE	28.500	200.00	199.36	754.50	670.89	.0	.0	.587	1.000	1.000	4 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.000	520.26	520.26	655.07	1348.54	2217.5	4639.3	****	1.000	1.000	.00 BTU/MIN
	HOT SIDE	13.761	11.59	8.11	1348.63	1347.79	3110.3	3099.8	.001	1.000	1.000	2 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	7.902	518.61	512.31	655.07	648.73	2217.5	2195.2	.047	1.000	1.000	-176.56 BTU/MIN
	HOT SIDE	5.860	900.00	879.52	519.00	644.53	105.8	135.9	.923	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	8.112	7.712	.271
EXIT	3.627	1.925	1.000

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	528.364	612.122	.164	2067.225
2	.000	.000	.000	.000	42	521.915	655.069	.152	2217.565
3	.000	.000	.000	.000	43	521.090	655.069	.152	2217.550
4	.000	.000	.000	.000	44	521.090	655.069	.152	2217.550
5	900.000	519.000	5.392	105.849	45	520.263	655.069	.152	2217.534
6	879.519	644.528	4.307	135.926	46	520.263	655.069	.152	2217.534
7	555.833	644.528	.000	.000	47	520.263	1348.542	.074	4639.350
8	.000	644.528	.000	.000	48	519.436	655.069	.152	2217.518
9	.000	.000	.000	.000	49	518.292	655.069	.000	.000
10	555.833	644.528	.000	.000	50	520.263	655.069	.152	2217.535
11	407.568	644.528	1.977	138.464	51	519.436	655.069	.152	2217.519
12	200.000	754.504	.000	.000	52	518.607	655.069	.151	2217.503
13	199.362	670.890	.000	.000	53	517.461	.000	.000	.000
14	199.362	670.890	.000	.000	54	519.436	655.069	.152	2217.519
15	199.362	670.890	.000	.000	55	519.436	655.069	.152	2217.519
16	200.000	780.000	.000	.000	56	519.436	519.000	.184	1739.212
17	200.000	780.000	.000	.000	57	518.607	655.069	.151	2217.503
18	200.000	780.000	.000	.000	58	512.305	648.726	.151	2195.159
19	198.069	702.936	.000	.000	59	511.473	648.726	.151	2195.143
20	.000	.000	.000	.000	60	400.341	648.726	.121	2193.162
21	.000	.000	.000	.000	61	373.020	1960.000	.036	6814.239
22	.000	.000	.000	.000	62	372.924	1960.000	.000	.000
23	.000	.000	.000	.000	63	66.931	1639.554	.000	.000
24	.000	.000	.000	.000	64	12.146	1348.632	.000	.000
25	.000	.000	.000	.000	65	11.587	1348.632	.000	3110.303
26	575.000	519.000	.203	1740.095	66	8.112	1347.791	.000	3099.836
27	565.093	519.000	.200	1739.937	67	3.627	.000	.000	.000
28	556.188	519.168	.196	1740.401	68	.000	.000	.000	.000
29	555.549	519.168	.196	1740.391	69	.000	.000	.000	.000
30	555.549	519.168	.196	1740.391	70	.000	780.000	.000	.000
31	554.908	519.168	.196	1740.381	71	.000	776.833	.000	.000
32	544.872	592.785	.173	1999.776	72	.000	801.385	.000	.000
33	544.146	592.785	.173	1999.763	73	.000	.000	.000	.000
34	544.146	592.785	.173	1999.763	74	.000	.000	.000	.000
35	543.419	592.785	.173	1999.750	75	.000	.000	.000	.000
36	536.966	686.210	.150	2326.960	76	.000	.000	.000	.000
37	536.126	686.210	.149	2326.943	77	.000	.000	.000	.000
38	536.126	686.210	.149	2326.943	78	.000	.000	.000	.000
39	535.285	686.210	.149	2326.927	79	7.712	.271	.000	.000
40	529.131	612.122	.164	2067.239	80	1.925	1.000	.000	1.000

* CONDITION * FULL BYP AMBIENT PRESSURE 14.70 PSIA. 12 JUL 73 13:55:07

HYDRAULIC POWER	.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	46.07	SPC	5.984	AMW	3.31
HYDRAULIC PUMP	30.00	LUBE PUMP	4.00	SECOND STAGE	11.92	O/F	.641		
TOTAL GEAR BOX	30.00			TOTAL TURBINE	58.00	PT OUT	14.717		

TURBINE INFORMATION

FLOW	2.992	PRESSURE	83.46	15.01	EFFICIENCY 1ST	.436	A1	.1517	A3 .6300
SPECIFIC HEAT RATIO	1.358	TEMPERATURE	1960.0	1598.8	EFFICIENCY 2ND	.565	A2	.2335	A4 .6930
PRESSURE RATIO	5.56	ENTHALPY	.0	.0	EFFICIENCT TOTAL	.507	NDOT	-0.	N 63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	833.12	833.12	819.87	819.87	819.89
PRESSURE IN	571.61	571.66	898.79	573.78	571.16
PRESSURE OUT	571.54	571.59	573.78	91.58	91.99
EFFECTIVE AREA	.47700	.47700	.00114	.00174	.01094
FLOW	1.823	1.823	1.169	1.169	1.823

Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	1.823	574.47	573.93	519.00	520.68	1740.1	1746.1	.005	1.000	1.000	11.00 BTU/MIN
	HOT SIDE	.000	571.66	571.66	833.12	519.00	2841.6	1740.0	****	1.000	1.000	6 PASS COUNT
3	COLD SIDE	1.823	573.87	573.25	520.68	640.01	1746.1	2165.8	.485	1.000	1.000	765.00 BTU/MIN
	HOT SIDE	1.823	572.65	572.29	766.65	646.89	2609.6	2189.9	.487	1.000	1.000	6 PASS PARALL
5	COLD SIDE	1.823	573.17	572.74	640.01	766.65	2165.8	2609.6	.905	1.000	1.000	808.95 BTU/MIN
	HOT SIDE	57.000	200.00	198.17	780.00	756.43	.0	.0	.168	1.000	1.000	4 PASS COUNT
6	COLD SIDE	1.823	572.25	571.82	646.89	833.12	2189.9	2841.6	.808	1.000	1.000	1187.95 BTU/MIN
	HOT SIDE	28.500	200.00	199.50	877.45	800.53	.0	.0	.334	1.000	1.000	4 PASS COUNT
8	COLD SIDE	.000	571.72	571.72	833.12	1598.68	2841.6	5522.1	****	1.000	1.000	.00 BTU/MIN
	HOT SIDE	2.992	14.99	14.80	1598.78	1594.73	3788.3	3777.3	.005	1.000	1.000	2 PASS COUNT
9	COLD SIDE	1.823	571.61	571.22	833.12	819.89	2841.6	2795.6	.042	1.000	1.000	-83.84 BTU/MIN
	HOT SIDE	1.169	900.00	898.79	519.00	819.87	105.8	177.6	.958	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	14.803	14.791	.035
EXIT	14.717	14.700	.041

Computer Case 72FB (Continued)

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	572.247	646.893	.169	2189.879
2	.000	.000	.000	.000	42	571.820	833.123	.128	2841.578
3	.000	.000	.000	.000	43	571.767	833.123	.128	2841.577
4	.000	.000	.000	.000	44	571.767	833.123	.128	2841.577
5	900.000	519.000	5.392	105.849	45	571.715	833.123	.128	2841.576
6	898.789	819.869	3.265	177.551	46	571.715	833.123	.128	2841.576
7	573.779	819.869	.000	.000	47	571.715	1598.684	.069	5522.108
8	.000	819.869	.000	.000	48	571.663	833.123	.128	2841.575
9	.000	.000	.000	.000	49	571.593	833.123	.000	.000
10	573.779	819.869	.000	.000	50	571.715	833.119	.128	2841.562
11	91.581	819.869	.336	179.734	51	571.663	833.119	.128	2841.560
12	200.000	877.454	.000	.000	52	571.611	833.119	.128	2841.559
13	199.495	800.528	.000	.000	53	571.541	.000	.000	.000
14	199.495	800.528	.000	.000	54	571.663	833.119	.128	2841.560
15	199.495	800.528	.000	.000	55	571.663	833.119	.128	2841.560
16	200.000	780.000	.000	.000	56	571.663	519.000	.202	1740.042
17	200.000	780.000	.000	.000	57	571.611	833.119	.128	2841.559
18	200.000	780.000	.000	.000	58	571.215	819.892	.130	2795.564
19	198.169	756.427	.000	.000	59	571.164	819.892	.130	2795.563
20	.000	.000	.000	.000	60	91.985	819.892	.021	2784.793
21	.000	.000	.000	.000	61	83.479	1960.000	.008	6807.484
22	.000	.000	.000	.000	62	83.458	1960.000	.000	.000
23	.000	.000	.000	.000	63	17.688	1673.043	.000	.000
24	.000	.000	.000	.000	64	15.013	1598.782	.000	.000
25	.000	.000	.000	.000	65	14.986	1598.782	.000	3788.324
26	575.000	519.000	.203	1740.095	66	14.803	1594.730	.000	3777.268
27	574.473	519.000	.203	1740.086	67	14.717	1594.730	.000	.000
28	573.931	520.681	.202	1746.121	68	.000	.000	.000	.000
29	573.898	520.681	.202	1746.120	69	.000	.000	.000	.000
30	573.898	520.681	.202	1746.120	70	.000	780.000	.000	.000
31	573.865	520.681	.202	1746.119	71	.000	756.427	.000	.000
32	573.250	640.013	.171	2165.789	72	.000	756.427	.000	.000
33	573.211	640.013	.171	2165.788	73	.000	.000	.000	.000
34	573.211	640.013	.171	2165.788	74	.000	.000	.000	.000
35	573.171	640.013	.171	2165.787	75	.000	.000	.000	.000
36	572.745	766.651	.140	2609.571	76	.000	.000	.000	.000
37	572.697	766.651	.140	2609.569	77	.000	.000	.000	.000
38	572.697	766.651	.140	2609.569	78	.000	.000	.000	.000
39	572.649	766.651	.140	2609.568	79	14.791	.035	.000	.000
40	572.287	646.893	.169	2189.880	80	14.700	.041	.000	1.000

Computer Case 73FB

* CONDITION * FULL BYP AMBIENT PRESSURE 14.70 PSIA. 14 JUL 73 10144104

HYDRAULIC POWER	350.00	GEAR BOX LOSS	24.00	FIRST STAGE POWER	233.60	SPC	2.148	AMW	3.51
HYDRAULIC PUMP	50.00	LURE PUMP	4.00	SECOND STAGE	194.40	O/F	.743		
TOTAL GEAR BOX	400.00			TOTAL TURBINE	428.00	PT OUT	14.930		

TURBINE INFORMATION

FLOW	14.320	PRESSURE	387.86	18.61	EFFICIENCY 1ST	.451	A1	.1517	A3	.6300
SPECIFIC HEAT RATIO	1.355	TEMPERATURE	1960.0	1371.9	EFFICIENCY 2ND	.495	A2	.2335	A4	.6930
PRESSURE RATIO	20.84	ENTHALPY	.0	.0	EFFICIENCT TOTAL	.547	NDOT	0.	N	63000.

CONTROL VALVES

	PREHEATER BYPASS	RECUPERATOR BYPASS	O2 PRES REG	OXYGEN FLOW	HYDROGEN FLOW
TEMPERATURE	651.91	651.87	641.22	641.22	645.72
PRESSURE IN	514.10	515.01	877.86	570.32	506.31
PRESSURE OUT	512.86	513.77	570.32	423.84	416.24
EFFECTIVE AREA	.47700	.47700	.00543	.00907	.06263
FLOW	8.214	8.214	6.106	6.106	8.214

Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
1	COLD SIDE	8.214	564.29	554.70	519.00	519.16	1739.9	1740.3	.001	1.000	1.000	3.42 BTU/MIN
	HOT SIDE	.000	515.00	515.00	651.91	519.00	2206.4	1739.1	****	1.000	1.000	6 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
3	COLD SIDE	8.214	553.31	542.49	519.16	591.11	1740.3	1993.9	.439	1.000	1.000	2082.65 BTU/MIN
	HOT SIDE	8.214	532.13	525.49	683.01	610.59	2315.7	2061.8	.442	1.000	1.000	6 PASS PARALL
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
5	COLD SIDE	8.214	540.92	533.95	591.11	683.01	1993.8	2315.7	.487	1.000	1.000	2643.70 BTU/MIN
	HOT SIDE	57.000	200.00	198.07	780.00	701.14	.0	.0	.418	1.000	1.000	4 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
6	COLD SIDE	8.214	524.66	517.70	610.59	651.87	2061.8	2206.3	.291	1.000	1.000	1186.81 BTU/MIN
	HOT SIDE	28.500	200.00	199.36	752.44	668.74	.0	.0	.590	1.000	1.000	4 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
8	COLD SIDE	.000	515.91	515.91	651.87	1371.83	2206.2	4721.3	****	1.000	1.000	.00 BTU/MIN
	HOT SIDE	14.320	18.21	16.03	1371.92	1371.08	3157.0	3146.5	.001	1.000	1.000	2 PASS COUNT
Hx NO.		FLOW	IN PRESSURE	OUT	IN TEMP	OUT	IN H	OUT	EFF.	SCALE FACTOR		HEAT TRANS.
9	COLD SIDE	8.214	514.10	507.21	651.91	645.72	2206.3	2184.5	.047	1.000	1.000	-179.25 BTU/MIN
	HOT SIDE	6.106	900.00	877.86	519.00	641.22	105.8	135.1	.920	1.000	1.000	1 PASS PARALL

EXHAUST DUCT	PT	PS	MACH
INLET	16.029	15.815	.139
EXIT	14.930	14.700	.150

STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY	STATION	PRESSURE	TEMPERATURE	RHO	ENTHALPY
1	.000	.000	.000	.000	41	524.660	610.589	.163	2061.787
2	.000	.000	.000	.000	42	517.696	651.870	.152	2206.277
3	.000	.000	.000	.000	43	516.801	651.870	.152	2206.260
4	.000	.000	.000	.000	44	516.801	651.870	.152	2206.260
5	900.000	519.000	5.392	105.849	45	515.905	651.870	.151	2206.243
6	877.859	641.216	4.322	135.149	46	515.905	651.870	.151	2206.243
7	570.320	641.216	.000	.000	47	515.905	1371.832	.072	4721.317
8	.000	641.216	.000	.000	48	515.008	651.870	.151	2206.225
9	.000	.000	.000	.000	49	513.767	651.870	.000	.000
10	570.320	641.216	.000	.000	50	515.897	651.909	.151	2206.381
11	423.838	641.216	2.067	137.613	51	514.999	651.909	.151	2206.364
12	200.000	752.439	.000	.000	52	514.100	651.909	.151	2206.347
13	199.359	668.741	.000	.000	53	512.857	.000	.000	.000
14	199.359	668.741	.000	.000	54	514.999	651.909	.151	2206.364
15	199.359	668.741	.000	.000	55	514.999	651.909	.151	2206.364
16	200.000	780.000	.000	.000	56	514.999	519.000	.182	1739.142
17	200.000	780.000	.000	.000	57	514.100	651.909	.151	2206.347
18	200.000	780.000	.000	.000	58	507.212	645.717	.150	2184.523
19	198.066	701.138	.000	.000	59	506.307	645.717	.150	2184.506
20	.000	.000	.000	.000	60	416.239	645.717	.126	2182.939
21	.000	.000	.000	.000	61	387.959	1960.000	.038	6814.599
22	.000	.000	.000	.000	62	387.859	1960.000	.000	.000
23	.000	.000	.000	.000	63	69.515	1639.038	.000	.000
24	.000	.000	.000	.000	64	18.614	1371.925	.000	.000
25	.000	.000	.000	.000	65	18.212	1371.925	.000	3156.994
26	575.000	519.000	.203	1740.095	66	16.029	1371.085	.000	3146.537
27	564.295	519.000	.199	1739.925	67	14.930	.000	.000	.000
28	554.701	519.158	.196	1740.341	68	.000	.000	.000	.000
29	554.008	519.158	.196	1740.330	69	.000	.000	.000	.000
30	554.008	519.158	.196	1740.330	70	.000	780.000	.000	.000
31	553.314	519.158	.196	1740.319	71	.000	776.759	.000	.000
32	542.495	591.113	.173	1993.874	72	.000	801.312	.000	.000
33	541.709	591.113	.173	1993.860	73	.000	.000	.000	.000
34	541.709	591.113	.173	1993.860	74	.000	.000	.000	.000
35	540.922	591.113	.172	1993.846	75	.000	.000	.000	.000
36	533.954	683.015	.150	2315.708	76	.000	.000	.000	.000
37	533.038	683.015	.149	2315.689	77	.000	.000	.000	.000
38	533.038	683.015	.149	2315.689	78	.000	.000	.000	.000
39	532.128	683.015	.149	2315.671	79	15.815	.139	.000	.000
40	525.492	610.589	.163	2061.802	80	14.700	.150	.000	1.000