Proposed In-Service Criteria for two Pratt and Whitney FT8 Twin Pac's at the Empire Energy Center

1. All major construction is completed.

   All major construction has been completed. A site tour is available at any time to demonstrate this point.

2. All pre-operational tests have been successfully completed.

   Per-operational tests were conducted and recorded in accordance with Pratt & Whitney Commissioning Manuals and Brush Generator commissioning manual. These manuals are available for review at the site.

3. Unit will successfully demonstrate its ability to initiate the proper start sequence resulting in the unit operating from zero rpm (or turning gear) to full load when prompted at a location (or locations) from which it is normally operated.

   These engines have between 174 and 202 starts as of March 26, 2004. In Attachment A are trend graphs for each engine showing a start sequence in the recent past. The units are normally started to the local control skids. This is where most of the starts have been initiated, the units can and have been started from the central control room on site. The electronic records do not record where the start is initiated from.

4. If the unit has fast start capability, unit will demonstrate its ability to meet fast start criteria.

   These units do not have a separate fast start capability.

5. Units will successfully demonstrate its ability to initiate the proper shutdown sequence from full load resulting in zero rpm (or turning gear) when prompted at a location (or locations) from which it is normally operated.

   In Attachment B are trend graphs for each engine showing a normal shutdown sequence in the recent past.

6. Unit will successfully demonstrate its ability to operate at minimum load for 1 hour.

   Since new, each of the engines has operated over 700 hours and each unit has produced over 27,000 MWH. The units have operated successfully at all load points including minimum load.

7. Unit will successfully demonstrate its ability to operate at or above 98% of full load for 4 continuous hours.

   In Attachment C are trend graphs for each unit demonstrating their ability to operate at or above 98% of full load for 4 hours.

8. Unit will successfully meet all operational guarantees.

   Performance testing was conducted by Power Generation Technologies. Operational guarantees were met. The test report is available for review at the plant site.

9. Transmission facilities will successfully demonstrate its capability to export the entire plant net capacity.

   In Attachment D is a copy of "Generation Interconnection Study" performed for the Southwest Power Pool. This study demonstrates little or no impact on the transmission system as a result of these new units under contingency conditions. We have completed the work identified at the end of the report.

   Similar studies show that under normal conditions (no contingencies) the new units have no impact on the transmission system.

   In addition to the study, we have operated all four units at the Energy Center at the same time on three different times last July and August with no limitation on our transmission system.

10. Unit will successfully demonstrate its ability to start on Liquid fuel.

    In Attachment E is a copy the log book entries for unit 4 on April 15, 2003 showing that unit 4 was started on liquid fuel twice and transferred from liquid fuel to natural gas.

    Similar tests were run on unit 3 during startup.

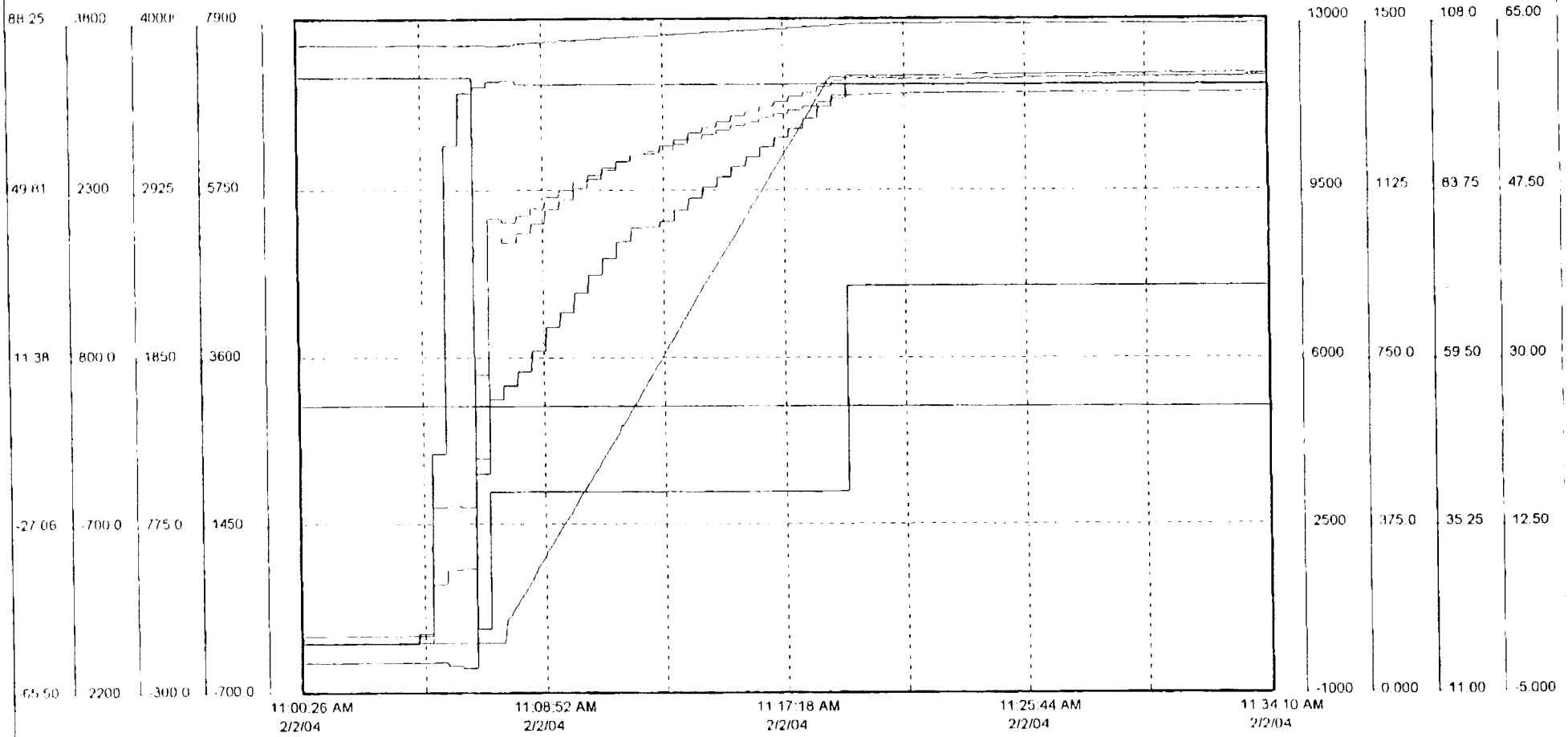
11. Units will successfully demonstrate its ability to transfer for natural gas fuel to liquid fuel

    In Attachment F is a copy of the log book entries for unit 4 for January 29, 2004 showing that we transferred from Natural gas to liquid fuel.
    Also in Attachment F for unit 3 is a copy of the log book entries for December 12, 2003 showing that we transferred from natural gas to liquid fuel.

Attachment A

AU04TM19_EngB_Startup

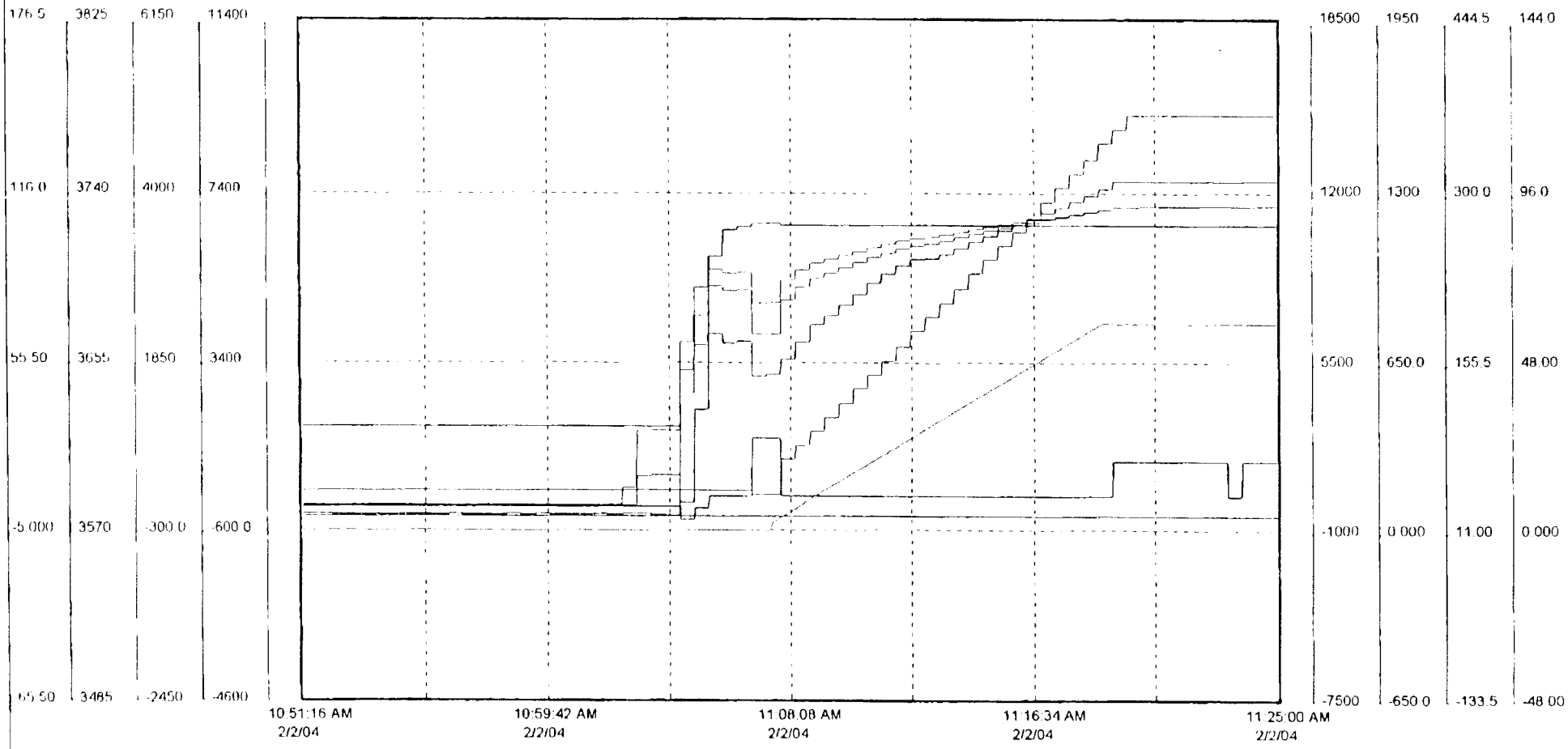
Unit 4B - Startup to Full Load



Legend	Trend Name	Comment	Min.	Max.	Avg.	Min. Scale	Max. Scale	Eng. Units
	A04B00SD8PV_	NL HSS Speed	0.000	7242	5532	-700.0	7900	rpm
	A04B00SD1PV_	NH HSS Speed	0.000	11521	9037	-1000	13000	rpm
	A04B00SD3PV_	NP HSS Speed	0.000	3625	3078	-300.0	4000	rpm
	A04B00AV1PV_	Average EGT	50.57	1359	996	0.000	1500	Deg F
	A04B00SD3CO_	NP Reference	3588	3779	3705	-2200	3800	rpm
	A04B00CN8PV_	In Control Analog	20.00	100.0	63.47	11.00	108.0	Units
	A04BFY1001PSSE_	FY1001 Mod Valve Position Req	-0.001	-0.001	-0.001	-65.50	88.25	%
	A04UMWPV	MW	0.000	59.40	37.23	-5.000	65.00	MW

AU04TM18_EngA_Startup

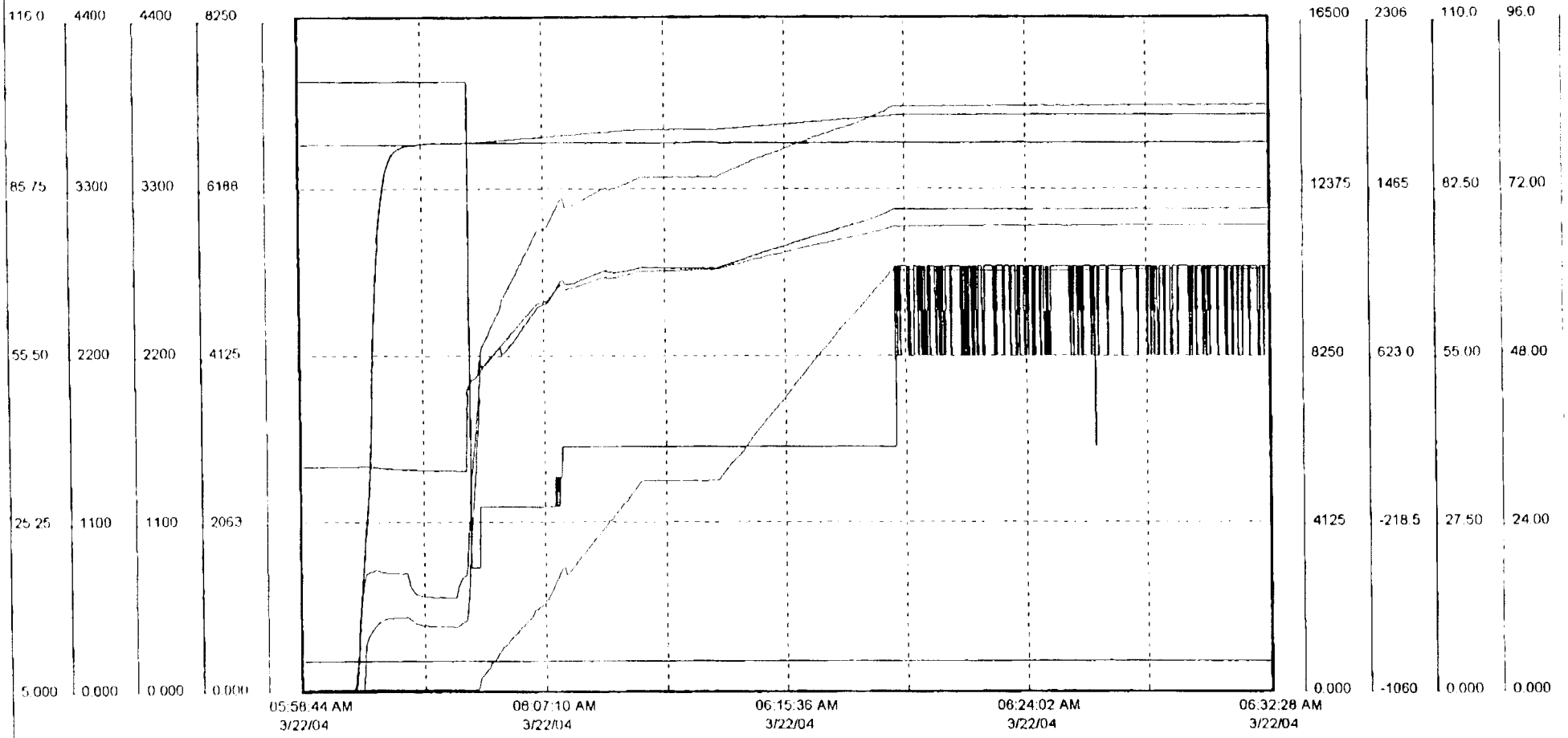
Unit 4A - Startup to Full Load



Legend	Trend Name	Comment	Min.	Max.	Avg.	Min. Scale	Max. Scale	Eng. Units
	A04A00SD8PV_	NL HSS Speed	0.000	7122	3811	-4600	11400	rpm
	A04A00SD1PV_	NH HSS Speed	0.000	11524	6466	-7500	18500	rpm
	A04A00SD3PV_	NP HSS Speed	0.000	3626	2117	-2450	6150	rpm
	A04A00AV1PV_	Average EGT	58.14	1348	681.1	-650.0	1950	Deg F
	A04A00SD3CO_	NP Reference	3588	3779	3654	3485	3825	rpm
	A04A00CN8PV_	In Control Analog	20.00	100.0	68.81	-133.5	444.5	Units
	A04AFY1001PSSE_	FY1001 Mod Valve Position Req	-0.001	-0.001	-0.001	-65.50	176.5	%
	A04UMWPV	MW	0.000	59.30	21.12	-48.00	144.0	MW

AU03TM18_EngA_Startup

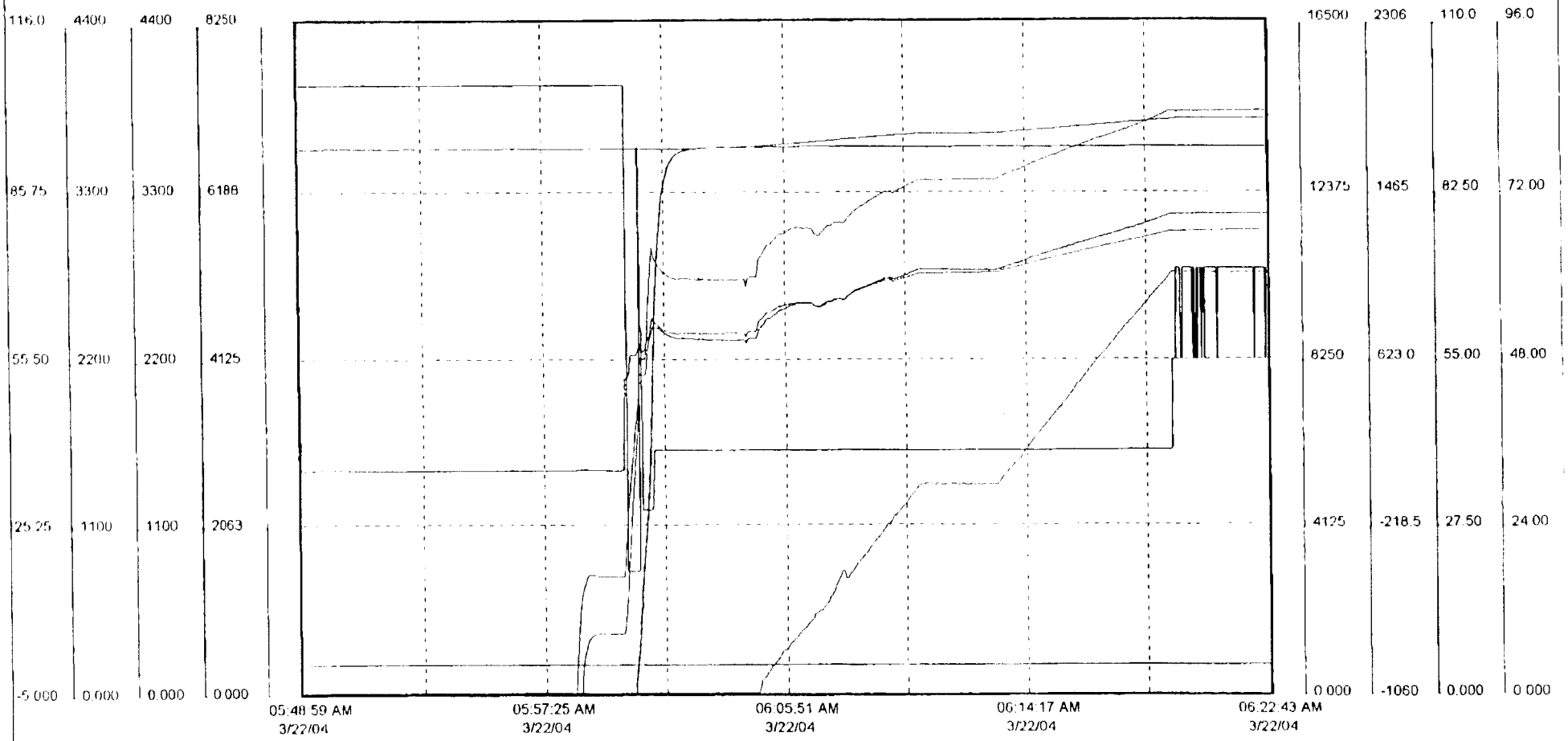
Start to Full Load



Legend	Trend Name	Comment	Min.	Max.	Avg.	Min. Scale	Max Scale	Eng. Units
	A03A00SD8PV	NL HSS Speed	0.000	7219	5592	0.000	8250	rpm
	A03A00SD1PV	NH HSS Speed	0.000	11497	9241	0.000	16500	rpm
	A03A00SD3PV	NP HSS Speed	0.000	3604	3343	0.000	4400	rpm
	A03A00AV1PV	Average EGT	38.89	1367	1001	-1060	2306	Deg F
	A03A00SD3CO	NP Reference	3590	3779	3707	0.000	4400	rpm
	A03A00CN8PV	In Control Analog	20.00	100.0	59.60	0.000	110.0	Units
	A03AFY1001PSSE	FY1001 Mod Valve Position Req	-0.001	-0.001	-0.001	-5.000	116.0	%
	A03UMWPV	MW	0.000	60.70	36.81	0.000	96.0	MW

AU03TM19_EngB_Startup

Unit 3B - Startup to Full Load

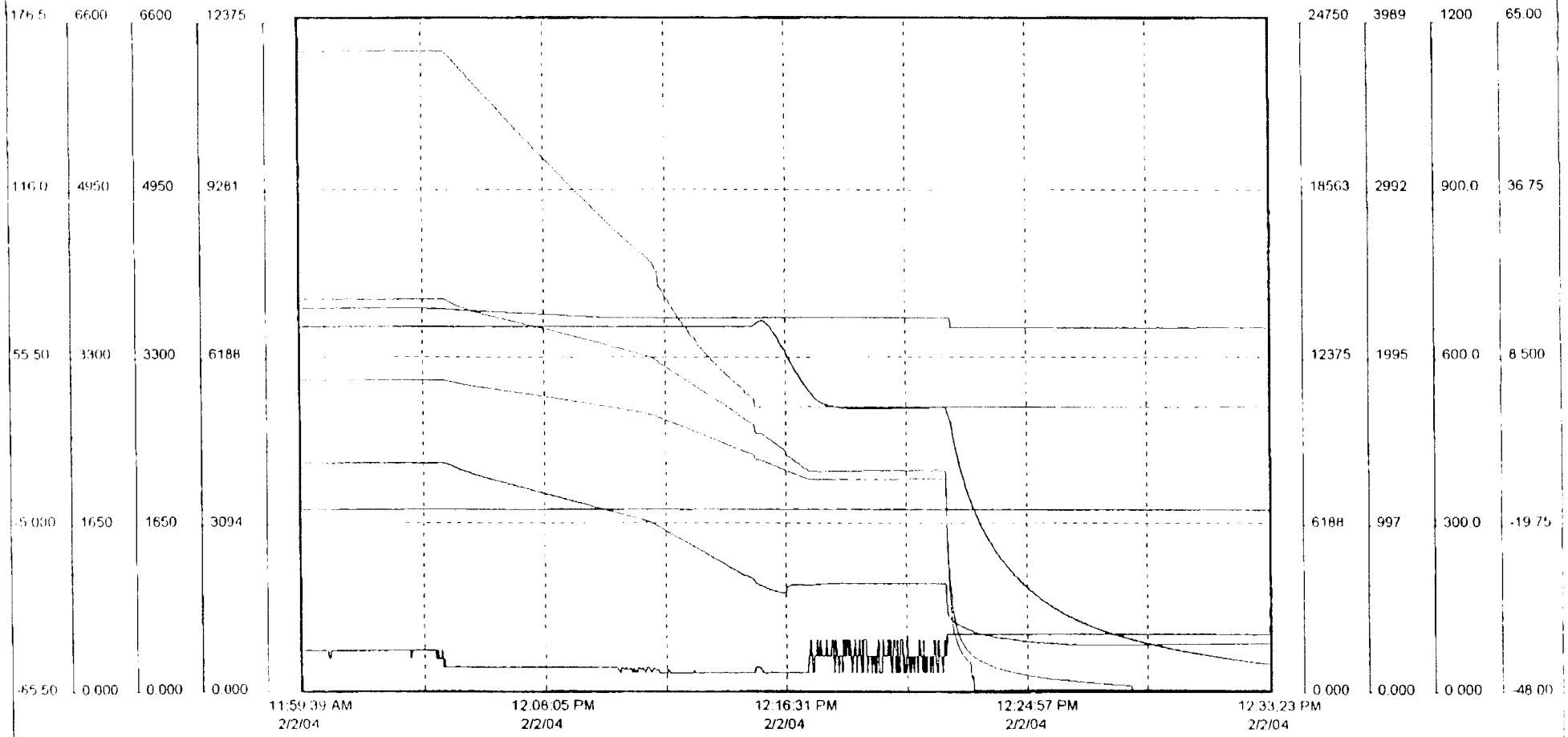


Legend	Trend Name	Comment	Min.	Max.	Avg.	Min. Scale	Max. Scale	Eng. Units
	A03B00SD8PV	NL HSS Speed	0.000	7185	4126	0.000	8250	rpm
	A03B00SD1PV	NH HSS Speed	0.000	11433	6908	0.000	16500	rpm
	A03B00SD3PV	NP HSS Speed	0.000	3602	2301	0.000	4400	rpm
	A03B00AV1PV	Average EGT	58.56	1354	718.2	-1060	2306	Deg F
	A03B00SD3CO	NP Reference	3590	3779	3652	0.000	4400	rpm
	A03B00CN8PV	In Control Analog	20.00	100.0	62.58	0.000	110.0	Units
	A03BFY1001PSSE	FY1001 Mod Valve Position Req	-0.001	-0.001	-0.001	-5.000	116.0	%
	A03UMWPV	MW	0.000	60.60	19.30	0.000	96.0	MW

Attachment B

AU04TM19_EngB_Shutdown

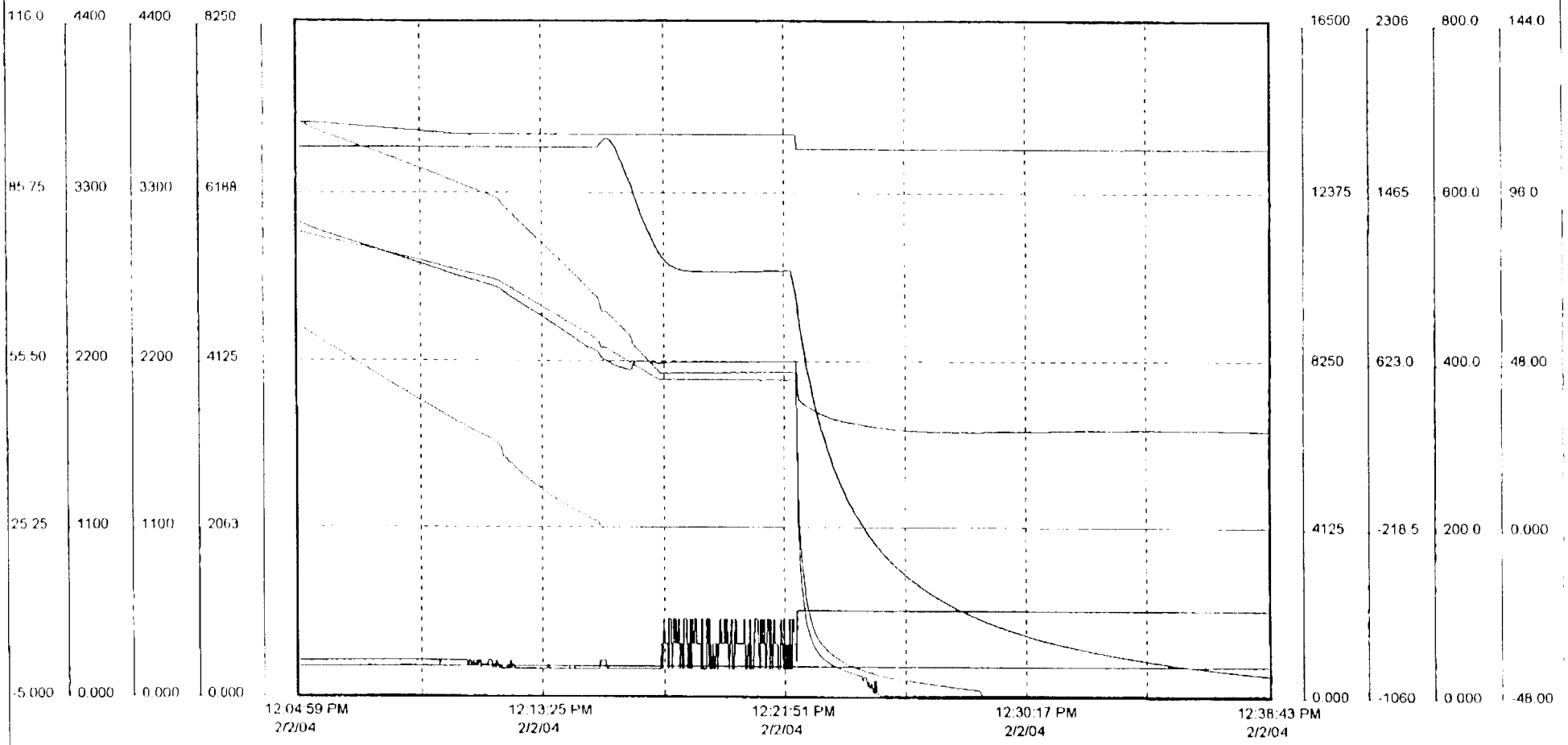
UNit 4B - Full Load to Shutdown



Legend	Trend Name	Comment	Min.	Max.	Avg.	Min. Scale	Max. Scale	Eng. Units
	A04B00SD8PV	NL HSS Speed	0.000	7289	3947	0.000	12375	rpm
	A04B00SD1PV	NH HSS Speed	0.000	11519	6751	0.000	24750	rpm
	A04B00SD3PV	NP HSS Speed	255.9	3658	2537	0.000	6600	rpm
	A04B00AV1PV	Average EGT	265.4	1360	759.4	0.000	3989	Deg F
	A04B00SD3CO	NP Reference	3590	3779	3675	0.000	6600	rpm
	A04B00CN8PV	In Control Analog	30.00	100.0	65.47	0.000	1200	Units
	A04BFY1001PSSE	FY1001 Mod Valve Position Req	-0.001	-0.001	-0.001	-65.50	176.5	%
	A04UMWPV	MW	0.000	60.00	18.88	-48.00	65.00	MW

AU04TM18_EngA_Shutdown

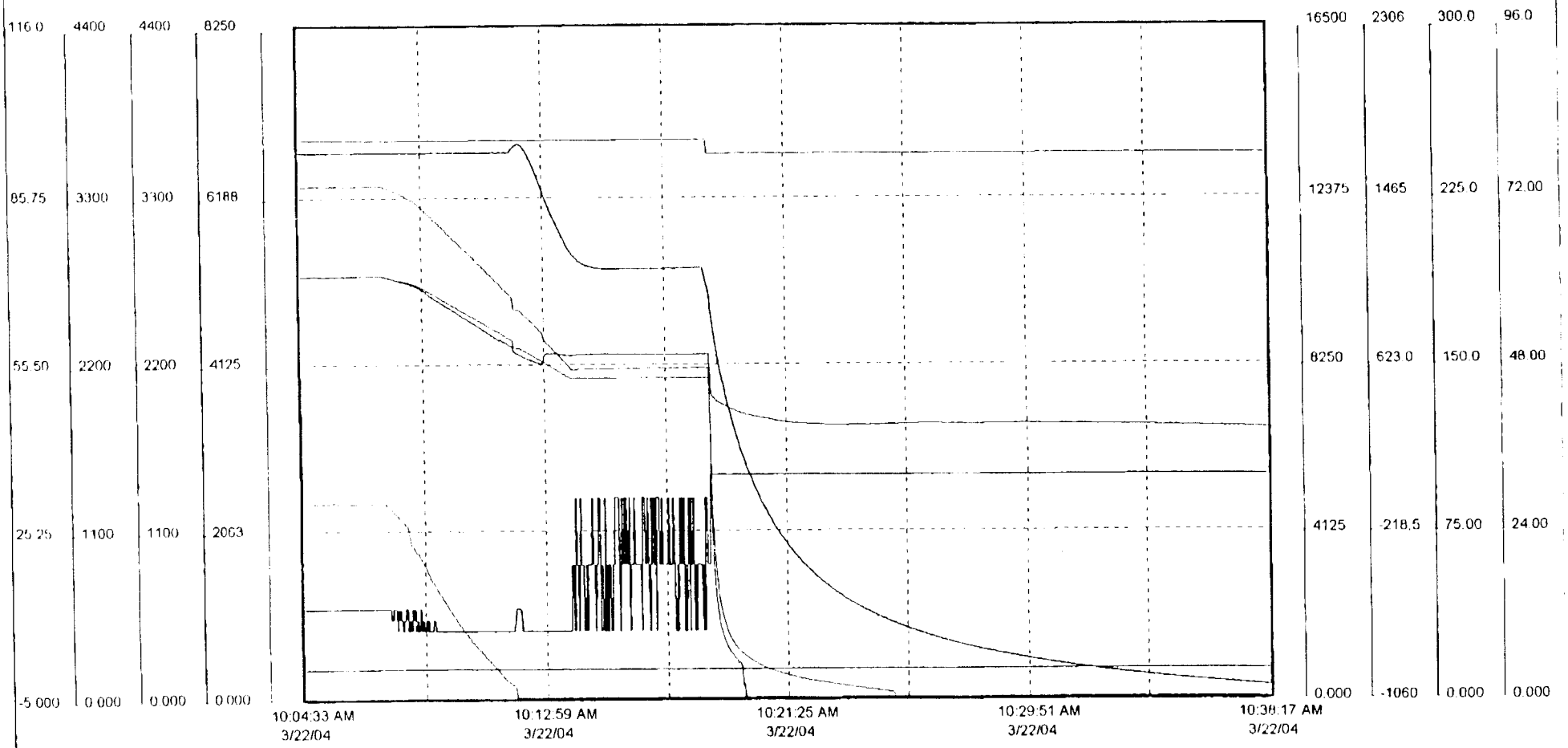
Unit 4A - Full Load to Shutdown



Legend	Trend Name	Comment	Min.	Max.	Avg.	Min. Scale	Max. Scale	Eng. Units
	A04A00SD8PV	NL HSS Speed	0.000	7058	2801	0.000	8250	rpm
	A04A00SD1PV	NH HSS Speed	0.000	11439	4967	0.000	16500	rpm
	A04A00SD3PV	NP HSS Speed	127.9	3658	1997	0.000	4400	rpm
	A04A00AV1PV	Average EGT	265.5	1321	586.0	-1060	2306	Deg F
	A04A00SD3CO	NP Reference	3590	3765	3645	0.000	4400	rpm
	A04A00CN8PV	In Control Analog	30.00	100.0	70.34	0.000	800.0	Units
	A04AFY1001PSSE	FY1001 Mod Valve Position Req	-0.001	-0.001	-0.001	-5.000	116.0	%
	A04UMWPV	MW	0.000	58.15	9.40	-48.00	144.0	MW

AU03TM18_EngA_Shutdown

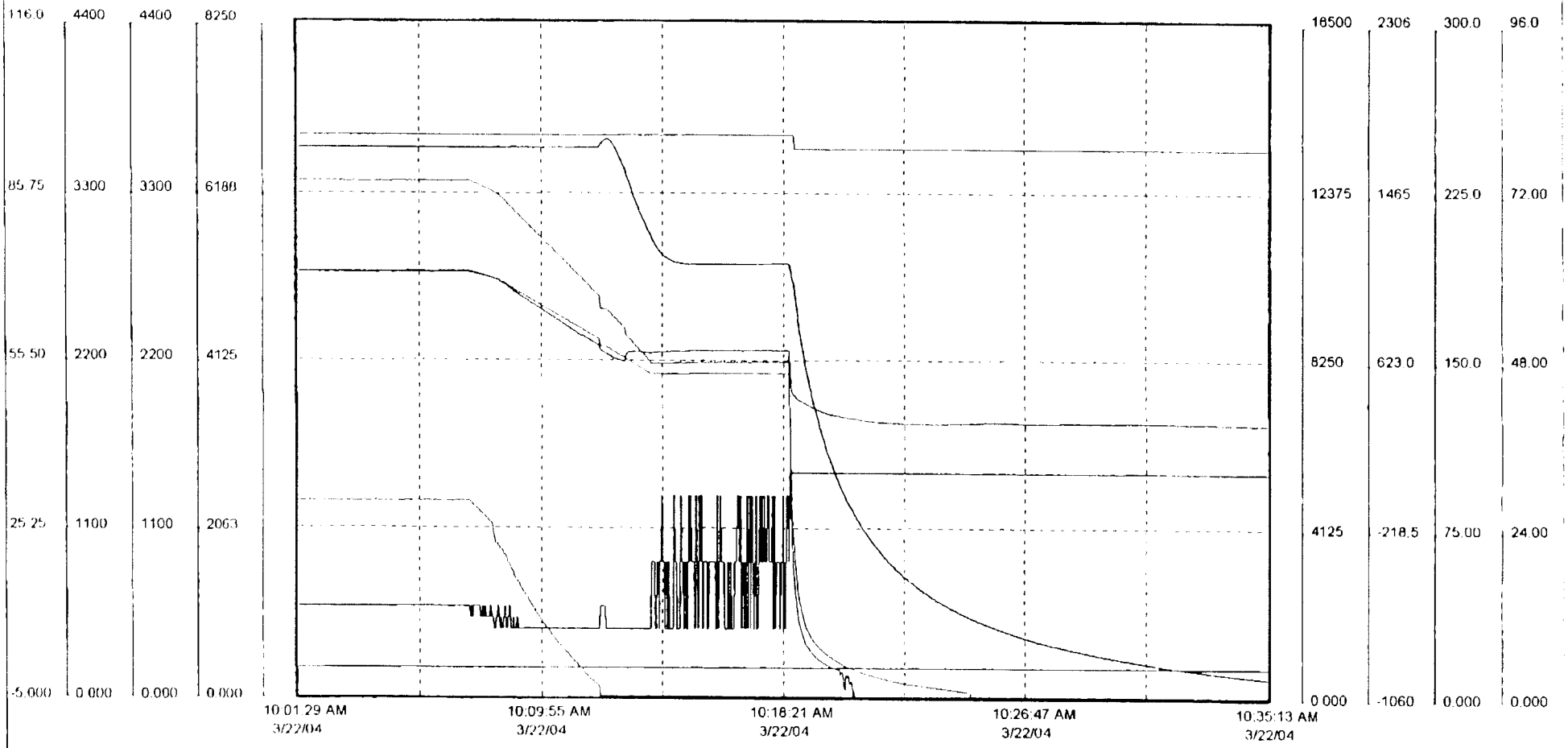
Unit 3A - Full Load to Shutdown



Legend	Trend Name	Comment	Min.	Max.	Avg.	Min. Scale	Max. Scale	Eng. Units
	A03A00SD8PV	NL HSS Speed	0.000	6349	2178	0.000	8250	rpm
	A03A00SD1PV	NH HSS Speed	0.000	10475	3952	0.000	16500	rpm
	A03A00SD3PV	NP HSS Speed	72.88	3656	1681	0.000	4400	rpm
	A03A00AV1PV	Average EGT	298.8	1078	535.9	-1060	2306	Deg F
	A03A00SD3CO	NP Reference	3590	3681	3628	0.000	4400	rpm
	A03A00CN8PV	In Control Analog	30.00	100.0	78.31	0.000	300.0	Units
	A03AFY1001PSSE	FY1001 Mod Valve Position Req	-0.001	-0.001	-0.001	-5.000	116.0	%
	A03UMWPV	MW	0.000	28.00	4.177	0.000	96.0	MW

AU03TM19_EngB_Shutdown

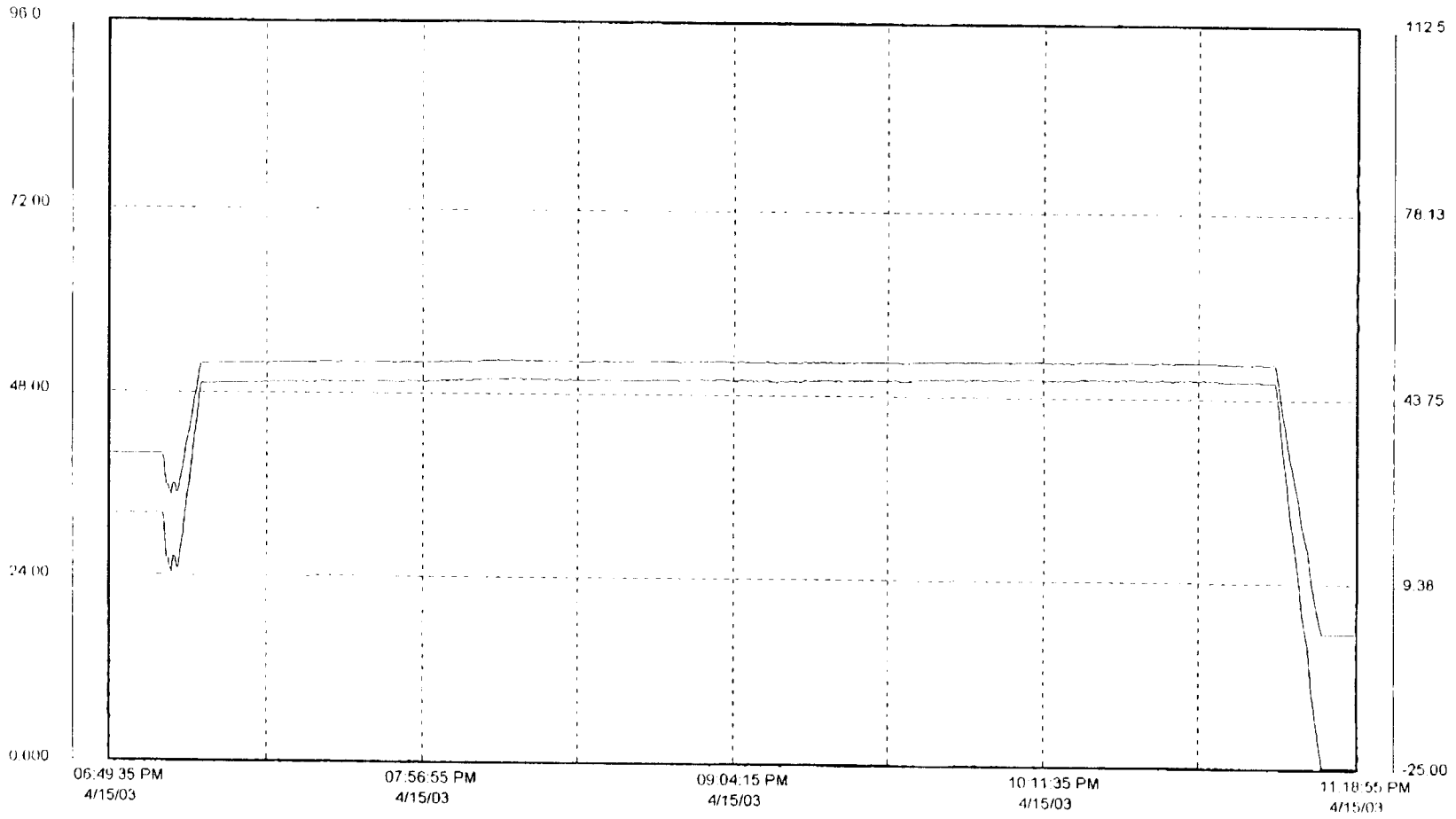
Unit 3B - Full Load to Shutdown



Legend	Trend Name	Comment	Min.	Max.	Avg.	Min. Scale	Max. Scale	Eng. Units
	A03B00SD8PV	NL HSS Speed	0.000	6350	2741	0.000	8250	rpm
	A03B00SD1PV	NH HSS Speed	0.000	10443	4848	0.000	16500	rpm
	A03B00SD3PV	NP HSS Speed	119.9	3656	2000	0.000	4400	rpm
	A03B00AV1PV	Average EGT	302.4	1078	598.1	-1060	2306	Deg F
	A03B00SD3CO	NP Reference	3590	3681	3636	0.000	4400	rpm
	A03B00CN8PV	In Control Analog	30.00	100.0	70.46	0.000	300.0	Units
	A03BFY1001PSSE	FY1001 Mod Valve Position Req	-0.001	-0.001	-0.001	-5.000	116.0	%
	A03UMWPV	MW	0.000	28.00	6.720	0.000	96.0	MW

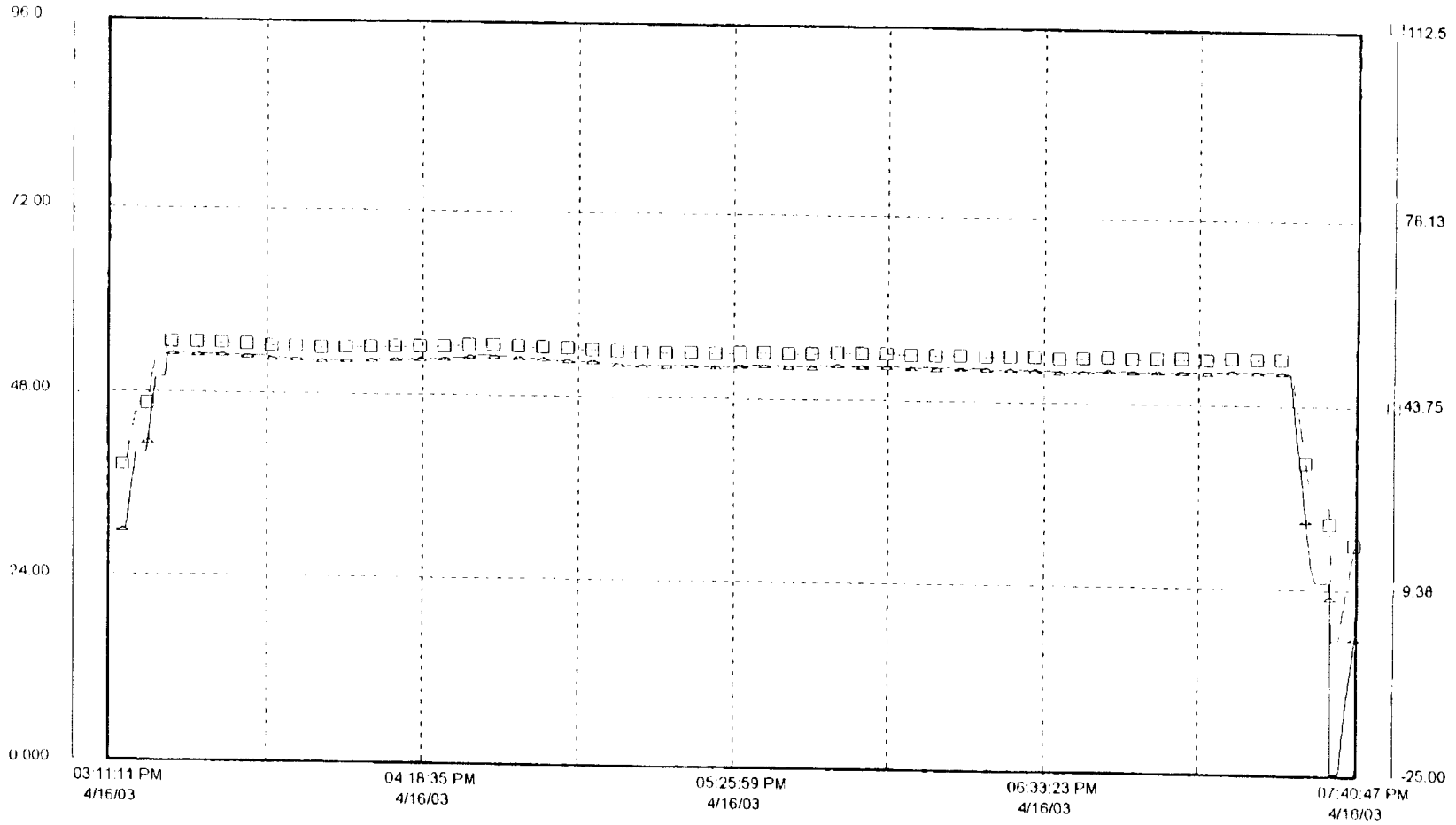
Attachment C

Trend Plot



Legend	Trend Name	Comment	Min.	Max.	Avg.	Min. Scale	Max. Scale	Eng. Units
	A04UMWPV	MW	0.000	50.58	46.38	0.000	96.0	MW
	A04UWT3801PW1MW	WT3801 Real Power Sensor	0.046	50.83	46.43	-25.00	112.5	MW

Trend Plot



Legend	Trend Name	Comment	Min.	Max.	Avg.	Min. Scale	Max. Scale	Eng. Units
	A03UMWPV	MW	0.000	53.32	50.34	0.000	96.0	MW
	A03UWT3801PW1	WT3801 Real Power Sensor	-0.254	53.37	50.38	-25.00	112.5	MW

Attachment D

Generation Interconnection Study for (2) 47 MW Generation Unit Additions on Empire District Electric Control Area

Performed by Empire District Electric
at request of Southwest Power Pool

(#GEN-2001-030)
(#GEN-2001-040)

January, 2002

Empire District Electric Co. (2) 47 MW Generation Unit Additions

Table of Contents

1. Introduction

Customer has made two separate requests to evaluate two 48 MW generation additions at the existing LaRussell Power station. The requests were logged as GEN-2001-030 and GEN-2001-040. A powerflow analysis, a short circuit analysis and a transient stability study was performed at the request of the Southwest Power Pool.

Presently, the LaRussell Power Station has two generation units each having the capabilities to produce approximately 90MW. The proposed generating units, referred to as #3 and #4, are scheduled to be in service (#3) June 2003 and (#4) December 2003. These units will be used to serve the EDE native load.

The powerflow analysis was conducted to look for equipment that overloads on the EDE, SPA, City Utilities of Springfield and two specific tie lines to Associated Electric due to the increased generation.

The short circuit analysis was conducted to evaluate the impact to short circuit capabilities at busses in close electrical proximity to the LaRussell Power Station.

The transient stability study was performed to verify machine performance following a disturbance on the system and to identify system stability issues.

2. Study Methodology

2.1 Power Flow Model

The Southwest Power Pool Load Flow Model 2004 summer peak (04sp.sav) and the 2004 winter peak (04wp.sav) models were used for the power flow analysis. However, the 04sp.sav case had a fictitious generation unit modeled at the LaRussell bus which was generating 150 MW. This generation was shifted to other actual units on the EDE system to develop a new case in which the impact of the new generators could be evaluated. The new generation was then modeled in 50 MW increments.

Evaluation of the 2006 cases, found that the generation modeled at LaRussell exceeded the existing capacity with the addition of both of the new generating units. EDE does not have the capacity of actual generation to re-dispatch from the LaRussell area; therefore, no evaluation of the new generation was done for 2006.

All generation units at the LaRussell Plant were increased to maximum capacity. Generation units at EDE Stateline Plant were reduced such that the total generation on the EDE system was equivalent to the base case generation. An 'n-1' analysis was performed in which all branches for EDE, SPA, and City Utilities of Springfield were outaged individually. Any equipment that had a loading greater than 100% of Rate B and was impacted by the additional generation at LaRussell was evaluated.

2.2 Short Circuit Model

A study was also completed to investigate how the additional generation would impact available short circuit current. The model that was used for the short circuit analysis was the 2005 summer peak (Sc05-1.raw) with the corresponding sequence data (Sc05-1.seq). No information was provided for the GSU for the new generation units so a very low impedance value of 6% for a 70 MVA transformer was modeled.

3. Discussion of Results

3.1 Power Flow Model

The results of the Power Flow study are shown in Table 1. The table contains the summer Rate B loading. The results labeled 'Base Case' were from 'n-1' study of the 04sp.sav case which had a fictitious generator modeled at the LaRussell bus producing 150 MW. The case with generation dispatched to actual units on the EDE system is labeled 'EDE Gen. Adjust'. The cases with the new generators #3 and #4 are labeled 'LaRussell 50 MW' and 'LaRussell 100 MW' respectively.

The results indicate that an AEC line from Carthage to Reads loads to 108%, the two auto-transformers at Carthage load to 109.7% and 110.5 %, the auto-transformer at Joplin 389 loads to 102%, and the 42 MVA auto-transformer at Aurora 124 loads to 102.4%. However, each of these branches are loaded beyond 100% under certain contingencies in both the Base Case study and the EDE Gen. Adjusted Study.

The winter study indicated that the new generation at LaRussell did not cause any branches to exceed the Rate B loadings.

3.2 Short Circuit Study Results

The increase in short circuit currents are shown in Table 2. The criteria for listing a bus in the Table 2 was that the bus was only one bus away from LaRussell or that there was more than a 1% increase in fault current. As can be seen in Table 2, there was little impact to the fault currents except at the LaRussell Power Station

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E FRI, NOV 30 2001 10:12 PAGE 1

1-2001 SOUTHWEST POWER POOL POWER FLOW MODEL
2004 SUMMER PEAK 04 SP RESULTS

*** ACCC OVERLOAD REPORT: MONITORED ELEMENTS LOADED ABOVE 100.0 % OF RATING SET B ***

DISTRIBUTION FACTOR FILE: E:\Generation 2004\04sp Extended.dfx
SUBSYSTEM DESCRIPTION FILE: E:\Generation 2004\Autocont.sub
MONITORED ELEMENT FILE: E:\Generation 2004\Autocont Extended.mon
CONTINGENCY DESCRIPTION FILE: E:\Generation 2004\04 extended.con

CONTINGENCY EVENTS	OVERLOADED LINES	MVA(MW) FLOW			
MULTI-SECTION LINE GROUPINGS	FROM NAME TO NAME CKT	PRE-CNT	POST-CNT	RATING	PERCENT
OPEN LINE FROM BUS 59468 [AUR124 5161.00] TO BUS 59480 [MON383 5161.00] CKT 1					CONTINGENCY SINGLE 54
BASE CASE	52690*CARTHG 269.0 96751 2REEDS 69.0 1	30.3	37.0	36.0	100.3
EDE GEN ADJUST	52690*CARTHG 269.0 96751 2REEDS 69.0 1	30.6	37.2	36.0	101.1
LARUSSELL 50 MW	52690*CARTHG 269.0 96751 2REEDS 69.0 1	30.4	37.3	36.0	100.9
LARUSSELL 100 MW	52690*CARTHG 269.0 96751 2REEDS 69.0 1	30.4	37.4	36.0	101.4
OPEN LINE FROM BUS 59479 [LAR382 5161.00] TO BUS 59480 [MON383 5161.00] CKT 1					CONTINGENCY SINGLE 83
LARUSSELL 50 MW	52690*CARTHG 269.0 96751 2REEDS 69.0 1	30.4	37.0	36.0	100.9
LARUSSELL 100 MW	52690*CARTHG 269.0 96751 2REEDS 69.0 1	30.4	37.6	36.0	101.9
OPEN LINE FROM BUS 59483 [JOP389 5161.00] TO BUS 59607 [JOP422 5161.00] CKT 1					CONTINGENCY SINGLE 92
BASE CASE	59483*JOP389 5 161 59592 JOP389 269.0 1	57.7	76.7	75.0	102.3
EDE GEN ADJUST	59483*JOP389 5 161 59592 JOP389 269.0 1	56.4	75.3	75.0	100.4
LARUSSELL 50 MW	59483*JOP389 5 161 59592 JOP389 269.0 1	57.5	76.5	75.0	102.0
OPEN LINE FROM BUS 52688 [CARTHAG5161.00] TO BUS 52690 [CARTHG 269.000] CKT 1					CONTINGENCY SINGLE 277
BASE CASE	52688*CARTHAG5 161 52690 CARTHG 269.0 2	52.4	91.5	84.0	108.9
EDE GEN ADJUST	52688*CARTHAG5 161 52690 CARTHG 269.0 2	52.4	92.5	84.0	110.1
LARUSSELL 50 MW	52688*CARTHAG5 161 52690 CARTHG 269.0 2	52.6	91.8	84.0	109.3
LARUSSELL 100 MW	52688*CARTHAG5 161 52690 CARTHG 269.0 2	52.9	92.2	84.0	109.7
OPEN LINE FROM BUS 52688 [CARTHAG5161.00] TO BUS 52690 [CARTHG 269.000] CKT 2					CONTINGENCY SINGLE 278
BASE CASE	52688*CARTHAG5 161 52690 CARTHG 269.0 1	53.4	92.0	84.0	109.6
EDE GEN ADJUST	52688*CARTHAG5 161 52690 CARTHG 269.0 1	53.4	92.1	84.0	109.6
LARUSSELL 50 MW	52688*CARTHAG5 161 52690 CARTHG 269.0 1	53.6	92.4	84.0	110.0
LARUSSELL 100 MW	52688*CARTHAG5 161 52690 CARTHG 269.0 1	53.9	92.9	84.0	110.5
OPEN LINE FROM BUS 52690 [CARTHG 269.000] TO BUS 96649 [2JASPER 69.000] CKT 1					CONTINGENCY SINGLE 442
BASE CASE	52690*CARTHG 269.0 96751 2REEDS 69.0 1	30.3	39.6	36.0	107.4
EDE GEN ADJUST	52690*CARTHG 269.0 96751 2REEDS 69.0 1	30.6	40.0	36.0	108.6
LARUSSELL 50 MW	52690*CARTHG 269.0 96751 2REEDS 69.0 1	30.4	39.8	36.0	108.0
LARUSSELL 100 MW	52690*CARTHG 269.0 96751 2REEDS 69.0 1	30.4	39.8	36.0	108.0
OPEN LINE FROM BUS 59480 [MON383 5161.00] TO BUS 59591 [MON383 269.000] CKT 1					CONTINGENCY SINGLE 87
BASE CASE	59468*AUR124 5 161 59537 AUR124 269.0 3	23.0	42.4	42.0	101.1
LARUSSELL 50 MW	59468*AUR124 5 161 59537 AUR124 269.0 3	23.0	42.5	42.0	101.3
LARUSSELL 100 MW	59468*AUR124 5 161 59537 AUR124 269.0 3	23.2	43.0	42.0	102.4

TABLE 1

Change in Fault Current with 100 MW increase in Generation at LaRussell						
Description			Fault Current		Results	
Bus #	Bus	KV	Initial	With 100 MW	Difference	% Change
52692	Springfield	161	26771	26931	160	0.6%
52688	Carthage	161	15731	16381	650	4.1%
59479	LaRussell 382	161	13672	15810	2138	15.6%
59480	Monett 383	161	10678	11102	424	4.0%
59468	Aurora 124	161	9156	9321	165	1.8%
59472	Tipton 292	161	14475	14658	183	1.3%
59591	Monett 383	69	11559	11718	159	1.4%
59476	Asbury 349	161	13463	13631	168	1.2%
59466	Atlas 109	161	14461	14757	296	2.0%
52686	Neosho SPA	161	13457	13610	153	1.1%
52690	Carthage	69	13814	13980	166	1.2%

TABLE 2

4. Transient Stability Study[1]

The transient stability analysis was performed to verify machine performance following a disturbance on the system and to identify system stability issues. The study includes an analysis of the 2002 summer peak Southwest Power Pool Transient Stability Model modified with the Empire generation units as well as certain other prospective merchant plants that are ahead of Empire in the Southwest Power Pool interconnection study queue. Machine dynamic data was included from the current stability dynamics database from SPP with additions and adjustments included for the later year generation additions. Simulation of bus fault conditions with subsequent clearing by protection systems was performed, and the machine parameters were monitored in the period during and immediately after the fault.

The study models were subjected to four fault conditions to test various levels of system disturbances. The events simulate the more probable as well as extreme cases of fault conditions as specified by NERC planning criteria.

A. Three phase fault on the LaRussell 161kV bus with subsequent clearing of the LaRussell-Monet 161kV line in 5 cycles.

B. Three phase fault on the LaRussell 161kV bus with subsequent clearing of the LaRussell-Springfield 161kV line in 5 cycles.

C. Three phase fault on the LaRussell 161kV bus with subsequent clearing of the LaRussell-Carthage 161kV line in 5 cycles.

Analysis of the machine dynamics indicates that the system remains stable following the disturbances for all contingencies tested for both LaRussell #3 and LaRussell #4 additions.

[1] The Transient Stability information is from the Southwest Power Pool (SPP) Report "Transient Stability Study Empire District Electric Co. (2) 47 MW Generation Unit Additions to LaRussell Power Station". The SPP performed the Transient Stability Study.

5. Facility Analysis

5.1 LaRussell Substation

The LaRussell Substation #382 will be converted from a "Ring Bus" configuration to a "Breaker and a Half" to allow for the two new generator terminations. The total cost of this modification will be $2,500,000.

5.2 Aurora Substation

The Aurora Substation 161/69 kV 42 MVA auto-transformer's loading increased due to the new generation at LaRussell. There are currently 2 other older and smaller auto-transformers in parallel with the 42 MVA auto-transformer. Currently, it is recommended that all of these auto-transformers be replaced with one 150 MVA. The cost of this modification is $2,000,000.

Attachment E

16:00	1475.9 MW 37.6 MW Aux
16:14	Lowered Load to 22.5 MW
16:40	Lowered Load to 20.2 MW
1648	Lowered load to 18 MW
17:00	1499.4 MW 37.7 MW Aux
17:03	Gen breaker opened
17:03	End of Run 1500.1 MW 37.7 MW Aux
04-15-03	
07:31	* Start both engines, Fuel oil, wet, base load selected.
07:37	Generator Breaker Closed Unit on line
07:46	Unit at Base load EGT in Control
07:48	A- F/oil 997 B F/oil 1073
08:00	1515.5 mwH 38.3 MWH AUX.
09:00	1564.0 MWH 38.4 MWH AUX
	A Engine F/oil 1221 B Engine F/oil 1300
10.00	1612.4 38.6 MWH AUX
	A engine F/oil 1399 B engine F/oil 1479
11:00	1660.2 MWH 38.7 MWH AUX
	A ENGNE FUEL OIL 1579 B-ENGINE FUEL OIL 1663
12:00	1707.2 MWH 38.8 MWH AUX
	A engine fuel oil 1757 B engine fuel oil 1845
12:11	Stop both engines
12:20	Generator Breaker Open Unit off line
	1719.3 MWH 38.9 MWH AUX
12:32	* Start both engines on Fuel oil
12:37	Unit on line
12:39	Stop engine A
12:42	Base load EGT in Control 22.2 MW
12:48	Start A engine
12:58	Base load w/ both engines 46.3 MW
13:00	1728.6 MWH 38.9 MWH Aux
	A Fuel Oil 1826 B Fuel Oil 1956
	2132

From Unit 4 Log Book

16

04-15-03 (cont.)		04/16/03	
15:00	1820.2 MW 39.2 MW Aux	0747	Start
	Engine A F/o 2181 Engine B F/o 2309	0752	Gen I
15:48	Selected Program Mode Load set at	0802	Achiev
	95% 43.70 MW	0900	2237
16:00	1865.5 MW 39.3 MW Aux	0950	Started
	Engine A F/oil 2353 Engine B. F/oil 2486	10.00	2289
16:32	Load Lowered to 41.40 90% load.	11.00	2341.
17:00	1908.4 MW 39.5 MW Aux.	11:54	Dropp
	Engine A F/oil 2516 Eng B. Fuel Oil 2657	12:00	2390.
17:25	Lowered load to 36.7 MW 80% load	12:42	Dropp
18:00	1947.0 MW 39.5 MW Aux	13:00	2438
	Engine A F/oil 2666 Eng. B F/oil 2815	13:27	DROPPED
18:12	Lowered load to 32.2 MW 70% load.	14:00	2482
19.00	1979.8 MW 39.7 MW Aux	14:07	DROPPE
	Eng A F/oil 2791 Engine B F/oil 2952	15:00	2518
* 19:02	Xfer to Gas Fuel	15:05	Stop
19:06	Unit @ Base load 49.5 MW.	15:11	Gener
19:15	End F/oil count A = 2800.8 B = 2957.0	15:11	252
20:00	2028.5 MW 39.8 MW Aux	4/24/03	
21:00	2076.6 MW 39.9 MW Aux		
21:20	Walked unit down noted leak on RTD on	07:00	Adde
	top of Generator Oil tank. Small drip	5/02/03	
	coming from filter drain plug on bott.	14:11	START
	Checked lube oil levels all full. Generator	14:13	FF BREA
	lube oil ½" above full mark.	14:20	START E
22:00	2126.6 MW 40.1 MW Aux	19:25	REACH
23:00	2176.9 MW 40.2 MW Aux	20:35	TURBIN
23:01	Stop both engines	21:41	Stop
23:11	Generator Breaker open unit off line	15:5	
23:25	2182.0 MW 40.2 MW Aux	15:59	
04-16-03		16:0	
00:14	operate/lockout switches to lockout position	16:59	Gen

Attachment F

+ 1916 Eng A PTTB Pres. Dif. Alarm
2015 Lowered Load to 51.5 MW
2056 Stopped Both Engines
2104 GEN. Breaker Open Unit offline

1-28-04

0603 Start Both engines
0603 Trip 125 VDC Charger
0604 Restart Both engines
0610 Units Online
0613 Base Load Selected
0617 Eng B Trip PB DOT
0618 Restart Eng B
610 + 0620 Pressure Ratio Alarm Eng B PTTB
0703 61 MW 25° Inlet 14.5 ppm NOx
0822 Lower load to 55 - to raise unit #4 for NOx
0828 " " " 30 mw
0841 Raise load to 40 mw
0856 Lower load to 25 mw.
1032 Stop both engines
1036 Unit off line.
1500 Changed TC ON 3B #4 Exhaust - it has a bad terminal on the
20:22 checked screens, everything looks ok Lockout/Operate permissive switch locked

1-29-04

0300 Walk Thru Completed
0652 Start Both Engines
0652 Trip 125 VDC charger
0652 Restart Both Engines
0659 Generator Breaker closed unit online.
0702 Eng A Trip caused by PBDOT
0702 Generator Breaker open
0704 Generator Breaker closed
0710 Restart Eng. A.
* 0716 Transfer to liquid Fuel
0719 Raise load to 40 MW
0902 Lower load to 25 mw
0911 Stop Eng A.
0946 Lower load to 17 mw
1007 Base load selected
1104 Program load selected
1104 Lower load to 15 mw
1142 Transfer to Gas

From Unit 3 Log Book

From Unit 4 log Book

719 Start B
720 B FTL 86 EB
731 Start B
732 B Trip Cold Can
736 Start 4B
736 B Trip Cold Can
TE009 Low
756 A PTTB Pressure Diff Alarm
733 B Bently K Flange Alarm
0824 Start 4B
824 B Trip Cold Can TE009 100°
500 on ot

09:00 Stop engine A
09:01 PTIB PT1701 Pr Sensor Gros
(ENG A PTB.) (TRIP unit off Line
1820 STARTed "B" on GAS 25MW Selected
1826 Generator Breaker Closed - Unit on Li
1956 Stopped "B" Engine
1959 Generator Breaker Open - Unit off Li
2100 ✓ screens AOK, Ready Light, Unit ready to start
Cal gas @ 1200

12:12-03
0100 Walk thru complete
06:57 Start Both engines
07:02 unit on line
* 07:09 transfered to fuel oil @ 25MW
08:04 Stop Both engines